



# Propagator

The Monthly Newsletter of the South Orange County Amateur Radio Association

## In This Issue

**President's Message.....1**

**General Meeting .....2**

**Election Results .....3**

**Membership ....4**

**Adding Five-Band LPF to the U3S.....4**

**Financial Report .....6**

**Nets/Repeaters. ....6**

**Swap Meets are Back!.....8**

**Soara Library. .9**  
**Sale Mail List. .9**

## General Meeting

NPM Center  
April 17, 2023  
7:00 PM  
Norman P. Murray  
Center  
23492 Veterans  
Way, Mission Viejo,  
CA 92692

## President's Message

Greetings To All SOARA Members,

This month we finally had a long awaited event: The aging, leaking, rusty, musty "Conex" storage container where we keep all the Field Day equipment and supplies was replaced by the City of Mission Viejo, with the assistance of several Mission Viejo RACES and some SOARA members. More about that part later.

For those of you who may not know, the storage "Conex" is a former 20' overseas shipping container located at Gilleran Park. We are fortunate to be able to use this container at no cost because of two things: First, the generosity of Mission Viejo ARES /RACES, who also has some equipment in there, while SOARA takes up the lion's share of the space. And Second, in the event of a major emergency event with associated communications outages, SOARA members are tasked with quickly establishing an Emergency Station, to provide not only vhf, uhf relay capabilities to augment the RACES members at the City Hall, Emergency Operations Center (EOC) but to also provide long range, out of area, HF communications.

While the EOC does have HF capabilities, that station may be very busy communicating with CAL OES in Sacramento, and other remote City, County and State agencies, transmitting damage assessment and status reports, ordering supplies and equipment, etc,. Emergency experience has shown that there is a tremendous humanitarian need for local citizens to be able to communicate their plight to others (Health and Welfare traffic).

Remember that 'Out of Area' contact person or persons that the emergency preparedness folks tell us all to have? That out of area contact should be either far away, like Northern CA or even out of state. Having an out of area contact person(s) is only one part of this. There also needs to be a way for folks to make that contact when the traditional communications systems, landline, cellphone, etc are disrupted. Out of area relatives and friends will be frantically trying to get information about their loved ones.

This is where SOARA, The Conex, and Gilleran Park come into play. Remember the several HF Stations, and antennas, as well as vhf/uhf we set up for Field Day? Well in spite of seeming to be a fun contest, Field Day is really training and practice for major communications emergencies. The City, and of course the ARES RACES folks staffing the EOC will know where and when SOARA will be operating, and to direct citizens trying to reach their Our of Area contacts to Gilleran and SOARA.

I want to thank all the SOARA and RACES members (Several do dual service) that turned out, on very short notice, to remove the mountain of equipment and supplies from the old Conex, remove and reinstall both walls of shelving, and then reloaded the stuff into the new Conex. While the City of Mission Viejo park maintenance contract crew did the most strenuous labor, things still had to be triaged, sorted, and repacked. The RACES / SOARA folks also removed and reinstalled the shelving tracks and racks that were mounted on 2X4's and bolted to the walls, no small task. We also had to supervise and assist the reloading of all the antennas, towers, tables and chairs, food service and cooking equipment in a logical manner to help with easier access when needed.

SOARA / MV RACES personnel who worked on this project include Charley Speelman, WA6RUZ, and Dale Tyler, W6EDT, and from the SOARA side we had Charlie Hightower, KC6FZY, Jon Greer, KN6KHN, and me, Ray, AE6H. Thanks to all of you, we have a bright new watertight Conex container that should serve us well for at least another 25 years!

**Thanks again, and 73 DE Ray, AE6H  
SOARA President**

**General Membership Meeting**  
**Monday, April 17 @ 7:00 pm.**  
**Norman P. Murray Center**

Reminder that we are having our Membership Meeting at the Murray Center at 7pm in the Palo Verde Room.

I don't have a guest speaker lined up, but I have a subject in which I'm asking for your participation in. I know this is short notice, but this should be a grab and go for any of you that have made one of these.....a **DIY Battery Box**.

I have built one of these a long time back when Tony first presented this and we haven't really gone back to this. I have a bit of a selfish reason for coming up with this (and I literally just came up with the idea this morning). I recently purchased a new Bioenno Lithium Iron Phosphate battery to be used in the field. Now I'm looking at ideas for a new battery box with the appropriate bells and whistles to go with it. I will have short video or two from some Hams that have built some very cool ones.

This is a great Show and Tell opportunity for those of you who have built you own Battery Boxes and an opportunity for those who haven't to see how it's done. Maybe some new Hams have not even heard of doing this.

**SO.....PLEASE BRING YOUR BATTERY BOXES TO SHOW. THE SIMPLE TO THE MORE COMPLEX ONES. WE WANT TO SEE THEM.**

**Erik Wresch - W6INE**

**Vice President of the South Orange Amateur Radio Association**

**Note:** Ham Radio Examinations will take place prior to the General Meeting and also at the Murray Center. Testing session starts at 6pm and is \$15/session.

Pre-registration is not required and you don't need to be a SOARA member to take the test. Please contact our Education Director, Steve Kuver, if you have questions about testing at [k6uvr@soara.org](mailto:k6uvr@soara.org)

## [Election Results](#)

### **SOARA Elections - 119 / 203 ( 58 %) votes cast**

Candidate Name	Call Sign	Votes
Repeater Director		
Brian Roode (Incumbent)	NJ6N	119
---- Abstain ----		0
Publications Director		
Ray Frericks (New Nominee)	K6NOV	119
---- Abstain ----		0
Education Director		
Steve Kuver (Incumbent)	K6UVR	118
---- Abstain ----		1
Technical Director		
Tom Hobbs (Incumbent)	AE6SH	118
---- Abstain ----		1
Communications Director		
Dale Tyler (Appointed Incumbent)	W6EDT	118
---- Abstain----		1
Membership Director		
Greg De Hoogh (Appointed Incumbent)	N6PM	119
---- Abstain----		0

## [SOARA Membership Report](#)

We're currently at 205 paid members. That reflects a drop since last month since those who hadn't paid yet have had their memberships deactivated.

We're please to welcome two new members:

Warren Belkin, W6WDB

Debby Hutchinson, KN6YRA

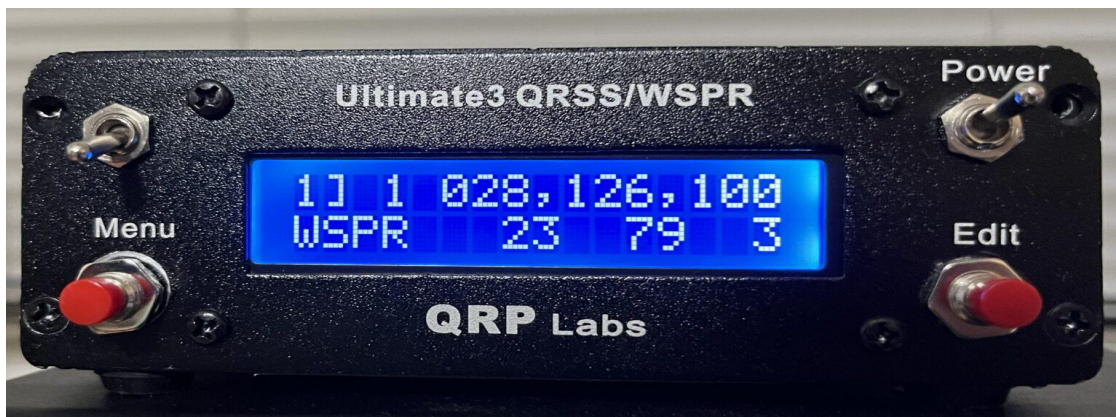
If you need a new badge or a copy of the repeater manual, send me an email at [membership@soara.org](mailto:membership@soara.org).

**73,**

**Greg, N6PM**

**SOARA Membership Director**

## [Adding Five-Band LPF to the U3S](#)



Some time ago I build the Ultimate 3S QRSS/WSPR transmitter from QRP Labs. It came with one low pass filter. I chose the 10meter LPF because I was originally thinking of using the beacon transmitter for the SOARA K6LLL 10 meter CW beacon and the U3S is a great fit for that job. Once I decided to use the transmitter as a WSPR beacon, I needed more bands!

Automatically sending out WSPR beacons on different bands requires the Ultimate relay-switched LPF kit. In order to automatically set location, date/time and calibrate the output frequency precisely, I also purchased the QLG2 GPS Receiver Kit.

The GPS kits' SMD parts were already soldered down to the board so all that was really necessary for this kit was to solder on the SMA connector and mount the board into the



U3S chassis. There are four signals that interface it to the U3S main board. There is no predefined mounting location for the GPS, so I mounted it on standoffs with the SMA antenna connector protruding through a hole that I made in the back cover. It's a tight fit with the 5V buck converter I had installed previously.

Building the low pass filters requires winding three toroids for each filter and installing matching capacitors for the band you're building them for. For each board, I installed the capacitors, wound the three toroids and installed them into the LPF boards, and then installed the connectors. I tested each LPF board using my Rigol spectrum analyzer.

Building the LPF carrier board consisted of installing 5 relays, 5 diodes, connectors that mate with each LPF board and the connectors that attach the Relay switch LPF board to the main U3S board. On the revision 5 board, there were also quite a few jumpers that needed to be installed. It is very important that you follow the correct instructions for the version of board you're building with all of the QPR Labs kits.



**Low Pass Filter Kit**

**Introduction**

This filter kit is required following the output of a transmitter to attenuate harmonics and unwanted frequencies. The Low Pass Filter kit is based on the original design as shown by QPR.

capacitors and three inductors wound on micrometals toroids and has 50-ohm input. The small PCB has a 4-pin plug at its input and output. It is designed to fit onto the QRSS/WSPR transmitter kit, but may of course be used as a LPF for other QRP kits.

with high-quality toroids (NPO, low core loss, low temperature drift).

for your toroids, please refer to the instructions on how to wind on toroids.

C3	C4	L1	L2	L3	Toroid
2200	820	30	34	30	T50-2 (red)
1200	470	25	27	25	T37-2 (red)
1200	680	23	24	23	T37-2 (red)
680	270	21	24	21	T37-6 (yellow)

Output power varies by band with 40 meter having the highest output power of about 400mW and 10 meters having the lowest output power of about 100mW.

Once completed, I was able to get everything integrated and working. After configuring a "mode" setting for each band, I set it on its way beaconing. The GPS was able to get a location fix quickly even with the antenna inside the house. Having a GPS means I no longer have to configure time precisely or adjust the reference frequency of the 27MHz oscillator crystal on the Si5351A module manually.

Initially I wasn't being heard by anyone. I quickly figured out that I had adjust the frequencies I was using to be between the lower and upper band pass frequencies for each band. After that, I was being heard on milliwatts!

**Brian, NJ6N**

## SOARA - Statement of Cash Income & Expenses October 1, 2022 - March 31, 2023

Six Months Ended:	March 31, 2023	March 31, 2022	Increase (Decrease)
Cash Income:			
Memberships	9,609	7,408	2,201
Other	3,283	1,539	1,744
Total Cash Income	<u>12,892</u>	<u>8,947</u>	<u>3,945</u>
Cash Expenses:			
Repeaters including site rental, utilities & insurance	11,038	3,797	7,241
Member Activities	2,992	2,174	818
Other expenses	858	1,085	(226)
Total Cash Expenses	<u>14,888</u>	<u>7,056</u>	<u>7,832</u>
Cash Net Income	(1,996)	1,891	(3,887)
Beginning Cash-October 1	25,860	27,741	(1,881)
Ending Cash - March 31	23,864	29,632	(5,769)

Note: If any member has questions about the financials, please contact the Treasurer or any Board member.

**Ron Mosher - K0PGE**  
**SOARA Treasurer**

### SOARA Nets and Repeaters

As many of you already know, SOARA has nets two nights a week and both Saturday and Sunday. There are also many other nets on our repeaters as well.

We have about seven or eight different net controls for over two dozen available positions every month, depending on whether the month has four or five turns available.

We are always looking for more Net Control operators so please apply if you want to join our select group.

In general our nets are friendly and easy going but there are some rules that we should follow, not many thank goodness.

- The FCC requires you to identify with you call sign within ten minutes of getting on the air and every ten minutes thereafter including when you finish the conversation.

- We (SOARA) as well as almost all organizations with repeaters ask you to identify yourself with your FCC issued I.D. when you first get on the air and then follow the FCC guidelines, including when signing off.
- Other than that we try to avoid controversial subjects that might displease or anger others.

Now to the fun part.

- First of all, all SOARA nets are directed nets and the Net Control is in charge.
- In a conversation with a friend recently we came up with some thoughts and ideas on how to run an amateur radio net and also how to respond to it.
- As Net Control you should try to let your guests do the talking. Guests please feel free to express yourselves.
- Prime them with a good general topic that they can expound on. Guests, if you have topical suggestions for the Net please address the Net Control operator with your thoughts.
- Net Controls, prepare yourself with some good leading questions ahead of time to ask when you need to get a response.
- If it is a small group let them do a round robin, being sure to remind them who is before and who follows. This will make it easier for you.
- Round robin is from Net Control to the first operator A, then to operator B, then to operator C, and so on until everyone has had a chance to express themselves.
- If one operator has a question for another operator, let the operators go directly one to another as necessary, this will save you time and effort.
- In general make sure that they are enjoying themselves.
- Never put anyone in a position where they might feel uncomfortable.
- As a special note for my Emergency Communications friends, this is for our casual SOARA nets, Emcom lives by a different set of rules.

Nota bene: been there and done that.

**Heiko AD6OI**

## [Swap Meets and Auctions are Back](#)

One of the most fun I have as an electronics enthusiast and amateur radio operator is attending electronic swap meets and auctions. They are great places to pick up some cables, used ham gear, test equipment and much more.

The Yuma Hamfest and Swap meet was held February 18-19 in Yuma, AZ. There were a number of good presentations and a swap meet. As usual, I found some bargains, including 2 BK8514 1200W Programmable DC loads (need repair) for \$40, a Bird 79-2 coax switch (DPDT - rare) and a big variable capacitor and tapped inductor. Plus assorted coax connectors and switches. They also had new equipment for sale in the Exhibit Hall. \$10 for all weekend - a great deal. I highly recommend attending next year.

We have two local swap meets that are up and running monthly.

The TRW Swap meet is held on the last Saturday of each month. The swap meet hours are 7:00 AM to 11:30 AM., located on the southeast corner of Aviation Blvd. and Space Park Drive (one traffic signal south of Marine Ave.) in Hawthorne, CA. More information can be had at [W6TRW Swap Meet](#) The next one will be on April 30, which does not conflict with SOARA Saturday, then May 28 and June 25. They even happen on Christmas - attendees are pretty dedicated. SOARA has a booth where excess club equipment is being sold by Heiko, AD6OI. There were about 30 vendor booths in February. My find last month was a 3 pack of 433 MHz remote controlled outlets for \$20.

The Claremont Amateur Radio Society (CARS) Radio/Electronics Swap meet is held on the third Saturday of each month, except December. 6:00am to 11:00am, at the parking lot of Granite Creek Community Church 1580 N Claremont Blvd, Claremont, CA 91711. There are usually 10 or so vendors selling radios, components and other items. I picked up a AR-22 antenna rotor and control box rebuilt and tested for \$40. The next swap meet is May 21, which unfortunately conflicts with SOARA Saturday.

There was also a used equipment sale at Silicon Salvage in Anaheim. They had a really diverse selection of RF gear, test equipment and assorted stuff. This is a great surplus sale and it is definitely worth going to when they have them.

There is also the former ACP Swap Meet, used to be held on the 4<sup>th</sup> Sunday of each month at Edinger and Grand in Santa Ana. This event has mostly faded away and there were no vendors the last two months, but I mention it just in case it re-appears.

Remember, one person's "junk" is another person's "treasure".

**Dale - W6EDT**



## [SOARA Library](#)

As some of you have already heard the AD6OI/SOARA Library is now up and running at our house. (Please see attached picture for details). This library contains ARRL Handbooks, Repeater location guides, Tech modification books, radio and electrical books and a wealth of radio related information. For now the library will be open from 1pm to 4pm on Saturdays, and other times by appointment, if you call first, either by radio or telephone. E-mail will also work but allow at least 24 hours for a reply.

**Thank you  
Heiko AD6OI**

## [SOARA Equipment For Sale Online Site](#)

Based on numerous requests from SOARA members for a place to post Ham Radio related items for sale to other club members, we have set up an opt-in based Mailman mailing list on our server. Interested SOARA members are invited to join the mailing list. The SOARA organization and Board of Directors do not provide any warranty or guarantee for the items being advertised, buyer beware!

To subscribe, navigate to:

<https://soara.org/mailman/listinfo/forsale>

Enter your "real" email address, not your at "soara dot org" alias. You must be able to send and receive email from the address you provide.

Once subscribed, you will receive email when other members post items for sale. When posting to the list, you should provide an accurate description of the item for sale, its condition, and asking price. Replies to postings should be sent to the poster of the item, and not the list.

The archives of postings are publicly available on the web here:

<https://soara.org/pipermail/forsale/>

This mailing list may be suspended or discontinued at the discretion of the SOARA Board of Directors should that become necessary.

**Brian, NJ6N**

# 2023 SOARA Calendar

Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
General Meeting 7:00 PM	30 Online	27	20	17	15	19	17	21	18	16	20	-
Program		-	-	-		Field Day Prep	-	-	-	-		-
FCC Ham Exam 6:00 PM		-	-	-	-	-	-	-	-	-	-	-
Education Classes 8:00 AM			-	-	-	-						-
SOARA Elmer Saturday 9:00 AM	28 WFD Gilleran	Mar 4 Murray Center	18 Murray Center	22 Murray Center	20 Gilleran Park	24 FD Gilleran	22 Gilleran Park	26 Gilleran Park	23 Murray Center	21 Murray Center	25 Murray Center	16 Murray Center
SOARA T-Hunt 1:00 pm	<a href="#">updates</a>	<a href="#">updates</a>	<a href="#">Updates</a>	<a href="#">Updates</a>	<a href="#">Updates</a>	<a href="#">Updates</a>	<a href="#">Updates</a>	<a href="#">Updates</a>	<a href="#">Updates</a>	<a href="#">Updates</a>	<a href="#">Updates</a>	<a href="#">updates</a>
Board Meeting	Feb 6	Mar 6	27	24	22	FD	24	28	25	23	27	-
Special Events	<a href="#">Quartz-fest 17-23</a>	<a href="#">Palm Springs</a>		<a href="#">Visalia DX</a>	<a href="#">Dayton Ham-vention</a>	SOARA Auction 10			<a href="#">SOARA Picnic TBD</a>	<a href="#">JOTA 16-18</a>	SOARA Auction TBD	<a href="#">SOARA Holiday Party TBD</a>
Major HF Contests		<a href="#">ARRL DX-CW 20-21</a>	<a href="#">ARRL DX-SSB 6-7</a> <a href="#">CQWPX SSB 27-28</a>		<a href="#">CQWPX CW 29-30</a>	<a href="#">ARRL Field Day 23-25</a>			<a href="#">CQWW RTTY</a>	<a href="#">CQWW SSB</a>	<a href="#">CQWW SSB</a>	
Volunteer Events	OC Chili Run	Paws Fur Pink OC Chili Run	OC Chili Run Baker to Vegas	Dessert Storm Rally Ride for Rwanda	HD Trails LH Marathon	ARRL Field Day 23-25	MV Fire-works 4				Vision Quest OC Marathon	

Dates subject to Change - Check the SOARA Web Site (<http://www.soara.org>) to verify locations and times or click on the live links in the table

# SOARA Information

**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](mailto: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](mailto: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](mailto: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:

- 40 meter HF (7.200 MHz +/- , Sundays @ 8 AM
- 10 meter HF (Technicians Welcome) (28.415 +/-) Sundays @ 9 AM
- General Membership Net - UHF/VHF (447.180, 147.645 & 224.640): Tuesdays @ 8 PM
- Astronomy - VHF 147.645: Wednesdays @ 7 PM
- D-STAR (146.115 C module): Wednesdays @ 8 PM
- Dinner Net - 147.645, 224.640, 447.180: Fridays at 7 PM
- Tech Net - 147.645, 224.640, 447.180: Saturdays @ 9 AM
- California Rescue Communications (Gordo Net) HF (7.250 MHz +/- for QRM): Weekdays @ 8:30AM
- MVRACES - 447.180: Tuesdays @ 7PM
- Tri-Cities RACES - 146.025: Wednesdays @ 8 PM
- LNACS - 147.645: Thursdays @ 7 PM
- OC Parks Fire Watch - 447.180: Thursdays @ 8 PM

## SOARA OFFICERS

**President:** Ray Hutchinson, AE6H 949-322-8468  
[ae6h@soara.org](mailto:ae6h@soara.org)

**V.P.:** Erik Wresch, W6INE 714-883-7694  
[w6ine@soara.org](mailto:w6ine@soara.org)

**Secretary:** Charles Schultz, NY6I [ny6i@soara.org](mailto:ny6i@soara.org)

**Treasurer:** Ron Mosher, K0PGE 949-363-0047  
[k0pge@soara.org](mailto:k0pge@soara.org)

## SOARA DIRECTORS

**Repeater:** Brian Roode, NJ6N 949-257-2749  
[nj6n@soara.org](mailto:nj6n@soara.org)

**Publications:** Ray Frericks, K6NOV 949-682-9106  
[k6nov@soara.org](mailto:k6nov@soara.org)

**Membership:** Greg De Hoogh 949-362-5529  
[n6pm@soara.org](mailto:n6pm@soara.org)

**Education:** Steve Kuver, K6UVR 949-874-1972  
[k6uvr@soara.org](mailto:k6uvr@soara.org)

**Technical:** Tom Hobbs, AE6SH 949-887-6527  
[ae6sh@soara.org](mailto:ae6sh@soara.org)

**Communications:** Dale Tyler, W6EDT 949-360-1717  
[w6edt@soara.org](mailto:w6edt@soara.org)

## SOARA APPOINTMENTS

**Past President:** Tom Hobbs, AE6SH 949-830-8131  
[ae6sh@soara.org](mailto:ae6sh@soara.org)

**Activities Coordinator:** Joe Perrigoue, K7KCE [k7kce@soara.org](mailto:k7kce@soara.org)

**S. Saturdays:** Ed Barnes, WA6ED 949-468-7706  
[wa6ed@soara.org](mailto:wa6ed@soara.org)

**Raffle:** Bill Colvin KM6FOY [km6foy@soara.org](mailto:km6foy@soara.org)

**Testing:** Steve Kuver K6UVR [k6uvr@soara.org](mailto:k6uvr@soara.org)

**Website:** George Robinson KN6OFF [kn6off@soara.org](mailto:kn6off@soara.org)

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