



THE

August 2017

PROPAGATOR

The Monthly Newsletter of the South Orange Amateur Radio Association

IN THIS ISSUE

Tech Fair	1
President's Message	1
Coming Soon	2
VEC Exams	2
SOARA Raffle	2
S. Saturdays	2
Magnetic Loop Antenna	3
Membership	3
Ham Radio Parity Act	3
CF Ride	3
Calendar	4
SOARA Info	5
Ham Radio 101 Power Supp.	A

General Meeting
August 21, 2017
7:00 PM

NP Murray Center
Veterans Way
Mission Viejo

Annual SOARA Tech Fair

We currently have 12 tables for this year's Annual SOARA Fair. It looks like we will be having lots of fun, with great information to be learned. Below are the planned table setups. We hope to see you there!

- Mike, table closest to SS room, (K6MSM), High frequency, JT & FT digital modes, JT9, JT65, FT8, WSJT-X, JTAlex.
- Tak, (W6SI), Magnetic Loop antenna theory of operation / demo. www.w6si.com for more magnetic loop information. Location: outside
- Steve, K6UVR, home brew vertical antenna Location: outside.
- Ed, (WA6ED), SDR demo, QFH antenna for NOAA satellite receive.
- Horst, (KD7JHR), SDR demo.
- Brian, (NJ6N) front & center, Service monitor demo, and measuring radios...
- Hal, (WB6WXO), several assemblies that are the beginning of a 20/80M radio. They were hand made. They include a 5.0 to 5.5 MHz. VFO, a 9Mhz crystal oscillator, and 13.8Vdc and 28Vdc power supplies. He will bring a scope to look at the assemblies.
- Tony, (W6TNY), battery box demo. Various types of portable battery power configurations.
- Charlie, (WA6RUZ), ARES Emergency Coordinator, Mission Viejo RACES Emergency communications.
- Joe (AE6XE) and Don (KE6BXT) will set up a table for AREDN Mesh Networking
- Bill, (K6ACJ), Ham Radio Projects in 3D printed boxes including power packs, Raspberry Pi Touch Screen, VHF Yagi antenna rotator and 3D printed face plate for home brew 2 meter amplifier.
- Knute, K6HIV, 1 table, Go-Boxes and Battery Box demos.

President's Message

Greetings. Hopefully you are reading this prior to the partial, for us, Solar Eclipse 2017. There are a number of exciting things happening during this solar event. Before I remind any of you of these events, I want to emphasize caution. At the risk of insulting your intelligence, I want to remind all that watching eclipses, especially partial ones like we will experience here in So. CA. can be extremely dangerous. Folks have, in prior eclipses, done serious and permanent eye damage especially in areas like ours. We anticipate an approximately 60% eclipse, meaning that there will still be 40% of the direct sunlight visible. Be sure to use NASA approved eclipse glasses, welder's glasses with a darkness rating greater than 12 (rare to find) or best yet through a pinhole device where you project the sun's image onto a sheet of paper or the like. There's lots of info on making a pinhole viewer on the internet. NEVER look directly through the pinhole toward the sun!

One eclipse event is the Solar Eclipse QSO party on Monday the 21, 1400-2200 UTC or, 2100-0500 PDT (PDT is UTC plus 7 hours). The Solar Eclipse QSO Party (SEQP) is a Ham SCI-ARRL sponsored operating event to generate data to study ionospheric changes during the eclipse. FMI, go to hamsci.org.

Ham groups around the country, especially along the path of eclipse totality, will be standing by to handle emergency traffic, in anticipation of the cell services becoming overloaded during the event.

Happy and safe eclipse watching, and see you at the SOARA Fair Monday night!

73 de Ray, AE6H



**CQWW
RTTY**
Sept 23-24

**OC Cycle for
Life**
Oct 7

**CQWW
SSB**
Oct 28-29

**SOARA
Fall Auction**
Nov 20

**CQWW
CW**
Nov 25-26

VEC License Exams

6pm—before
the General
Meeting

Please see our
[website](#) for
more info.

Walk-ins ok.

Extra | General |
Technician

SOARA Raffle

The \$5 prize for August will be a Yaesu FT70DR. “The new [FT-70DR](#) is a compact and very attractively priced YAESU System Fusion transceiver providing both conventional analog FM operation and the advanced C4FM Digital mode.”

We would need to sell about 45 tickets to break even.

I have 3 of the \$1 prizes from HRO and picked up a few prizes from Harbor Freight, including a 64 piece of socket set with 1/4", 3/8", and 1/2" drives. The rackets are both SAE and Metric. I also have an emergency flashlight.

73.....Hal WB6WXO



SOARA Saturday August 26, Antennas

Location: Gilleran Park

Antenna workshop, **I need volunteers to bring, setup, and demo various antennas.** Any band antenna is okay. HOA stealth antennas would be interesting. Open discussion on antenna problems and how they were solved. This is a workshop for discussion for sharing ideas and solutions. It's easy to walk around and ask questions and see things work. So, attend, ask questions, have fun, share your experiences, and knowledge. SOARA will provide [coffee and donuts](#).

Time 9am to noon.

Contact: Ed Barnes, WA6ED@soara.org.

Suggestions are welcome for future Saturdays.

Future SOARA Saturdays (Current Plans):

- Sep 23, Gilleran Park, DSTAR workshop. Brian offered help with DSTAR!
- Oct 21, Gilleran Park, RTL-SDR and SDRPlay software defined radio (SDR) workshop, on Raspberry Pi3 and or PC laptop, Maybe a trunked scanner with two RTLSDRs?
- Nov 25, Murray Center, open for suggestions, Possibly a Bitx 40 HF mostly built kit, hfsigs.com, \$59-\$69 depending on shipping. Or, HF 3-60MHz Antenna Analyzer kit, \$50, by foxdelta.com?





Amateur Radio Parity Act News

Please take action on this important item from ARRL. The site will deliver your messages to your elected officials.

arrl.rallycongress.net/

Membership Report

We now have 226 active members. I suggest all members attend and participate in as many events as possible to gain maximum benefit from your membership. I recently emailed a PDF for the Guide & Manual. If you didn't receive your PDF manual check your spam filter. I also have the older hard copy manuals if you want one. You can print the PDF too. We will likely be revising the guide and manual more often since it is in a more friendly format to distribute.

73, Ed, WA6ED
member-ship@soara.org.

Magnetic Loop Antenna

Announcing the publishing of "magnetic loop antenna for magnetically challenged" paper. You might be interested in this "much talked about but not very well known" antenna. I started some write-ups on magnetic loop antenna on my web site, w6si.com Please follow the yellow link at the top of the page or click on this link.

Right now, only the Introduction and Chapter 2 are up, but will continue over the next several weeks (publishing schedule will be undeclared, irregular). I'm writing this for someone interested on the subject, but don't necessarily want to read the electromagnetic theory book.

Some of you have seen the antenna and/or first party experience in using it. Others might be new to this.

So that when I demo the antenna [at the SOARA Fair], people have better understanding / appreciation of the apparatus.

de W6Si / Tak



CF Cycle for Life

October 7

**Ham Volunteers
Expected to be
Needed**

"Get your wheels in motion and join us for our 7th annual CF Cycle for Life! Get ready for some exciting new changes in 2017 as we switch up our start/finish location and route to create a new and improved CF Cycle for Life ride! This year's ride will start and finish at the Ocean Institute in Dana Point, CA. Join us for this fun ride as we peddle our way through some of the most picturesque and scenic terrain in Southern California."



Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
General Meeting 7:00 PM	23	27	20	17	15	19	17	21	18	16	20	-
Program	SOTA	DXp 3Y0Z 2018	EQ Tom Broz	You and SOARA	Spring Auction	Field Day Prep	Digital Radio	SOARA Fair	TBD	TBD	Fall Auction	-
VE Testing	23	27	20	17	15	At Field Day 24	17	21	18	16	20	--
Educational Classes	21	25	18	15	13	17	15	19	16	14	18	-
SOARA Saturdays (9am)	28	Mar 4	25	22	20 Murray	24 Gilleran	22 Gilleran	26 Gilleran	23 Gilleran	21 Gilleran	25 Murray	-
SOARA T-Hunt	8	5	5	2	7	4	2	13	3	1	5	3
Board Meeting	30	Mar 6	27	24	22	26	24	28	25	23	27	-
Special Events	Quartzfest 22-28	Yuma Hamfest 17-18	Palm Springs Hamfest Feb 4	Visalia Intl DX 21-23	Ohio Hamven- tion 19-21	ARRL Field Day 23-25	HRO Ham Jam 8	SOARA Picnic 6		JOTA 20-22		SOARA Holiday Party 3
Ham-Related Swap Meets	TRW 28 C.A.R.S. 21	25 18	25 18	29 15	27 20	24 17	29 15	26 19	30 16	21 28	25 18	30 16
Major HF Contests		ARRL DX-CW 18-19 CQWPX RTTY 11-12	ARRL DX-SSB 4-5 CQWPX SSB 25-26		CQWPX CW 27-28	ARRL Field Day 24-25			CQWW RTTY 23-24	CQWW SSB 28-29	CQWW CW 25-26	
Volunteer Events	OC Chili Run 21	Paws Fur Pink 26 OC Chili Run 25	OC Chili Run 25 Baker to Vegas 25-26	Desert Storm Rally 7-8	HD Trails 6 OC Mara- thon 7 Memorial Day 1/2 Mara- thon 29	ARRL Field Day/ Setup/ Ops/ Clean 23-25	4th of July Fire -works 4			OC Cycle for Life 7		Run for a Claus 2

*Dates subject to change.

Check the [SOARA website](#) to verify locations and times.

SOARA meets at the [Norman P. Murray Center](#), 24932 Veterans Way, Mission Viejo, CA on the third Monday of every month at 7:00 PM. For the months of January and February the third Monday is a holiday and the meeting is held on the fourth Monday.



License Exams: Amateur License Exams are given prior to SOARA meetings, except June. **Exams are at 6pm.** Prior registration is not required and walk-in applicants are welcome. For June, exams are held at Field Day. For further information, email Sean Reigle, AJ6B, at aj6b@soara.org.

SOARA Library: SOARA has many amateur radio related books such as hand books, books about electrical theory, etc. available to lend out to club members. Contact Heiko Peschel ad6oi@soara.org for more info.

Web Site: SOARA maintains a web site with current club information. The URL is: <http://www.soara.org/>

Repeaters: The Laguna Beach, San Clemente, and Trabuco repeaters are open. The Santiago Peak repeaters are closed. For details or questions on the repeaters contact the repeater director, or repeater@soara.org.

2m	—	147.645	—	(110.9)	Laguna Beach
2m	—	146.025	+	(110.9)	San Clemente
2m	—	145.240	—	(110.9)	Trabuco
D-STAR	2m	—	146.115	+	(K6SOA C) Laguna Beach
	220	—	224.100	—	(110.9) Laguna Beach
	220	—	224.640	—	(pvt) Santiago Peak. (C)
	440	—	445.660	—	(110.9) Laguna Beach
D-STAR	440	—	445.705	—	(K6SOA B) Laguna Beach
	440	—	447.180	—	(pvt) Santiago Peak. (C)
D-STAR	1.2G	1282.600	—	(K6SOA A)	Laguna Beach

Nets:

UHF/VHF (447.180, 147.645 & 224.640): Tuesdays @ 8:00PM

D-STAR (146.115 C module):
Wednesdays @ 7:30PM

40 meter HF (7.200 MHz +/- for QRM), Sundays @ 8:00AM

10 meter HF (28.410 +/-)
Sundays after the 40m net.

Gordo HF (7.250 MHz +/- for QRM), Weekdays @ 8:30AM



SOARA OFFICERS

President: Ray Hutchinson, AE6H 949-322-8468
ae6h@soara.org

V.P.: Sean Reigle, AJ6B 714-261-1717
aj6b@soara.org

Secretary: Lambert Matias, KK6WOW 312-545-2270
kk6wow@soara.org

Treasurer: Lori Carey, NI6X 949-444-8190
ni6x@soara.org

SOARA DIRECTORS

Repeater: Brian Roode, NJ6N 949-257-2749
nj6n@soara.org

Publications: Mike Mahan, K6MSM 949-279-9936
k6msm@soara.org

Membership: Ed Barnes, WA6ED 949-468-7706
wa6ed@soara.org

Education: Steve Kuver, K6UVR 949-874-1972
k6uvr@soara.org

Technical: Tom Hobbs, AE6SH 949-830-8131
ae6sh@soara.org

Communications: Heiko Peschel, AD6OI 949-859-3868
ad6oi@soara.org

SOARA APPOINTMENTS

Past President: Tom Hobbs, AE6SH 949-830-8131
ae6sh@soara.org

Activities: *[Open]—Please contact us (board@soara.org) if you are interested.*

S. Saturdays: Ed Barnes, WA6ED 949-468-7706
wa6ed@soara.org

Raffle: Hal Silverman, WB6WXO 714-897-5002
wb6wxo@soara.org

Testing: Sean Reigle, AJ6B 714-261-1717
aj6b@soara.org

Website: John Zimmer, KM6BEE TBD
km6bee@soara.org

Ambassador: Spencer Ammermon, NG6K [Blog
ng6k@soara.org](mailto:ng6k@soara.org)

Ham Radio 101
HP23 Restoration
By Hal Silverman WB6WXO



Figure 1

Restored Power Supply

One of the parts that are seen in all of the Heathkit HW series is the power supply. These were designated by Heathkit as the HP23 series. Heathkit made a HP23, HP23A, HP23B, and an HP23C.

The picture in Figure 1 is either an HP23B or an HP23C. All of these power supplies had large filter caps. After 50 years of service the capacitors are failing.

The supply in figure 1 has had the circuit breaker removed with a fuse holder and fuse.

The caps in question are 150ufd with a 500Vdc rating.

When I first starting testing the supply, I found that the 250V supply was dead. After troubleshooting the supply, I found an open capacitor.

I was able to get some favorable advice from the Heathkit User Group on Yahoo. They suggested that I replace all of the capacitors in the supply.

There were several ways to go to restore the power supply. I chose to get a kit with a board. The kit comes with all of the parts so that the completion assembly is ready to install in the power supply.



Figure 2

Power Supply Before Restoration

Some of the supplies look pretty rusted. As I mentioned before the caps are about 50 to 60 years old.

Figure 3 is a picture of the power supply restored. All of the parts are new. The caps are what are called snap caps.



Figure 3

Restored Power Supply

You buy a fully assembled assembly, you can buy a kit of all of the parts, or you can buy the blank boards. In any case, they come with instructions.

As you can see the transformer and the choke show signs of age.

The power supply was tested under load using a HW22A as a load.



Figure 4

Restored Power Supply Under Load

The end result that when the cover is installed, the power supply looks like a new supply. The power supply and HW22A was cycled on and off for several days.

The assembly is available from the Heathkit Shop. It is on line and the assembly can be purchased on line with payment from PayPal.

I would like to thank Bill Houghton for his help in giving me the location for the Heath Kit Shop.

If anyone has any questions, please contact me at WB6WXO@SOARA.org