



# Propagator

The Monthly Newsletter of the South Orange County Amateur Radio Association

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## General Meeting

NPM Center  
 November 21,  
 2022 6:30 PM  
 Norman P. Murray  
 Center  
 23492 Veterans  
 Way, Mission Viejo,  
 CA 92692

### General Membership Meeting Monday, November 21st @ 7:00 pm. Norman P. Murray Center

Please join us at the Norman P. Murray Center for our last Membership Meeting of the year.

We do not have a guest speaker this month and for the record, guest speakers are getting a little difficult to obtain lately.

HOWEVER!!, we do have topics of discussion to be had over snacks and coffee (decaffeinated, of course). There will be some discussion on Winter Field Day, High Altitude Balloon launch in December, and Kriss KR6ISS with have information on dealing with his evil (my words, not his) HOA in regards to HAM radio and I think you may want to hear this.

The rest of the time can be an open canvas of discussion which will easily take us to 9pm. We had this format before and it actually was very pleasant. We encourage you to attend this last meeting of the year, UNLESS...you plan on attending the Holiday Party on December 16th at 6pm.

If you have not purchased your tickets to the Holiday Party, we encourage you to do so soon. There is an accommodation for those that have to write a check, but you need to plan on having that check delivered to the SOARA P.O. Box by December 12th so we can make a final count to the caterer.

We are heading in to the Holiday season beginning this week with Thanksgiving. I encourage you to reflect on what you are thankful for this week and possibly...give thanks to someone in your life that has made a difference.

May this time of year bring reflection on the joy you have had in life with family and friends and a determination to carry that forward into the New Year.

Sincerely,

**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)

### **[SOARA Elmer Saturday, 11/26/22, Murray Center](#)**

I updated the SOARA Saturday page on [www.soara.org](http://www.soara.org). Go there and see the schedule. The next SOARA Saturday will be at the Murray Center, October 22, 9am to noon, coffee and donuts will be provided. We will be talking about ESP32 and Arduino projectsstuff. Bring your ideas and questions! Or, just chat about radio.

Here's the SES link: <https://www.soara.org/activities/soara-saturdays/>

The SOARA Saturday tech net log is under the above link too

**73,**  
**Ed, WA6ED**

### **[SOARA Membership Report](#)**

Welcome to our newest members!  
Jack McCoy, KN6VPX  
Cortland Strong, N6LBC

We're currently at 227 active members. Thanks to the 126 of you who've paid your dues for 2022-23! I hope the rest of you will be staying with us and paying your dues in the not-too-distant future. For those of you who owe less than the full yearly dues amount because you've currently got a credit, and you wish to pay online, it may not be immediately apparent how you pay less than the full \$50 (or \$25). When you go to the SOARA website and select Membership->Pay Dues Online from the main menu, you're taken to the SOARA - Payment System page. On that page, instead of selecting Renew Membership, which only allows payments of \$50 or \$25, select Other Payment Amount. On that page, you can enter the desired payment amount. Note, however, that Braintree does not accept payments of less than \$5. If you owe less than \$5, you can either pay by check instead or pay \$5 online, and the extra amount will be carried in your account until next year. (Our apologies for the inconvenience!)

**Contacting Soara:** Questions about SOARA? Postal mail: P.O. Box 2545, Mission Viejo, CA 92690  
Send e-mail to [membership@soara.org](mailto:membership@soara.org) or leave a message at 949-667-0173  
Facebook: K6SOA Twitter: @K6SOA

If you need a new badge or a copy of the SOARA Repeater User's Guide & Membership Manual, send me an email at [membership@soara.org](mailto:membership@soara.org).

**73,  
Greg, N6PM  
SOARA Membership Director**

### **SOARA Statement of Income and Expenses October 1, 2022 - October 31, 2022**

One Month Ended:	October 31 2022	October 31 2021	Increase (Decrease)
Cash Income:			
Memberships	5,013	3,950	1,063
Other	1,445	5	1,440
<b>Total Cash Income</b>	<b>6,458</b>	<b>3,955</b>	<b>2,503</b>
Cash Expenses:			
Repeaters including site rental, utilities & insurance	473	492	(19)
Member Activities	632	249	383
Other expenses	547	555	(8)
<b>Total Cash Expenses</b>	<b>1,653</b>	<b>1,297</b>	<b>356</b>
Cash Net Income	4,805	2,658	2,147
Beginning Cash - October 1	25,860	25,697	163
<b>Ending Cash - September 30</b>	<b>30,665</b>	<b>28,355</b>	<b>2,310</b>

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

**Ron Mosher - KOPGE  
SOARA Treasurer**

### **CW Update - Practice Makes Perfect**

This is an update to an article I wrote for the July 2022 Propagator about my experiences learning Morse code, and persistence is paying-off, albeit gradually. This may be useful to you if you are considering learning Morse code, or picking it up again after a long respite.

Using the web site "Learn CW Online" (LCWO.net), I've managed to do about two short practice sessions per day, totaling 10 minutes or so. The results are evident as measured by my crude way of tracking progress, the "Morse Capability Score", as shown in Figure 1. The plot shows 3501 1-minute practice sessions. Up until a week or so ago, I had been copying at 15 words per minute (character speed 22 WPM) and have often reached 90% accuracy at that speed. The character pool remained at 41, which includes the alphabet, numbers 0-9, and a few punctuation marks. Back in July, I'd been

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concerned that I may have permanently plateaued, but it seems I am improving again with enough regular practice.

On 10/31/22 I increased the speed at which LCWO sends to 17 WPM. My accuracy dropped as expected. But since the higher speed offset the drop in accuracy, it was essentially a “wash” in the Morse Capability Score. So it seems 2 WPM was a reasonable increment to raise the bar. I’ve seen accuracy already improve with only a few days practice since increasing the sending speed.

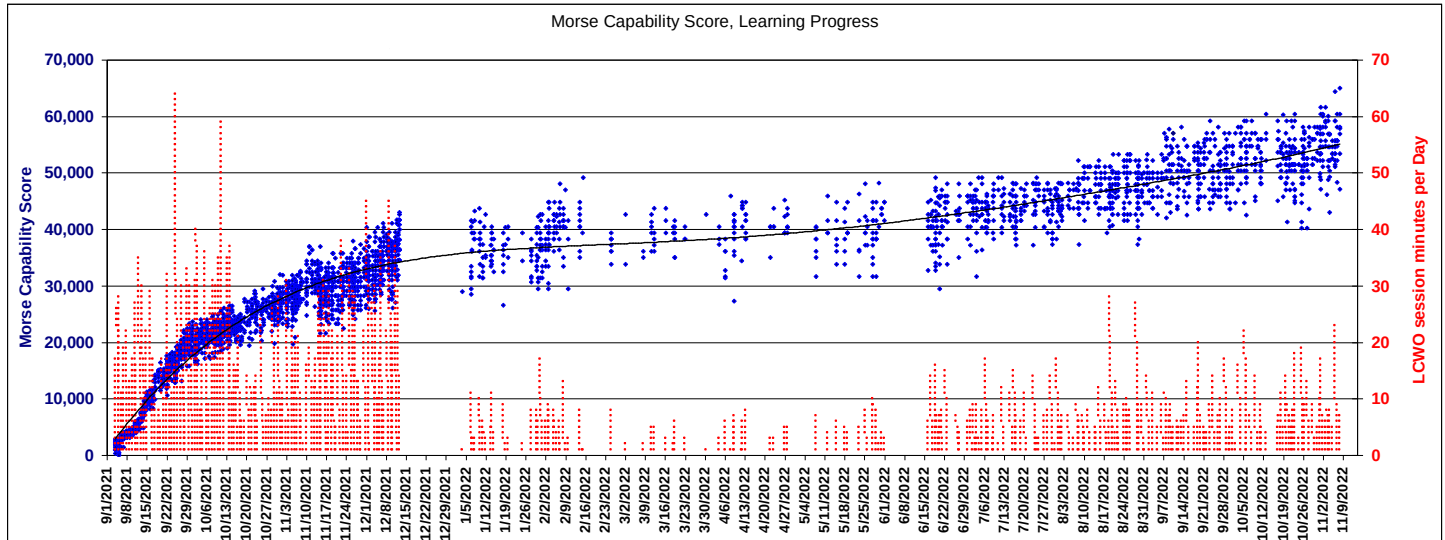


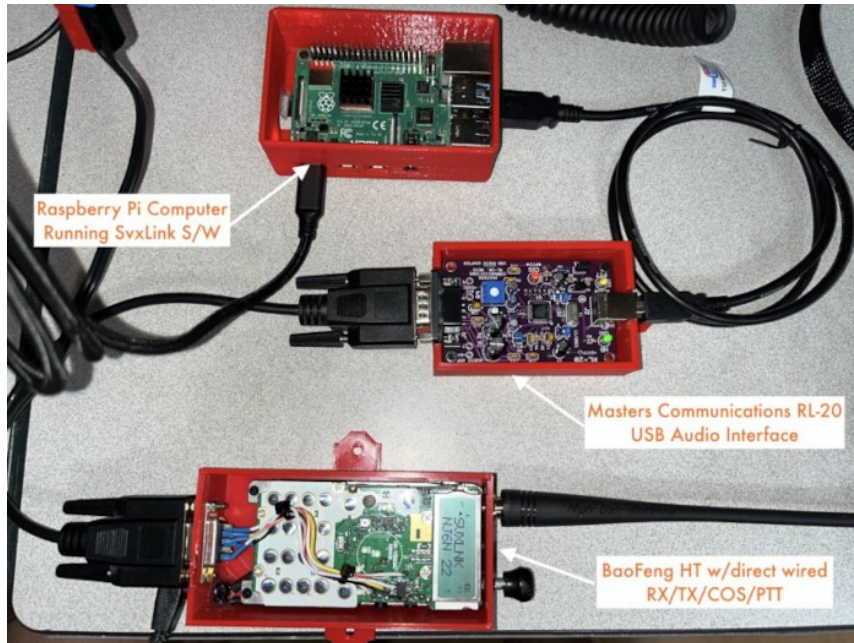
Figure 1 Progress in Morse code training from start to 13 months

I’ve probably converted a few more characters to “instant sound recognition” from ones that I used to have to think about, but I think less than half of the 41 characters are in that category. I’ve also noticed an interesting phenomenon lately as I’m copying. Without consciously trying, my brain started to store the last decoded character or two in memory while I look for the key on the keyboard, and decode the next one. I can usually “catch up” by typing fast, especially when a following character takes longer to send, like one of the numbers (which contain 5 elements).

It’s already clear that my lack of typing skill is a drag on the speed of the whole process, and writing on paper is slower yet. I hope I can start “head copying”, which may rely on that process of remembering letters (or words) while actively de-coding the present data stream. Kurt Zoglmann’s YouTube channel has some helpful advice and practice sessions using the most common 200 words. The LCWO page also will send words or call signs for you to practice. Having real words in the stream is helpful, since you can anticipate the next letter when a word starts to take shape by itself, or in the context of a sentence, requiring yet another parallel mental process that thankfully seems to come rather naturally. Trying to learn CW has resulted in some unexpected and interesting revelations about how our minds work, and adapt to new challenges, which has been part of the fun.

**73,  
Steve KN6HI**

## Inexpensive SvxBLink Node



I wanted to build the most inexpensive SvxBLink “node” or “station” I could using off-the-shelf parts. I bought an inexpensive BaoFeng “S9Plus” (it says “UV-S9X3” on the side) radio on Amazon for \$28. For the computer system, I used a Raspberry Pi 4 that I already had, however, I also found a Raspberry Pi B+ board on Digi-Key for \$25. For the interface between the HT and RPi, I bought a Masters Communication RL-20 board for \$25 as an unassembled kit. All prices exclude sales tax and shipping charges (free shipping from Amazon). So for about \$78 + tax + shipping, you can have your own SvxBLink Node!

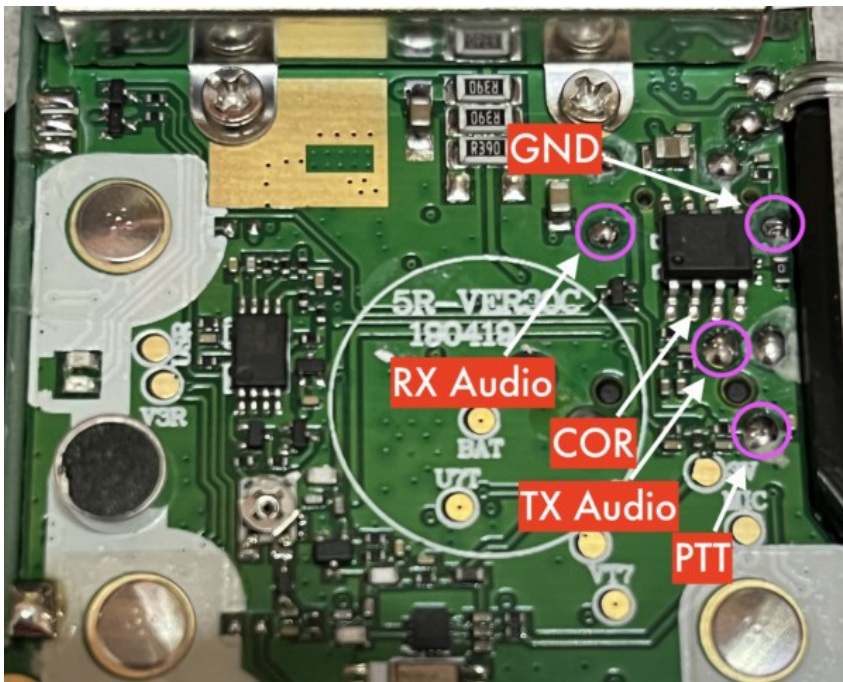
Why would you want one? Well, if you like to use EchoLink to talk to folks all over the world from your HT or want to monitor the repeater where you used to live, this might allow you to do that. You could also set up an “intercom” with friends and family using the SVX reflector software that’s included as part of the SvxBLink build. An SvxBLink node provides an internet connected radio node that you can use with an HT or mobile radio and ultra low power.

I disassembled the “UV-S9X3” to find that it was actually the same as a “UV-5R” but with the addition of the 220 band. I had previously purchased an identical looking “UV-9S” radio. Testing of that radio revealed that there was no filtering added for this band, so transmitting on 220 also means you’re putting out a pretty decent signal at the 2nd harmonic on the 440 band as well. Best not to use the 220 band, or at least not with any decent antenna! I plan to use this on the UHF band where SCRRBA has allocated frequencies to use with EchoLink (E.g. 440.000 MHz & 445.000 MHz)

The first thing I tackled was how to obtain a “COR” or Carrier Operated Relay (or for “COS”, “switch”). Naturally someone had already figured this out. I found the TDA2822

Dual Low Voltage Amplifier chip and verified there was a switched voltage (V-supply to the amplifier chip) on pin #2 which corresponded to the presence of a signal with qualifying PL.

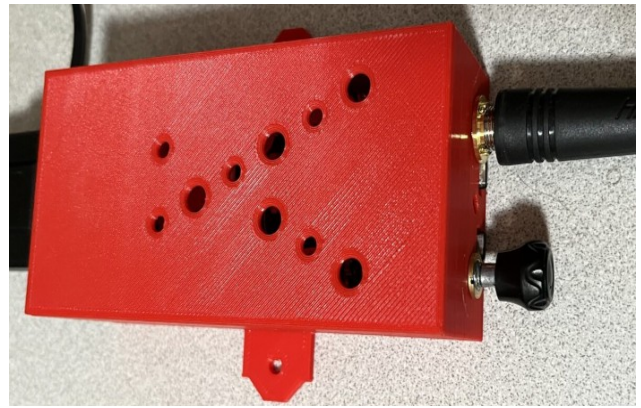
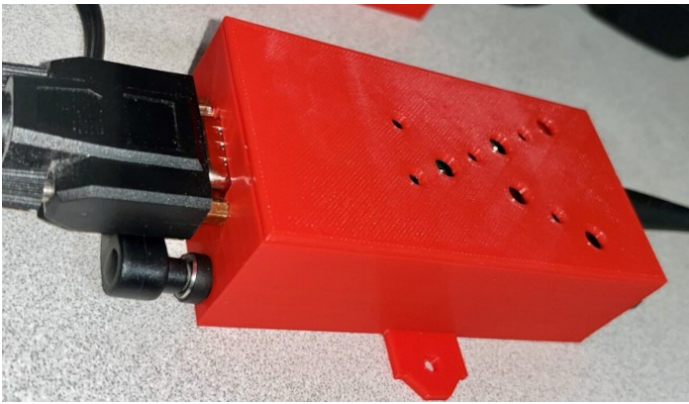
I lazily buzzed out the TX & RX Audio along with PTT from the 2.5mm & 3.5mm Speaker/Mic jacks instead of digging deeper to find discriminator audio and a maybe a better place to inject transmit audio. This means the receive audio is “deemphasized” or “cooked” with the level being adjusted by the volume pot. Transmit audio will be Pre-emphasized. SvxLink can handle that just fine.



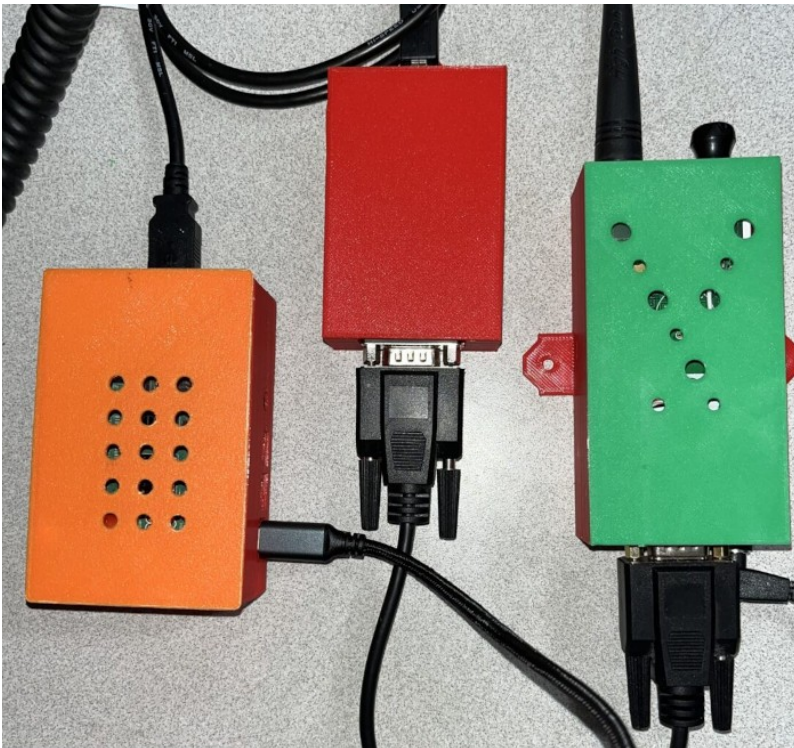
Initial testing was promising. The audio sounded decent using SvxLink Parrot to test.

I should note that the RL-20 board is designed for “Radioless” applications where you’re using a speaker and microphone instead of attaching it to a radio. Using an RA-35 or RA-42 board would give you more hardware audio level adjustability. I believe the RA-35 kit is \$35.

I decided to design a case for the hacked BaoFeng HT. To speed up printing, I used only 2mm thick walls which turned out okay. The press-on lid did not fit snugly so I redesigned that to have a rubber band o-ring slot to give it more friction. I included some ventilation holes as well.



The DB9 connector is wired using the Masters Communication RA-35/RL-20 standard. This is also compatible with the Repeater Builder STM32-DVM digital MMDVM board.



The completed setup.

I'm working on a more efficient and manageable way to interconnect everything. Perhaps designing a single case for all three major components would be better? A Raspberry Pi Zero W (or Zero 2W) would work for this just as well and it is much smaller.

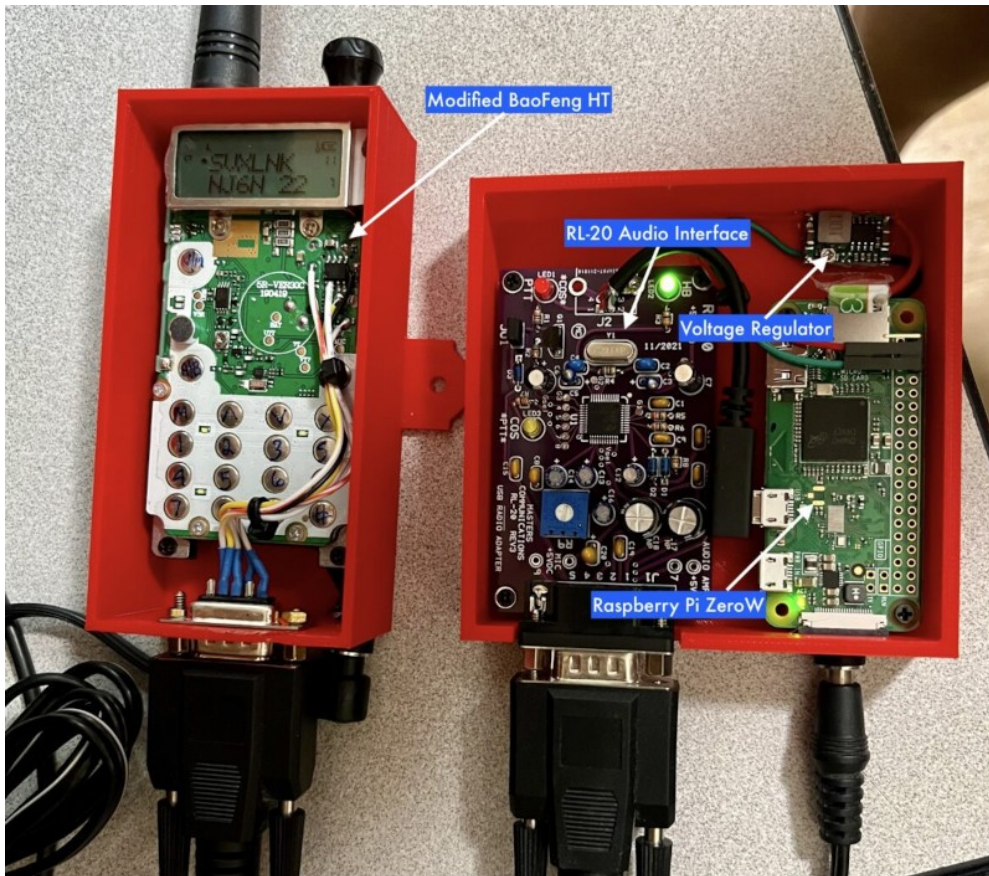
The HT is powered by 7.2-9Volts DC. I used a buck converter / switching DC regulator to step down 13.8 VDC to 7.3VDC. Instead of installing this in the case with the radio, I designed a small case for the regulator. Powerpoles provide the input and output connections.

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After my initial design was done, I decided that there were too many separate components. So, I set out to consolidate the computer and audio interface board into one assembly. To do this, I used a smaller Raspberry Pi Zero W single board computer. It's much smaller than the Pi3 & Pi4 boards and has sufficient memory and CPU performance for the job. Instead of using the large "USB B" connector, I soldered a right-angle USB micro pigtail onto the RL-20 board directly.

So that I could run the combined system on conventional "shack" supply, 13.8V, I included a small buck converter/switching regulator board. Instead of trying to fit another USB Micro connector into the cramped chassis, I connected the voltage regulator directly to the 5V bus on the Raspberry Pi's GPIO connector.



The new RL20+RPi configuration can be used with higher power transceivers such as the Motorola CDM-750.

**Brian NJ6N** (Editor Note: More Projects at <https://blog.nj6n.com/>)

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## **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 Director of Communications for SOARA**

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## [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**  
**Director of Communications for SOARA**

## [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**

# 2022 SOARA Calendar

Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
General Meeting 7:00 PM	24 Online	28	21	18	16	20	18	15	19	17	21	-
Program	Vehicle Repeater	-	-	-	Spring Auction	Field Day Prep	-	-	-	-	-	-
FCC Ham Exam 6:00 PM		-	-	-	-	-	-	-	-	-	-	-
Education Classes 8:00 AM			13	17	15	-	17	14	18	16	13	-
SOARA Elmer Saturday 9:00 AM	29 WFD Gilleran	Mar 5	26 Murray Center	23 Murray Center	28 Gilleran Park	25 FD Gilleran	23 Gilleran Park	20 Gilleran Park	24 Murray Center	22 Murray Center	26 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	31	Mar 7	28	25	23	FD	25	22	26	24	28	-
Special Events	<a href="#">Quartz-fest 17-23</a>	<a href="#">Palm Springs Yuma</a>		<a href="#">Visalia DX Canceled</a>	<a href="#">Dayton Ham-vention</a>	<a href="#">ARRL Field Day 25-27</a>			<a href="#">SOARA Picnic 24</a>	<a href="#">JOTA 16-18</a>	<a href="#">SOARA Auction 12</a>	<a href="#">SOARA Holiday Party 16</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 25-27</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 25-27	MV Fire-works 4				Vision Quest OC Marathon 7	

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

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# 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**

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

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

## **SOARA DIRECTORS**

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