



QRO

MONTHLY NEWSLETTER OF THE PALOS VERDES AMATEUR RADIO CLUB

JULY 2018



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The Secrets of End-Fed Wire Antennas

Bob Brehm, AK6R

&

Short Video: ARRL Field Day in the Los Angeles Section

Diana Feinberg, AI6DF

Thursday, July 5, 2018

General Meeting: 7:30 pm

"What's Next?" group: 6:30 pm

Fred Hesse Community Park
29301 Hawthorne Blvd.

Rancho Palos Verdes, CA 90275
Visitors Welcome

*(PVARC pre-meeting dinners at the
Red Onion Restaurant are discontin-
ued but members are free to eat
there or elsewhere on their own.)*

At our July 5 meeting, learning about end-fed wire antennas...

At our July 5th meeting Bob Brehm, AK6R and Chief Engineer of ferrite-products manufacturer Palomar Engineers in San Diego County, will speak about “The Secrets of End-Fed Wire Antennas.”

The characteristics of these simple antennas will be discussed and how to effectively match their high-impedances with your 50-ohm radio. Hams with antenna restrictions can throw a long-wire into a tree, hang one from a 2nd floor, or use long-wire antennas while vacationing. But just a single wire is only half an antenna—so some type of ground or counterpoise is also essential.

Bob has over 50 years of ham experience with interests in contesting, RTTY, amplitude modulation, vintage radio restoration, boat anchors, linear amps and unique antennas. Bob is often asked to speak at conventions and radio club meetings about RFI, antenna matching, using baluns/ununs, stealth antennas, amplitude modulation, RTTY/digital modes, ESSB, ham radio on boats, and a variety of other subjects. He holds B.S. and M.S. degrees in electrical engineering from U.C. Berkeley. His firm Palomar Engineers sells a wide variety of ferrite products for either changing impedances or stopping interference from all sorts of electrical sources including solar power systems, “grow lights,” common transformers in homes, and electric power line noise. ■

...and a short video: “From Los Angeles, it’s ARRL Field Day” at some familiar places and others you’ve likely never seen

As a short subject at the PVARC’s July 5th meeting we have a fast-paced 10-minute video showing the 2018 ARRL Field Day at 18 sites throughout Los Angeles County. Your QRO Editor Diana AI6DF along with Gary Lopes, WA6MEM, drove 281 miles on Saturday, June 23, visiting Field Day sites in the ARRL Los Angeles Section. Another 39 miles were traveled on Sunday, June 24. This video will show some sites with very simple but effective operations while others are complex undertakings—and some are truly “off the beaten path.” We believe PVARC members will enjoy seeing the varied ways Field Day was experienced in the Los Angeles area. ■



Have you been here?

PVARC members are unlikely to have visited this unusual Field Day site in the Los Angeles area. A 10-minute video at our July 5th meeting showing 2018 Field Day throughout the ARRL Los Angeles Section will reveal this strange location...and who operated there. Other familiar as well as seldom-visited Field Day sites will be shown too.

PHOTO:
DIANA FEINBERG, AI6DF

PVARC's upcoming meeting topics...

Attention all PVARC members: There's no monthly meeting in August so do not show up at Hesse Park on August's 1st Thursday. Instead we have our free annual family picnic at Pt. Vicente Lighthouse on Sunday, August 19, during International Lighthouse & Lightship Weekend. More information to follow.

Our September 6th monthly meeting has Tim Coker, N6WIN, speaking about "The Reverse Beacon Network" which many contesters and DXers use to check propagation conditions. RBN is currently studying whether to also post FT8 spots...these would greatly increase demands on RBN's servers.

The topic of our October 4 monthly meeting will be announced soon.

show Us Your Shack

And back for an encore later in 2018....

We still seek four to six PVARC members to briefly (in 10-15 minutes) present their home amateur radio station, a portable ham station, or some kind of amateur radio project that fellow club members might find interesting. Have something you feel worthy of presenting at a future meeting? Contact our Vice President Ray Day, N6HE, at rayday@cox.net and let him know.

Would you like your "Show Us Your Shack" presentation filmed at your home and later shown at our meeting? Diana, AI6DF, is glad to bring her video camera and let you present. No need to create a PowerPoint presentation or bring equipment to Hesse Park (unless you wish to do so.) ■

Other PVARC upcoming dates in 2018

- ◆ **PVARC monthly meeting at Hesse Park, McTaggart Hall**
1st Thursday each month, 7:30-9:30 pm, except in August and December
- ◆ **HF Enthusiasts Group meetings at Palos Verdes Library, Peninsula Center (Purcell Room)**
2nd Saturday each month, 10 am to Noon, except December
- ◆ **Walt Ordway, K1DFO, amateur radio license classes at Hesse Park**
August 4 and 18; November 3 and 10; license exams Sat. after 2nd class dates
- ◆ **International Lighthouse & Lightship Weekend at Pt. Vicente Lighthouse**
Friday-Sunday, August 17-19; PVARC Family Picnic at the Lighthouse, Sunday, August 19, 12:30 pm (subject to final U.S. Coast Guard approval.)
- ◆ **Public service events:** Rolling Hills Estates Hills Are Alive 10K/5K, August 11; Conquer the Bridge Run/Walk, September 3; Palos Verdes Half Marathon, November 17. TBD: RAT Beach Bike Tour.
- ◆ **PVARC 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. ■

PVARC Field Day recap: A new site with some new challenges but great performance despite propagation, weather elsewhere

Field Day Year * FD operations disrupted by sprinklers overnight	(A) K6PV (2A Station) Total Points	(B) K6PV Rank of all Field Day stations (all classes, nationwide)	(C) K6PV Rank of all 2A stations in ARRL Southwest- ern Division	(D) K6PV Rank of all 2A stations, ARRL LAX Section
2018	4,288	???	???	???
2017	4,238	338 th of 2,965 (top 11%)	3 rd of 28	2 nd of 10
2016	4,742	243 rd of 2,696	2 nd of 31	1 st of 9
2015	5,780	193 rd of 2,270	4 th of 27	3 rd of 9
2014	4,932	252 nd of 2,686	4 th of 32	2 nd of 9
2013*	4,248	331 st of 2,548	5 th of 26	1 st of 5
2012	5,188	259 th of 2,617	5 th of 24	1 st of 8
2011*	4,492	341 st of 2,632	6 th of 24	1 st of 5
2010	5,468	219 th of 2,617	5 th of 31	1 st of 8
2009*	3,930	391 st of 2,603	9 th of 27	3 rd of 7
2008	4,160	332 nd of 2,409	4 th of 27	1 st of 9
2007	3,216	511 th of 2,331	6 th of 28	2 nd of 7
2006	5,242	223 rd of 2,169	4 th of 30	2 nd of 5
2005	6,216	162 nd of 2,199	3 rd of 32	2 nd of 8
2004	7,118	126 th of 2,242	3 rd of 30	2 nd of 7
2003	6,192	126 th of 2,079	4 th of 37	3 rd of 8
2002	6,246	194 th of 2,099	3 rd of 28	1 st of 7

Field Day 2018 was a new experience for the PVARC.

We quickly adjusted to a new site at Soleado Elementary School that offers a superb antenna location, although vehicle and public access wasn't as readily open as Ridgecrest Intermediate School—our site during the 2011-2017 Field Days.

Our overall score for 2018 Field Day totaled 4,288 points, just 50 above 2017. Severe weather in the Midwest and mid-Atlantic states likely kept many Field Day stations off the air for varying periods—leaving us with fewer contact possibilities.

Cool Los Angeles area weather was the most unusual for a Field Day we've seen in quite a while. Many sites (including Soleado) had light rain or heavy condensation overnight before FD started.

Breezes and thick clouds kept temperatures well below normal during FD 2018 at many sites around L.A. At the Santa Clarita ARC in Bouquet Canyon (usually roasting at 95-100 degrees on Field Day weekends) this year people were wearing long-sleeve shirts and even light jackets as the mercury stayed in the upper 70's.

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PVARC Field Day recap: New site, some new challenges, but great performance despite propagation and weather elsewhere

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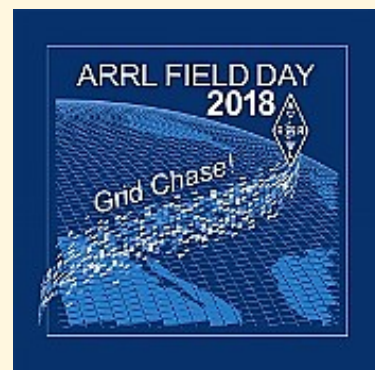
Operationally we sited our CW and SSB tents at Soleado near each other to share the PVARC's tower trailer antennas when feasible and to provide better overnight security. Overall, we worked 68 of the 71 ARRL Sections (all except Northern New York, Delaware, and U.S. Virgin Islands.)

The biggest propagation surprise during 2018 Field Day was 15-meters opening for various periods (and 10-meters briefly) after being nearly dormant in the past two Field Days. 40-meters proved challenging on Saturday at many Field Day sites and we found 80-meters overnight had higher noise levels than in recent years.

As shown in the table below, we made 640 CW contacts (each worth 4 points) and 454 phone contacts (each worth 2 points.) Our total contacts vary from year to year depending on the operators at certain hours, band conditions, technical aspects of equipment, and in the past lawn sprinklers that would mysteriously turn on during overnight hours to soak our tents. This year we ensured the sprinklers were shut off and all arrangements at Soleado Elementary School went extremely well. We hope to operate there again next year. ■

Band	K6PV Field Day CW QSOs							K6PV Field Day Phone QSOs						
	2018	2017	2016	2015	2014	2013	2012	2018	2017	2016	2015	2014	2013	2012
160 m	—	--	--	--	--	--	--	—	--	--	--	--	--	--
80m	—	--	64	--	--	--	--	75	115	--	99	24	53	31
40m	175	257	150	121	160	206	--	66	--	55	19	107	27	24
20m	330	400	608	371	208	209	319	132	217	118	172	241	297	310
15m	121	35	104	364	180	167	389	100	3	9	113	211	91	273
10m	14	--	5	18	46	--	--		--	--	--	--	3	1
6m	—	--	--	--	--	--	--	41	27	28	99	115	55	47
2m	—	--	--	--	--	--	--	31	29	20	9	11	19	29
1.25 m	—	--	--	--	--	--	--	—	—	--	--	3	--	--
70 cm	—	--	--	--	--	--	--	9	4	4	--	4	5	7
Sat.	—	--	--	--	--	--	--	—	—	--	1	1	--	1
GOTA	—	--	--	--	--	--	--	—	--	--	50	46	25	--
Total	640	692	931	874	594	582	708	454	395	234	562	763	575	723

Some scenes from the PVARC's 2018 Field Day at Soleado...



Left top: Rocco, N6KN, does high-speed CW.

Left bottom: Generator Alley at K6PV's site.

Right center: Chris, KA6WNK (front), and Bob, W6HIP, operate in the SSB tent.

Right bottom: Tri-band beam and support system of Dale, N6NNW, for our SSB station.

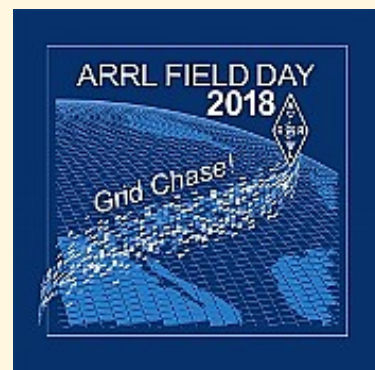


ALL PHOTOS: RAY DAY, N6HE

...More PVARC 2018 Field Day scenes...



Above: Hot coffee cold-weather cheers from Daisy and Bob Millard, AC6RM, operating the VHF/UHF bonus station at PVARC's FD site.



Right: A peek inside our HF SSB tent .

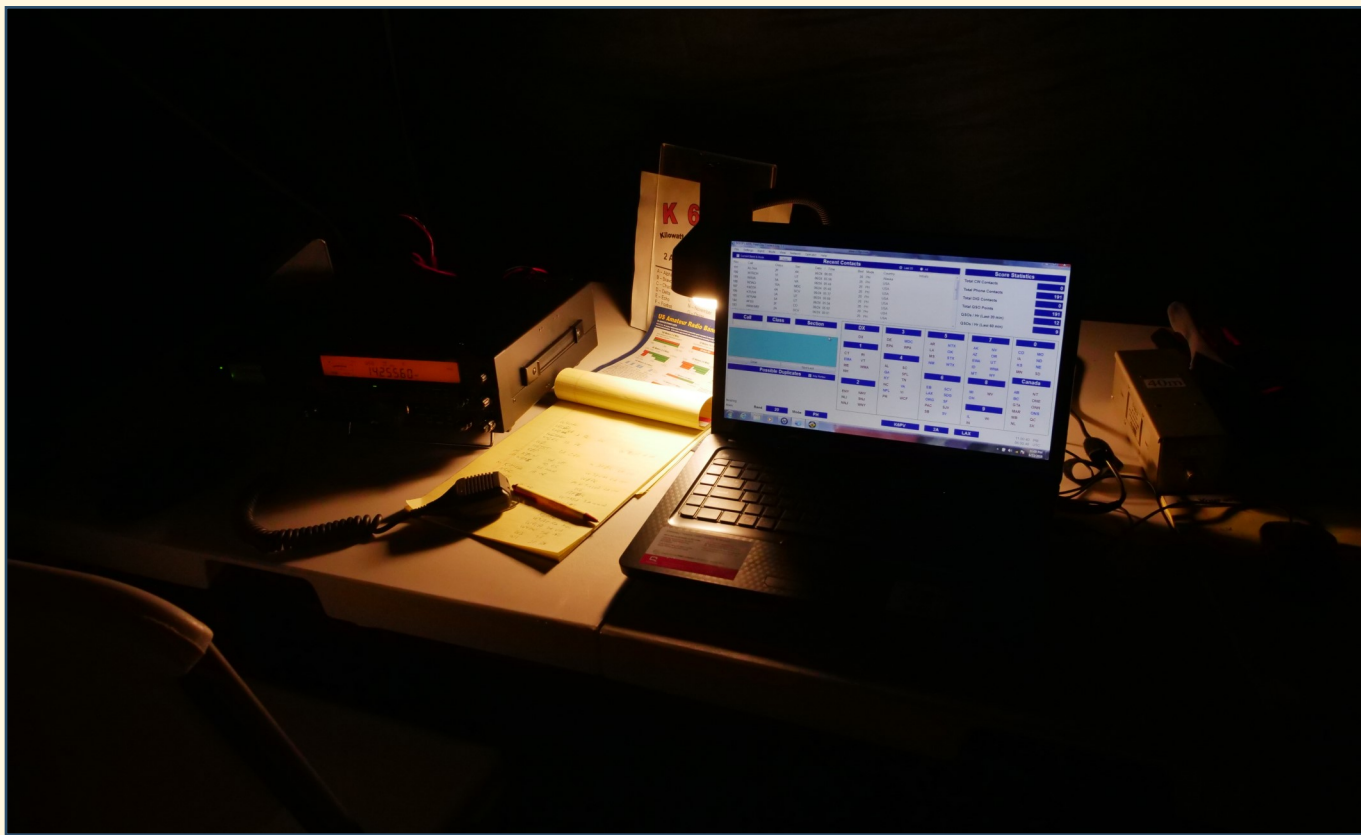


Below: The PVARC's tower trailer was backed up to Soleado Elementary School's outer fence atop a steep cliff...providing an outstanding take-off angle for 80 through 10 meters.



ALL PHOTOS: MALIN DOLLINGER, KO6MD

...More PVARC Field Day: Like at casinos, Field Day action goes on around the clock and sometimes you forget what time it is



Above: Glow inside the K6PV SSB tent around 1 am Sunday while doing 80-meter phone.

Below: Our Field Day stations had beautiful night views...the K6PV site shown at about 2 am Sunday during breezy conditions with CW tent at left-center and SSB tent to right. Positioning the two stations near each other allowed both to use our hexbeam and wire dipole antennas on the club tower trailer. PHOTOS: DIANA FEINBERG, AI6DF



Thank you to everyone who made our 2018 Field Day possible

Operators, set-up assistance, and attendees:

Blake Bartosh, K6BWB
 Mike Caulfield, AF6VT
 Bob Closson, W6HIP
 Robert Cullinan, KM5DI
 Clay Davis, AB9A
 Ray Day, N6HE
 Malin Dollinger, KO6MD
 Diana Feinberg, AI6DF
 Stuart Gorsky, K9STU
 Dale Hanks, N6NNW
 Rick Heaston, KM6GXZ
 Gary Kaneshiro, KJ6HUJ
 Robert Keefer, KO6UA
 Jerry Kendrick, NG6R
 Peter Landon, KE6JPM
 Rocco Lardiere, N6KN
 Gary Lopes, WA6MEM
 Cindy Matsuda, KJ6NWO
 Bob Millard, AC6RM
 Daisy Millard, AC6RM XYL
 Alan Soderberg, W8CU
 Chris Storey, KA6WNL
 Bob Sylvest, AB6SY
 Brian Tilley, KA6UHM
 Jeff Wolf, K6JW

Visitors:

Madison Deangelas
 Julie Sylvest
 Michelle Sylvest
 Danielle Wyss
 Don & Paige (Soleado neighbors)

Equipment Providers

Generators

Bob Closson, W6HIP
 Jerry Kendrick, NG6R
 Bob Sylvest, AB6SY

Solar Power

Bob Closson, W6HIP

Coax and power cables

Bob Closson, W6HIP
 Clay Davis, AB9A
 Ray Day, N6HE
 Diana Feinberg, AI6DF
 Jerry Kendrick, NG6R

Transceivers, Power Supplies, and Filters

Diana Feinberg, AI6DF
 Jerry Kendrick, NG6R
 Rocco Lardiere, N6KN
 Bob Millard, AC6RM
 Chris Storey, KA6WNL

Antennas and supports

Clay Davis, AB9A
 Diana Feinberg, AI6DF
 Dale Hanks, N6NNW
 Peter Landon, KE6JPM
 Chris Storey, KA6WNL

Furniture and Tents

Diana Feinberg, AI6DF
 Peter Landon, KE6JPM
 Bob Millard, AC6RM
 Daisy Millard, AC6RM XYL
 Sid Wielin, KF6QFH
 Fran Wielin, KF6QFG

Facilities

We greatly appreciate the Palos Verdes Peninsula Unified School District and its Soleado Elementary School allowing us to use their campus.

Right: Bob, W6HIP, brought his solar panels and batteries to provide additional Field Day points for K6PV.

PHOTO: RAY DAY, N6HE



We've listed everyone shown on our sign-in sheets, noticed in photos, or whose Field Day involvement we otherwise knew about. Please advise your QRO Editor if we inadvertently omitted you.

PVARC's HF Enthusiasts Group has many interests — The next meeting is July 14 at PV Library main branch

By Malin Dollinger, KO6MD

The June 9th HF meeting was well attended, with 13 hams participating.

Jerry Kendrick, NG6R, discussed troubleshooting of problems with new electronic replacement components he purchased for an Astron power supply being repaired. Some were found to be defective as manufactured which suggested the need to test replacement components, to the greatest possible extent, prior to installing.

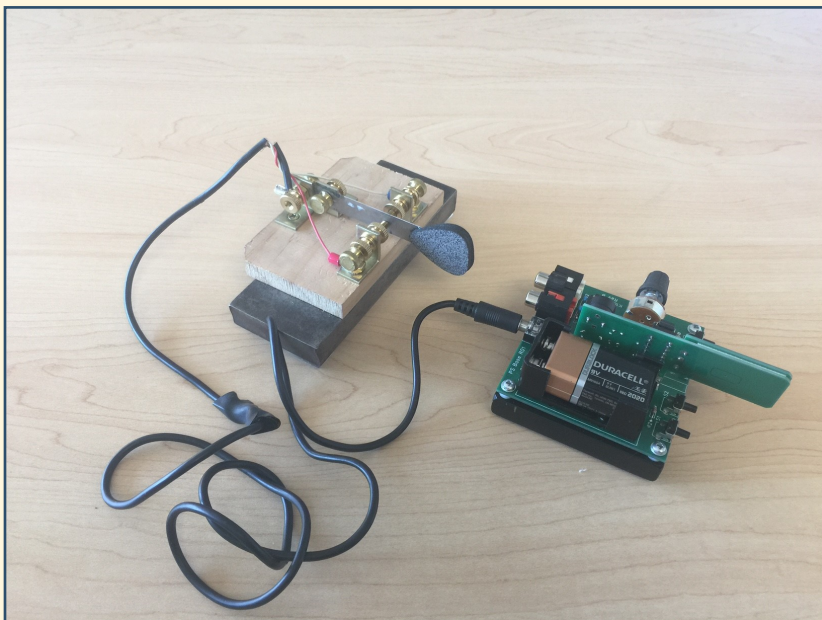
George Nestojko, WA6YBR, showed us his K1EL PaddleStick CW Keyer he built from a kit (Photo, lower left) This comes with a heavy metal base, sells for about \$59, and has good recommendations on eHam.net. It comes with a touch paddle and also has a mechanical “bug” key, home-brewed using hardware from Home Depot. The pads are guitar picks and the blade is from a hacksaw. He mentioned a CW course website, by Chuck Adams, K7QO, which this reporter subsequently downloaded and found to be very informative and useful.

Jeff Wolf, K6JW, reported that his new Elecraft KPA1500 amplifier arrived and is working wonderfully.

There was a group discussion of antenna authorization problems, in particular by homeowners associations/condos, and we discussed various strategies to resolve and work through such difficulties.

Further discussions concerned the FlexRadio 6000 series and Clay Davis AB9A showed us how the rig in his shack could be operated and controlled remotely via his iPad. That screen shows the entire control panel, as if he were in his shack. He was asked to make a live contact with his remote equipment during next month's HF meeting.

We meet next on July 14 for our regular 2nd Saturday morning HF meeting at the Peninsula Library. ■



Left: The homebrew CW keyer made by George, WA6YBR

Above: Partial view of attendees at June 9th HF Enthusiasts Group meeting.

PHOTOS: MALIN DOLLINGER, KO6MD

Astron Linear DC Power Supplies

Part 1: Basic operation and common failure modes

By Jerry Kendrick, NG6R

If you have a DC power supply (PS) in your ham shack to power your base station transceivers (or shack-located mobile radios), chances are it's made by Astron Corporation of Irvine CA. Astron has been making DC power supplies for many decades; they range in output currents from just a few amps (RS-3) to 70 amps (RS-70). While often referred to simply as "twelve-volt supplies," they are usually adjusted to (and spec'd at) 13.8V DC output voltage, to be consistent with automotive applications in which generator or alternator voltages tend to run just under 14 volts.

This article focuses on the basic nature of these supplies, how they function, what generally goes wrong with them to require repair intervention and some elementary repair solutions, just in case yours is misbehaving and you don't want to abandon it or sell/trade it as junk at the next ham radio swap meet.

Linear in the title of this article refers to a type of DC power supply that uses a fairly large and heavy AC step-down transformer and has a larger footprint than the newer and considerably more efficient switching (or switch-mode) power supplies. Switching supplies basically convert the source AC into high-frequency AC (many kilohertz) that can then be stepped down to a lower voltage using a much smaller transformer. Linear supplies are simpler than switching supplies so they are generally more reliable. And, linear supplies are free from high-frequency noise that can exist on the DC output (in addition to EMI created by switching transistors) with some switch-mode supplies.

Although there are many different schematics of the various vintages of these Astron linear DC supplies on the Internet, their architecture fundamentally hasn't changed since their introduction several decades ago. With the exception that some versions of the Astron supplies omit the over-voltage protection (OVP) circuit, Figure 1 is the basic block diagram for virtually all their linear (different from switch-mode) power supplies, from the smallest to the largest.

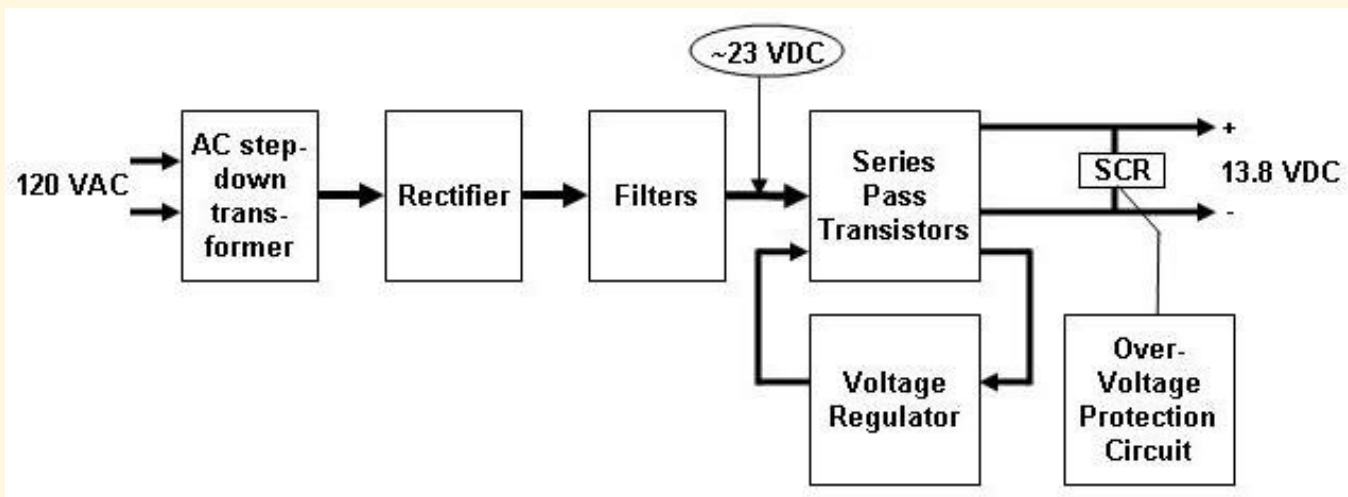


Figure 1. Typical block diagram of Astron linear DC power supplies. Virtually all Astron supplies use this architecture, although some versions omit the over-voltage protection circuit. The amount of load current a given configuration is able to deliver is determined by the number of series pass (power) transistors located on heat sinks on the rear panel of the supplies (ranging from one to 16 transistors).

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Astron Linear DC Power Supplies

Part 1: Basic operation and common failure modes

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Referring to Figure 1, line voltage of 120VAC is stepped down in voltage using a hefty transformer; the lower AC voltage is then rectified and filtered; the resulting low-ripple DC voltage of approximately 23 volts is applied to the series pass transistors (ranging from just one transistor for the smallest supply up to 16 parallel pass transistors for the 70A supply). The series pass transistors, through which the PS output current passes, drop the DC voltage from ~23V to 13.8V (or slightly different from this value, as adjusted over a limited range by a potentiometer in the voltage regulator circuit). The voltage regulator senses the output voltage from the PS and, through the voltage regulator feedback path shown, adjusts the current driving the base terminals of the series pass transistors so as to hold that 13.8V on the PS output terminals, even as the output current varies (over the range of currents able to be delivered by the specific PS unit).

The over-voltage protection circuit, when included, also senses the PS output voltage; if that voltage exceeds an amount maybe 15% to 20% higher than the nominal output voltage, the over-voltage protection circuit will send a voltage signal to a silicon controlled rectifier (SCR), sometimes called a thyristor, placed directly across the PS output terminals. That voltage signal will effectively tell the SCR to fire, i.e., to “short out” in order to protect any sensitive units that might be powered by the PS. This feature is often referred to as a “crowbar.” The main PS AC fuse may (but may not) blow when this happens and then have to be replaced. But, the safety afforded by this protection circuit is generally considered a valued feature of Astron supplies so equipped.

To dig somewhat deeper into the operation of this linear supply, consider the schematic of the RS-12A supply shown in Figure 2. Major sections of the block diagram above are shown dash-lined onto this schematic.

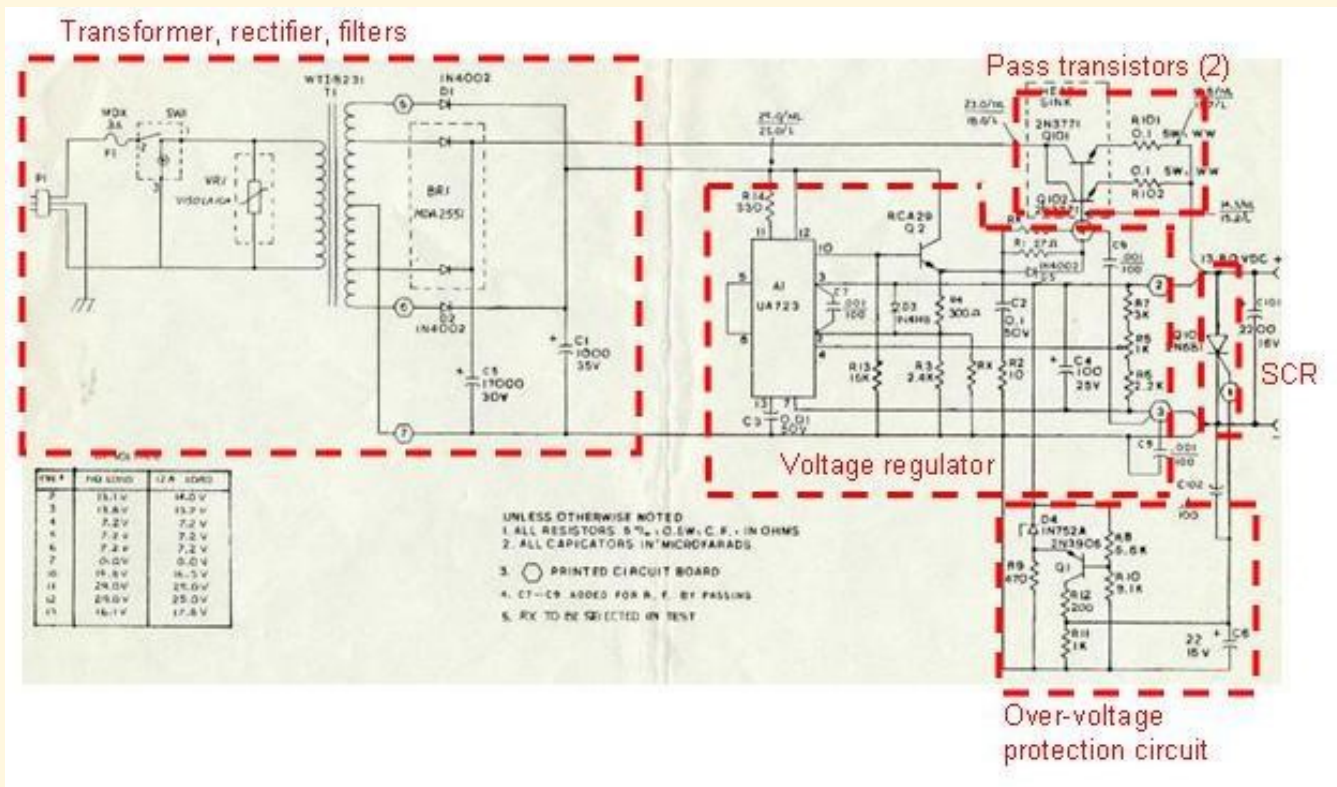


Figure 2. Stock Internet schematic of the Astron RS-12A PS with major sections of the PS block diagram superimposed on the schematic. Note that for this 12-amp supply, only two series pass (power) transistors are employed. *Continued on next page ►*

Astron Linear DC Power Supplies

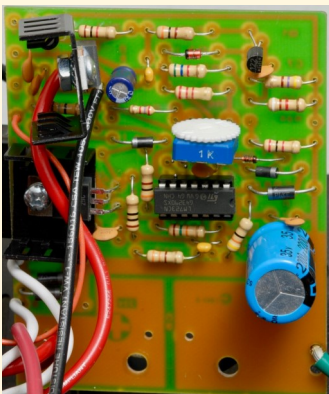
Part 1: Basic operation and common failure modes

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It is worthwhile to identify the key active components and the measurement consequences when those components fail. Where to start in anomaly troubleshooting depends on what the measurements are revealing about likely failure modes. Without attempting to provide a detailed troubleshooting guide here in this limited article (see the references instead), we'll just identify the likely suspects.

It should be noted that failures of the AC step-down transformer are rare. That's good, because this is probably the most expensive component. The rectifiers sometimes fail and may show a high AC content on the line going to the pass transistors. Not quite as rare a failure as the transformer, they also tend to last a long time.

The main component in the voltage regulator circuit is the 14-pin LM723 integrated circuit (IC) chip. This is plugged into an IC socket on the regulator board (except for the really old units where it's soldered directly onto the board), as shown near the center in Figure 3 left panel. If the output voltage from your supply isn't very stable, i.e., varying several tenths of a volt, especially under load, the culprit is likely the LM723 IC chip. They're inexpensive (less than a dollar each) and are easily and quickly replaced—just plug in the new one (in the correct orientation, noting the top-side dimple at one end of the chip). Near the IC chip in Figure 3 is the 1 kilohm potentiometer that can be adjusted over a limited range to set the output voltage, using the thumb-wheel control shown. Also placed on the voltage regulator board is the transistor that supplies the drive signal to the series pass (power) transistors. That transistor is the TIP29 that is mounted to a heat sink and shown in the center panel of Figure 3 and also in the left center portion of the left panel in Figure 3. A failure of the TIP29 transistor can either remove the drive to the pass transistors altogether—resulting in no PS output voltage—or fail in such a way that the pass transistors are driven into saturation and result in excessive voltage (upwards of 23V) attempting to appear on the PS output terminals. Now in this latter case, IF the over-voltage protection circuit is present and working, this high output voltage would be detected and the SCR would fire—“shorting” the output—resulting in a voltage of about 0.9V on the output terminals. So, if the PS you're troubleshooting is showing approximately one volt on the output, the over-voltage protection circuit has kicked in, so now you need to find out why. To take that one step further, what if the fuse blows each time you replace it and turn the unit on? It might be that the over-voltage protection circuit senses a high output voltage, fires the SCR, thus shorting the output and causing the fuse to blow. To proceed with a fix, you'd first need to temporarily disconnect the line from the OVP circuit to the SCR, thus taking it out of action until you can find out what is driving the unit into an over-voltage condition. (We'll examine this particular situation in an actual troubleshooting and repair example in Part 2 of this article in a future **QRO** issue.)



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Figure 3. (left) Typical Astron PS voltage regulator PCB. Note the 14-pin LM723 plugged into its IC socket at the center of the board. (center) TIP29 transistor that drives the bases of the pass transistors and which can be seen attached to a heat sink at center left on the PCB. (right) Top and bottom views of 2N3771 series pass transistors; these are placed on heat sinks on the rear panel of each PS.

Astron Linear DC Power Supplies

Part 1: Basic operation and common failure modes

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The OVP circuit is centered on the small and inexpensive 2N3906 general purpose PNP transistor (the small black device seen in the upper right corner of Figure 3 left panel). The OVP circuit, using a zener diode as a voltage reference, senses when the PS output voltage is deemed to be too high and when it is too high sends a signal to the SCR to fire and short the output terminals. A failure of this 2N3906 transistor might cause the SCR to fire when it shouldn't or not fire when it should, depending on the transistor's failure mode. It is so inexpensive (a few cents in even moderate quantities), any suspicion that the OVP circuit isn't functioning properly should result in first changing out this transistor, then proceeding with further troubleshooting.

The series pass transistors are 2N3771 power transistors, shown in the right panel of Figure 3. The number of these power transistors in a particular unit depends on the current rating of the unit, as explained earlier. They are generally considered to be in "parallel" except that there is a very small resistor (0.1 ohms usually) in the emitter leg of each 2N3771 to enable "load balancing" so as to properly share current load across all the pass transistors. A shorting failure across one of the pass transistors could cause the PS output voltage to increase and perhaps trigger the OVP circuit. An open failure might not be so obvious until a heavy electrical load was placed on the PS, perhaps causing overheating of the other parallel transistors. Feeling the temperature of each pass transistor under load might indicate an inoperative "cold" one. Replacement of this transistor is a bit more involved than the other active devices discussed earlier. Care must be taken to use an insulating mica sheet under the transistor to isolate the collector (transistor body) from chassis ground. Also, a silicone heat transfer compound must be used to thermally couple the transistor and mica insulator to the chassis heat sink. These transistors cost a few dollars each.

The silicon controlled rectifier (SCR) is a safety device whose failure (provided it doesn't fail shorted) won't really affect normal operation of the PS. However, it's good insurance against some other component failure that could result in an over-voltage condition on the output. Fortunately, this device is easily tested with just a multi-meter as described in the references. ■

References:

<http://www.repeater-builder.com/astron/astron-intro-stuff.html>

<http://www.repeater-builder.com/astron/pdf/power-supply-analysis.pdf>

<http://www.repeater-builder.com/astron/astron-intro-parts.html>

<http://www.repeater-builder.com/astron/pdf/understanding-and-using-the-723-vr-hr-89-march.pdf>

<http://www.circuitstoday.com/how-to-test-an-scr> ■



QRO Editor's Note: The Astron RS-35 shown at left (either with or without meters) is frequently found in HF ham shacks to reliably power 100-watt transceivers. This model produces 25 amps continuously and 35 amps on an intermittent basis. But you won't move these often: The RS-35 model shown weigh 27 pounds; the next model up, the RS-50, weighs 46 pounds and is rated at 37 amps continuous, 50 amps intermittent. ■

PVARC Club News

Several more operators needed for RHE Hills Are Alive 10K, August 11

Walt Ordway, K1DFO, needs several additional radio operators for the PVARC's coverage of the Rolling Hills Estates "Hills Are Alive 10K/5K" on Saturday morning, August 11. If available and not already signed up contact Walt at waltordway@juno.com. ■

Embroidered PVARC patches available at July 5 meeting



PVARC club patches will be available at our July 5 meeting for \$4 each. You may sew these onto any cap, jacket, shirt, or fabric bag. ■

Amateur Extra license course in Long Beach during October

It's rare to find classes for the Amateur Extra license. But if you can spare four Saturdays this October and engage in several months of advance self-study there's such a course at the American Red Cross building in Long Beach.

Mark Chung, MD, KK6SMD, will teach this Extra course on Saturdays October 6, 13, 20, and 27 from 8:00 am to 5:00 pm each day. The \$75 fee includes handouts covering all 712 Amateur Extra questions, breakfasts, coffee, snacks, and cost for using the Red Cross facility. Mark KK6SMD is our ARRL Los Angeles Section Asst. Section Manager—Education. To register send your name, address, and check to:

Mark Chung, MD
Box 575
13337 South Street
Cerritos, CA 90703

Questions?
mchung@prodigy.net ■

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
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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:

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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 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 on May 30, 2018, as seen 55 minutes after sunset.

PHOTO: DIANA FEINBERG, AI6DF

PVARC Club News

Something new...

“What’s Next?”— no-stress, no-pressure help for our newer hams

Did you recently obtain your amateur radio license and wonder what to do next? Or you’ve had your license for several years and want to know more about avenues in amateur radio? Come to the PVARC’s “What’s Next?” gatherings at Hesse Park anytime from 6:30-7:20 pm just prior to our regular monthly meetings and ask for help with any question. We’re here to assist in a no-stress manner—and no ham radio-related question is considered “dumb” to ask.

Led by Ray Day, N6HE; Bob Millard, KE6JI; and Ron Wagner, AC6RW, we can help hams better understand how to operate their radios (and/or help purchase the best one for their budget.) We can also provide help on other ham radio subjects, whether for VHF/UHF bands or HF bands; public service or DXing/contesting, or ???

Among the most frequently asked questions by new hams are “Which radio to buy?” and “How do I program my radio?” If you have others we’re glad to help with those too. Look for Ray, Bob and Ron off to one side of our room at Hesse Park while setup is underway for the main meeting. ■

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@arrrl.net. ■

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

Bernadette Sabath, KM6SAB

Zvika Golan, KJ6LHL

Fred Cook, KE6AZB

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

PVARC Club News

PVARC website re-design underway

Later this year look for 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 going forward are to provide 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. ■

In Memoriam

Demetrius Hatzeson, AD6QU (SK)

Sadly we just learned our fellow PVARC member Demetrius Hatzeson, AD6QU, became a Silent Key on June 18, 2018, at age 85. Demetrius lived in Rancho Palos Verdes since the mid-1990's after moving from Santa Monica following the 1994 Northridge Earthquake. Living in an RPV condominium presents antenna challenges but Demetrius was able to make many HF and VHF/UHF contacts from his unit just south of Hesse Park overlooking Santa Monica Bay. He was also a member of Rancho Palos Verdes' PVAN disaster radio group.

Demetrius retired in 1991 after 36 years working as a pharmacy technician at UCLA Medical Center in Westwood and joined both the PVARC and United Amateur Radio Club (K6AA) following moving to the Palos Verdes Peninsula. He frequently attended our Holiday Dinners as well as monthly meetings until health issues prevented his participation. Demetrius is survived by his brother, sister-in-law, two nieces, and two grand-nieces. Funeral services for Demetrius were scheduled on July 2, 2018, in Culver City. We will miss him. ■

PVARC and Local Event Calendar

July 2018

(Any additional events will be in our Weekly Bulletins sent by email)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3 PVARC Weekly Net, 7:30 pm, K6PV repeater & 2-meter X-band	4 4th of July celebrations in many cities	5 PVARC monthly meeting, 7:30 pm, Hesse Park; What's Next, 6:30	6	7
8	9	10 PVARC Weekly Net, 7:30 pm, K6PV repeater & 2-meter X-band	11	12	13	14 HF Enthusiasts Group, 10 am to Noon, PV Library Purcell Room; <i>IARU HF Championship</i>
15 <i>IARU HF Championship</i>	16	17 PVARC Weekly Net, 7:30 pm, K6PV repeater & 2-meter X-band	18	19	20	21 ARES-South meeting, 1-3 pm, College Medical Center, Long Beach
22	23	24 PVARC Weekly Net, 7:30 pm, K6PV repeater & 2-meter X-band	25	26	27	28 W6TRW Swap Meet, 7-11:30 am, Northrop Grumman, N. Redondo
29	30	31 PVARC Weekly Net, 7:30 pm, K6PV repeater & 2-meter X-band				August 4: Day 1, K1DFO ham license classes at Hesse Park: Tech Class, 9:30 am— 1:30 pm

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 (2nd level)

Each course is 2 sessions

The sessions will be on 4 August and 18 August 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 25 August 2018

At the start of the 4 August 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 **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,

\$22 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 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 (\$15.00) \$ _____

Household and/or Family membership (\$20.00) \$ _____

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:** _____