



The

December 2021

# Propagator

The Monthly Newsletter of the South Orange County Amateur Radio Association

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## General Meeting

January 24,  
2022 7:00 PM  
Norman P. Murray  
Center  
23492 Veterans  
Way, Mission Viejo,  
CA 92692

## Presidents Message - December 2021

Season's greetings from SOARA and your Board of Directors. We sincerely hope that the season finds you well, and your holidays are happy ones.

For our final event of 2021, SOARA held our annual Holiday Party on Friday, December 10 at the Claim Jumper Restaurant on Santa Margarita Parkway, in Mission Viejo. We had approximately 48 members and guests in attendance. We had a fairly wide range of menu choices, desert included, and personally, my meal was very good.. So far, we've heard no complaints.

We awarded Certificates of Appreciation to a number of members who have worked diligently over the past 2 years helping SOARA operate and thrive throughout the pandemic. We're looking forward to an active year in 2022 as well.

Three lucky folks also won brand new radios for the holidays; A Yaesu FT-60, and FT-65, both dual band hand helds, and a Kenwood TM-V71A dual band mobile. Congrats to our 3 fortunate winners!

Don't forget, the January meeting will be a week late, delayed by the official Martin Luther King, Jr. Holiday and will be on Monday, January 24, 2022. We will also be holding Winter Field Day, in lieu of SOARA Saturday on Saturday January 29, 2022, at Gilleran Park. This will be a one day only event for us, running from 11:00 until dark.. We will start setting up, with simple antennas and 3 or 4 stations only. Members are encouraged to attend, and hopefully the weather will cooperate. We hope to see you there!

**73, and Have a great Holiday Season!  
Ray, AE6H.**

## [Simple 2 Meter Magnetic Loop Antenna \(MLA\)](#)

This loop antenna is designed to be used for T-hunting, however may be useful for other activities.

The frame is 3D Printed to hold 18 ga (.062 diameter) solid copper wire.

To complete this build you will need the following:

- 24" and 6" lengths of 18 ga bare copper wire
- 3D Printed coil form
- 0.07X" drill/bit
- Desired length of 50 Ohm coax and preferred connector
- Soldering iron & solder
- Wire ties
- Hot Glue or other quick setting adhesive
- Wooden dowel ~.5" diameter x 12"-36" Long
- Wood screw - Suitable for fastening to wooden dowel - .625" - .75" L
- Ruler or tape measure
- Tuning - a VNA or some other antenna analyzer
- Testing - A signal generator source and receiver (optional) (I used a NanoVNA and TinySA)

The online calculator at [66pacific.com](http://66pacific.com) was used to determine the dimensions:

Main loop dimensions are:

- 6.25" Diameter
- 19.6" Length of 18 ga (.062") bare copper wire

Feed loop dimensions are typical 1/5 of the main loop:

- 1.5" Diameter
- 6" length of 18 ga (.062") bare copper wire

Construction Steps - Refer to photos for detail:

1. Print the coil form - I used PETG, No supports required
2. Post process the form to ensure the guide holes are open.
3. Feed 24" of the copper wire through the coil form. Keep the wire as free of bends as possible. Position one end of the copper inside one of the retaining loops of the coil form. This will be the top of the loop.
4. Bend the extra length of the wire to overlap (without touching). This forms the capacitor and will need to be bent / positioned for tuning. (see photos) Trim as necessary.
5. Drill two 0.07x" holes 180° (opposite side) of the main loop overlap (capacitor). This becomes the bottom of the antenna. The holes are to accept the feed loop.
6. Bend the 6" length of copper wire around a form and shape to a 1.5" diameter with equal length tails.
7. Insert the wire tails through the two drilled holes and bed down for retaining.
8. Using small dabs of hot glue, hold the wires in place.
9. Solder your coax to the tails of the feed loop.

## Tuning

Magnetic loops have a very high Q, and are sensitive to small adjustments. This loop has a wide 2:1 bandwidth of approximately 2 mHz.

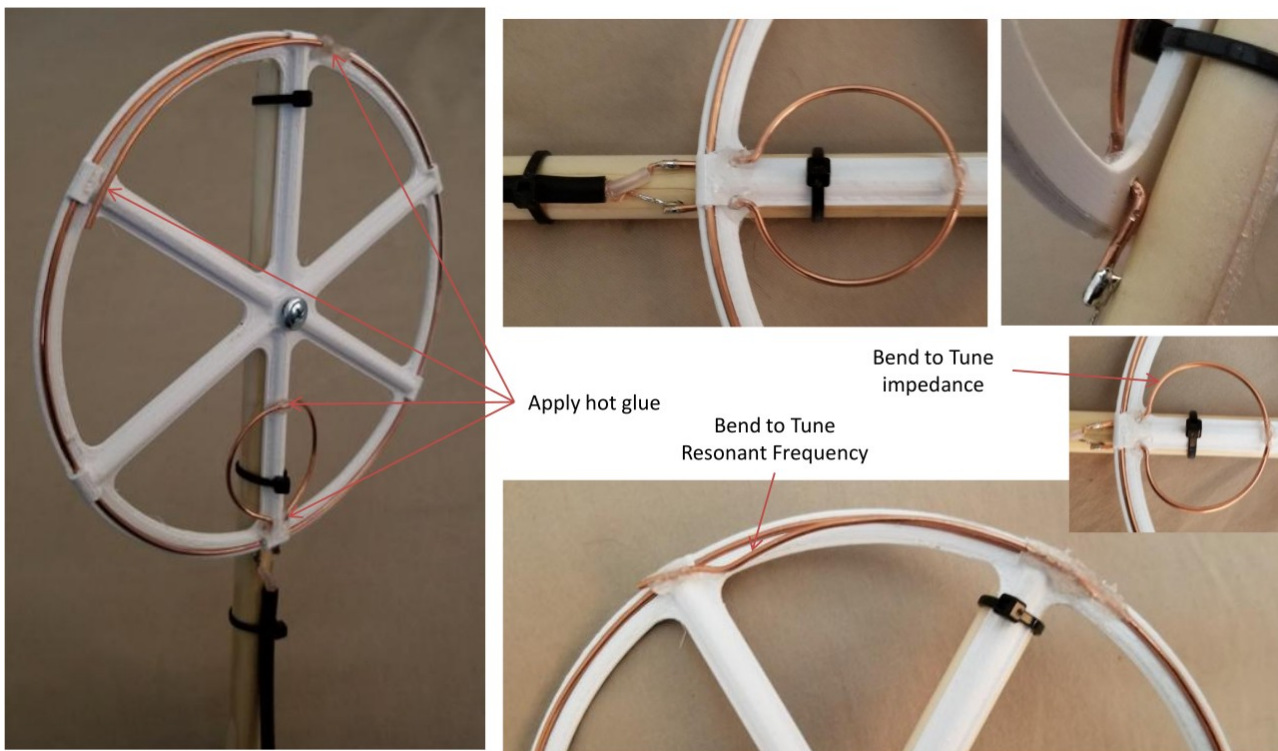
- I used a NanoVNA for tuning and testing with the following procedure:
- Connect the NanoVNA to the antenna and set for the 2m frequency you wish to use (T-hunting the frequency is 146.565 mHz.)
- Adjust the capacitor "stub" of the main loop to obtain resonance at the desired frequency. This can be done by bending the capacitor stub while watching the SWR dip at 146.565 mHz. Touching the loop components will dramatically affect the readings so this needs to be done slowly, and iteratively. It may be helpful to use non-metallic tools to position the stub.
- To lower the SWR as much as possible, it may help to form the feed loop by bending it a little. This adjusts the antenna impedance may affect the capacitor tuning in the prior tuning step, so this could be an iterative process.

## A word of Caution

While not designed specifically for transmitting, this antenna may be used to transmit.

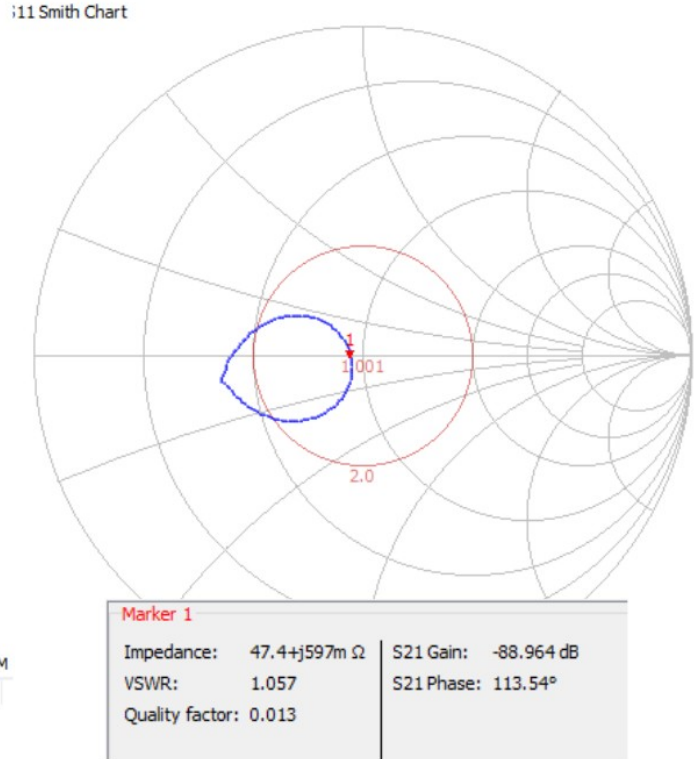
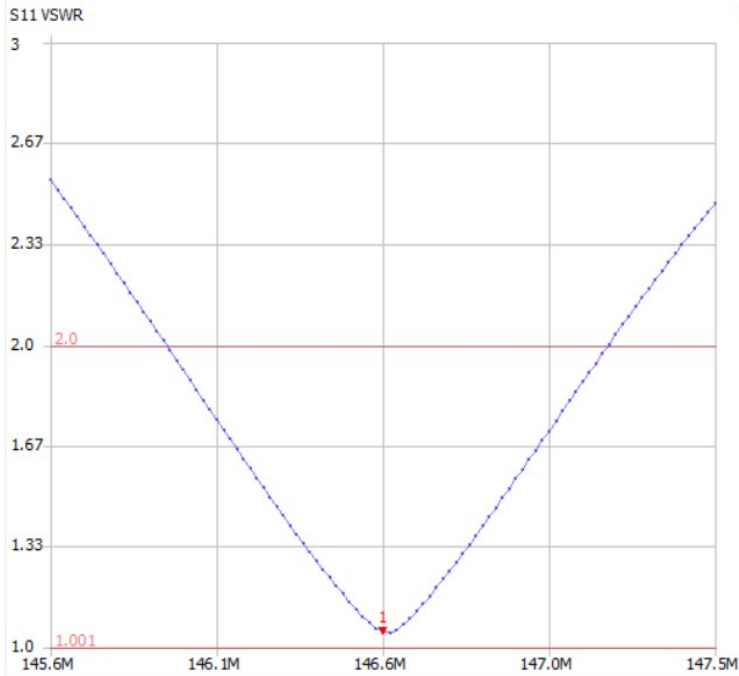
Disclaimer: No testing was done for use as a transmitting antenna - Do so at your own risk!

It should be noted that calculations from the 66Pacific.com site indicate transmitting:  
@ 5W the voltage at the capacitor stub can exceed 133VRMS  
@ 10W the voltage at the capacitor stub can exceed 188VRMS  
@ 20W the voltage at the capacitor stub can exceed 266VRMS



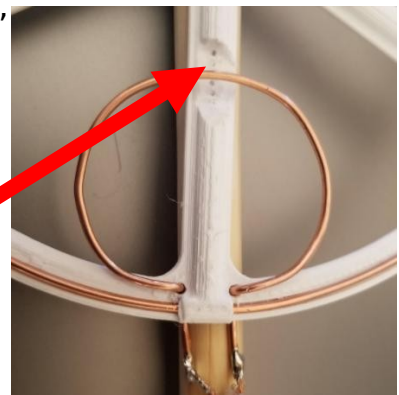
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Send e-mail to [membership@soara.org](mailto:membership@soara.org) or leave a message at 949-667-0173  
Facebook: K6SOA Twitter: @K6SOA

# NanoVNA Tuning Results



## Update - Refinements - 12/18/21

- After some brief testing at today's SOARA Saturday event, I concluded that there is a phase shift which is causing the loop pattern to be off axis by as much as 30°. This obviously would make direction finding very difficult.
- Refining the design a bit, I moved the capacitor to the inside, center spoke of the 3D printed former.
- Place considerable effort to keep the components symmetrical.
- The two ends of the main loop wires should not touch, so a
- revised former could implement features to aid this.
- After these modifications the directional qualities were greatly improved!



Trimmed plastic to allow coupling loop to lay in plane with the main loop.

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## Test setup

- A NanoVNA for tuning the loop to the desired frequency by SWR.
- The NanoVNA also works well as an RF signal generator by setting it in CW mode at the desired frequency, and used a small telescopic whip antenna. If no whip is available, a short piece of wire will suffice.
- I placed the VNA 40' away and with the Loop connected to a TinySA Spectrum Analyzer to observe the signal.



## Future - Additional testing

- A Magnetic Loop Antenna for 2 meters T-Hunting is a handy test situation due to fixed frequency and the convenient size. Fortunately the concepts involved are identical regardless of the frequency, and can easily be scaled to HF.
- Future testing I intend to perform would involve mapping the radiation pattern and fully
- documenting SNR performance over a typical whip antenna as depicted below.
- Comparison to a Yagi would also be interesting. I invite other to join me in evaluating the performance



**Rich Gordon - W6BOT**  
**12/5/21**  
**Updated: 12/18/21**

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## 2022 SOARA Elmer Saturday Schedule

This is my first pass for a schedule. Please give feedback for what you would like to do! This schedule will evolve based on feedback. Suggestions welcome.

- Dec 18 2021, Gilleran Park
  - Tape Measure Yagi antenna build
  - We will have some 3D printed 2 meter magnetic loop parts available to members, reference Rich's W6BOT article. LMK if you want one 3D printed frame reserved for you.
  - A few live T's will be running for testing and experimenting with your build or bring your already built antennas and hunt!
- Jan 29, 2022, Murray Center requested
  - Walking Thunt in the park, we will add more walking thunts through the year
  - Antenna demo's, bring your thunt antenna
  - Antenna tuning clinic, bring antenna analyzers
- Mar 5, 2022, Murray Center requested
  - Coax, connectors, crimp tools. Bring your tools and demo cable building
  - Save money making and repairing your own cables
  - HF demo operation if possible
- Mar 26, 2022, Murray Center requested
  - ESP32, displays, GPS, RTC, rotary encoder demo
  - Raspberry Pi projects, ham clock, raspad, and custom projects. Bring your raspberry pi project or demo your favorite application.
- Apr 23, 2022, Murray Center requested
  - Hotspots, Zum Spots, Jumbo Spots. Run various digital modes over the internet. OLED or Nextion display setup. DMR, DSTAR, FUSION
- May 28, 2022, Gilleran Park
  - HF operation in the park, various antennas
- Jun 25, 2022, Gilleran Park
  - Field day, battery boxes, connector boxes
  - Walking thunt
- Jul 23, 2022, Gilleran Park
  - SDR, software defined radio, RTLSDR, QFH antennas
- Aug 27, 2022, Gilleran Park
  - Satellites, yagi antennas, communicating, need elmers!
- Sep 24, 2022 Murray Center requested
  - Antenna analyzer, spectrum analyzer, test antennas, attenuators and other cool stuff.
- Oct 22, 2022, Murray Center requested
  - QRP, tuna can kits?
- Nov 26, 2022, Murray Center requested
  - ESP32 & Arduino projects, bring your project and share!
- Dec 17, 2022, Murray Center requested
  - Kit building, soldering, buy a kit and get some help
  - Maybe some pixie kits again? CW

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If you want to make a tape measure t-hunt antenna the below links will help. I'm thinking a tape measure antenna build event at Gilleran park on 12/18/21 at 9 am, weather permitting. I can help with the assembly. You will be responsible for the parts. I will bring a solder gun, heat gun for the heat-shrink, some tools, and extension cord for power from the batting cages.

Thunt information provided by Joe Moell, ham radio callsign KØOV. (That's K-zero-O-V)  
<http://homingin.com/>

Instructions to make a homemade thunt antenna  
<http://www.nrharc.org/Downloads/TAPE%20Measure%20Beam.pdf>

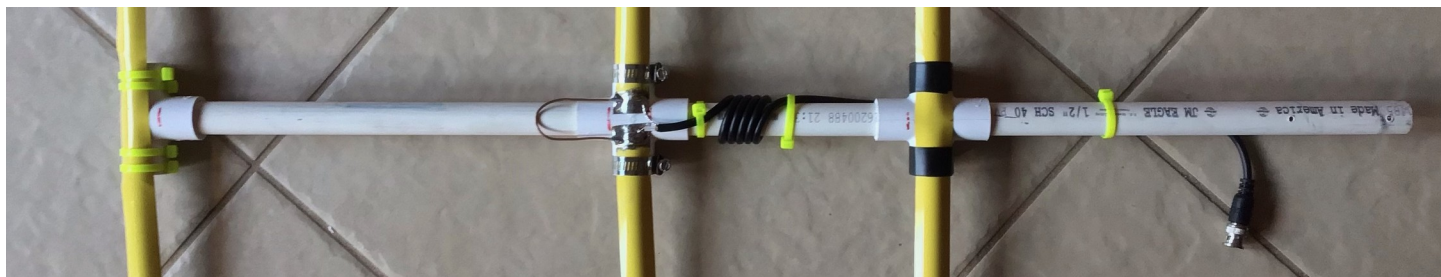
Simple offset receiver attenuator kit. DO NOT transmit into this attenuator. I suggest you read the instructions before ordering a kit.  
<https://kc9on.com/product/fox-hunt-offset-attenuator/>

Video of homemade resistor receiver attenuator. This may be easier to use at a thunt than an offset attenuator. Still, not a good idea to transmit into this attenuator unless you know power levels and are careful. (Thank you Joe, K7KCE for this link!)  
<https://www.youtube.com/watch?v=5v38vdbsEjg>

This is the link to the popular blue box receiver & automated attenuator out of Australia.  
<http://www.foxhunt.com.au/>

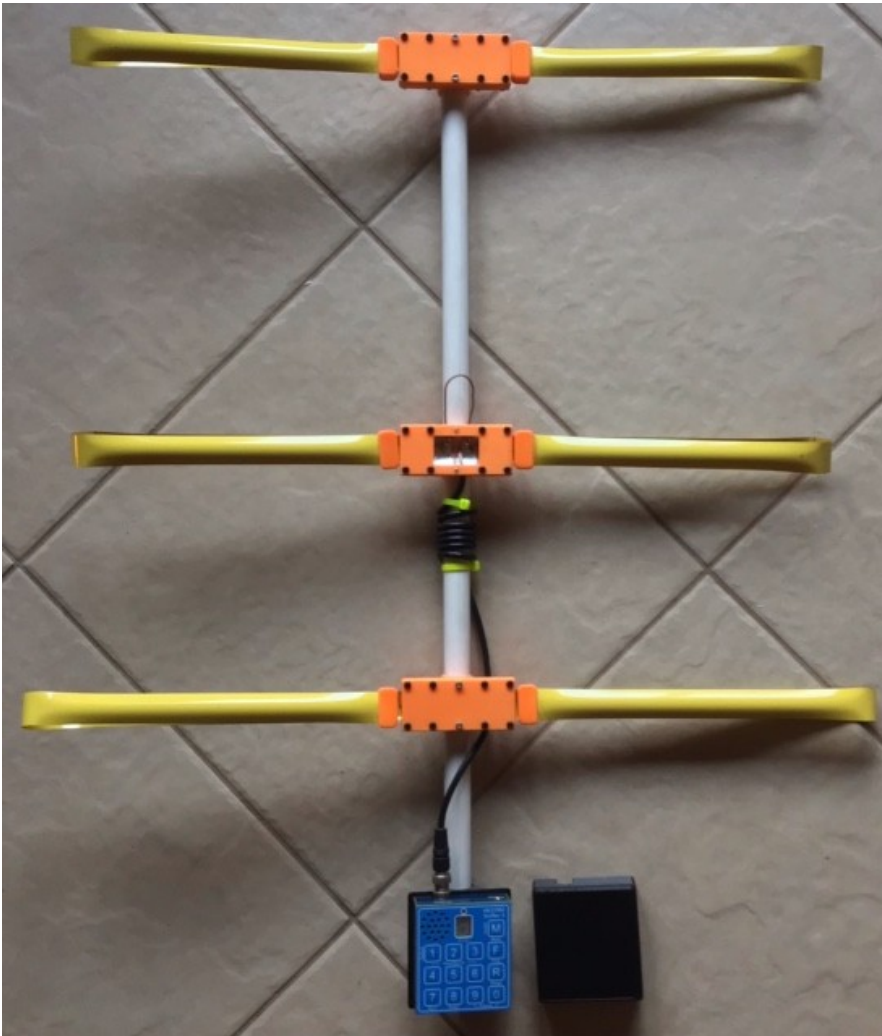
If you are interested in making an antenna, review the parts list and buy the parts listed in the PDF. I cut up 3 metal tape measures from Harbor Freight. So, I have 6 free sets of pre-cut metal tape elements. If you want a metal tape element set let me know. First ask, first reserve.

The 6 stainless steel hose clamps described in the instructions may be substituted with zip ties or electrical tape. This will save a few dollars. Although, you may still want to use 2 stainless hose clamps at the driven elements. This will make the antenna easier to adjust at the hairpin. The below photo shows different methods to afix the elements. Electrical tape, zip ties or hose clamps.



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If you are a 3D printer, on Thingiverse, I posted some STL files for parts I previously designed. This might inspire you to do something even better!!!! Just search on [www.thingiverse.com](http://www.thingiverse.com) with my callsign "WA6ED" and you should find my postings.



This photo, also details the blue box with a 3D printed holder and cover posted on Thingiverse.com as well.

The elements slide in and out to captivate the ends of the elements. I have lines marked on the tape to tune each element length. This design is experimental. Make this version and experiment!

I have some extra BNC coax available. One end will need to be cut off to solder to the driven elements. I don't remember how much I paid for them but \$2 limit 1 seams reasonable.



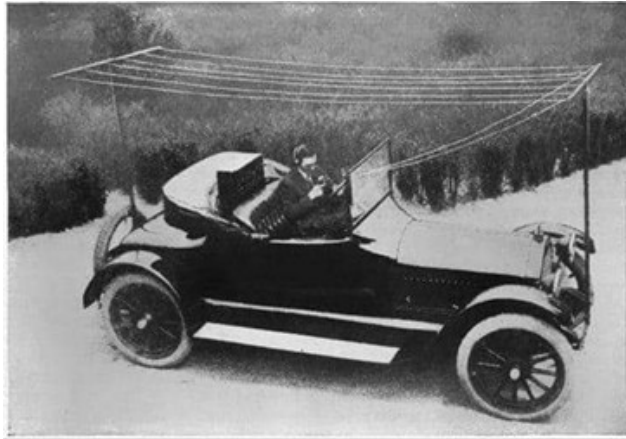
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Please RSVP to [wa6ed@soara.org](mailto:wa6ed@soara.org) if you plan to attend & build on 12/18/21.

**73,  
Ed, WA6ED  
[wa6ed@soara.org](mailto:wa6ed@soara.org)  
SOARA Saturday Coordinator**

### [An Early Mobile Amateur Station](#)



**Historic Photographs**  
An amateur radio set installed in a car in 1919

**WA6RUZ  
Charley**

### [QST Technical Editor, Joel Hallas W1ZR \(SK\)](#)

Retired QST Technical Editor Joel R. Hallas, W1ZR, of Westport, Connecticut, died on November 25. An ARRL member, he was 79. Hallas retired in 2013 but remained active as a contributing editor, handling the popular "The Doctor is In" column in QST and the podcast of the same name. He had been a radio amateur since 1955.

"Joel was not only brilliant, he shared that brilliance with the ham radio community in a way that taught innumerable hams things they needed to know in order to experience success and enjoyment," said ARRL Publications and Editorial Department Manager Becky Schoenfeld, W1BXY. "He was a fine mind, a generous mentor and colleague, and a consummate gentleman. He will be missed."

Retired ARRL Publications Manager Steve Ford, WB8IMY, recalled Hallas as "an iconic figure in amateur radio media as a prolific author of QST articles and ARRL books, and even in the audio podcast community. I greatly enjoyed being Joel's sidekick for the popular 'Doctor is In' podcasts. He had a wry sense of humor both on and off the

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microphone and a remarkably stoic attitude toward the illness that would eventually claim his life."

Hallas authored six books about communications technology, published by ARRL. His titles include Basic Radio; Basic Antennas; The ARRL Guide to Antenna Tuners; Hamspeak; The Care and Feeding of Transmission Lines; Understanding Your Antenna Analyzer, and The Radio Amateur's Workshop.

Hallas earned his bachelor's in electrical engineering from the University of Connecticut and an MSEE from Northeastern University.

He previously had worked for Raytheon as a radar systems engineer and for GTE as a nuclear weapons effects (electromagnetic pulse) analyst and as a satellite and terrestrial communications systems engineer, as well as for IBM and AT&T. He also taught at the college level.

He enjoyed sailing, as described in the July 2009 issue of QST. He and his 24-foot sloop Windfall - fully equipped with a ham station that used the insulated backstay as an HF antenna - graced the front cover.

Survivors include his wife of 58 years, Nancy, W1NCY.

## **Mike Mahan K6MSM**

*Editor's Note: "The Doctor is In" was and is one of the most informative and well produced series of pod casts on some the practical and technical aspects of Amateur Radio. I encourage you to listen to a few.*

## **SOARA Nets and Repeaters**

We all understand that amateur radio is about communications, but it is much more than that. It includes learning from others, interacting with others, teaching others, and improving our service (hobby).

Having said that I would like to talk about our nets and our repeater system.

On Temple Hill in Laguna we have six repeaters, three FM and three D star and they can be linked within their modes.

On Santiago Peak we have two FM repeaters that can operate stand alone or as a linked set.

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When we have recurring nets such as Tuesday, Wednesday and Saturday, they link automatically about five minutes before the net is due to start.

Tuesday, 147,645, 224.640, 447.180 and sometimes 146.025, are linked at 7:55pm.

Wednesday I manually link 147.645 with 447.180 and sometimes 224.640, at 6:55pm.

Friday, we link the repeaters if there is a request otherwise the net is at 7pm on 447.180.

Saturday , 147,645, 224.640, 447.180 and sometimes 146.025, are linked at 8:55am.

This happens every week so please listen before you key down.

On a different note I would like all of you to use our repeaters more often, especially the Temple Hill repeaters in Laguna. Whether you enjoy talking on FM or on D star we can accomodate you.

**Heiko AD6OI**  
**Director of Communications for SOARA**

## [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.

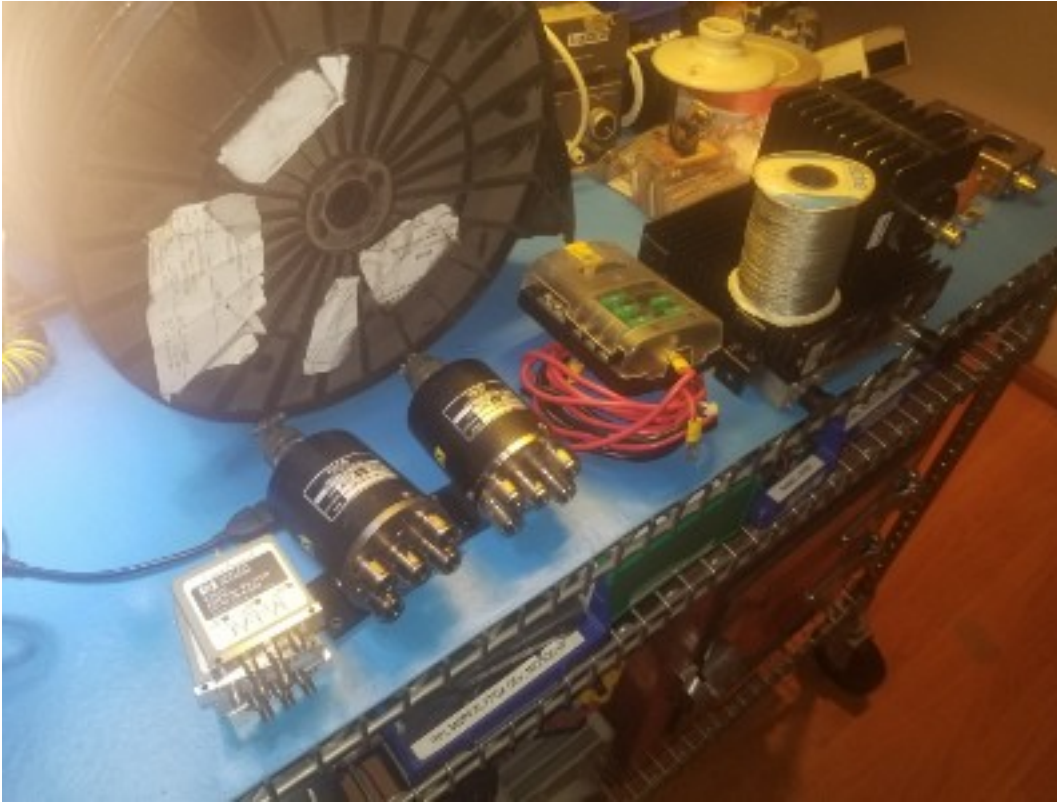
We have two local swap meets that are up and running monthly.

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 November 27, then December 25 and January 29. Yes, 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 40 vendor booths in September. My find last month was a roll of 1" wide gold foil adhesive tape, a 3" dial indicator 0.0005 marks and a collection of RF connectors.

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 15 or so vendors selling radios, components and other items. I picked up a

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AR-22 antenna rotor and control box rebuilt and tested for \$40. The next swap meet is November 17, 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. I got 4 HP latching coax SPDT 26.5/18 GHz switches, a couple of Narda 4 pole 1KW coax switches, 2x 1GHz RF attenuators, Teflon wire, 10KV wire and a big roll of Shielded Cat5e cable and more for \$140. 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. Finally, SOARA is holding an auction at our November General Meeting. There rules will be different than at prior SOARA auctions to make the auction go more quickly and to avoid the many unsold items that plagued prior SOARA auctions. Details on auction rules and item limitations will be sent to all members by email are in this Propagator.

Finally, AD6OI is running a swap meet at his house, 4 Parrell in Foothill Ranch on Saturday mornings for the next few months. If you want to buy, stop by. If you want to sell, bring a table for your stuff and a chair. Contact [ad6oi@soara.org](mailto:ad6oi@soara.org) for details.

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

**Dale - W6EDT**

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**SOARA Statement of Income and Expenses**  
**October 1 - November 30, 2021**

2 Months Ending	November 30	November 30	Increase
	2021	2020	(Decrease)
<b>General Account:</b>			
Income:			
Memberships	5,261	8,219	(2,958)
Other	1,232	1,478	(246)
Total Income	6,493	9,697	(3,205)
Expenses:			
Repeaters:			
Site rental	700	700	-
Utilities	284	276	8
Equipment & Maintenance	-	-	-
Property Insurance	-	-	-
Total Repeaters	984	976	8
All Other Expenses	901	155	746
Total Expense	1,885	1,131	755
Net Income	4,607	8,566	(3,959)
Beginning Cash	25,697	15,392	10,305
Ending Cash	30,304	23,958	6,346
Raffle Account:			
Received	860	919	(59)
Spent	400	1,072	(672)
Current Year Cash	460	(153)	613
Beginning Cash	2,044	2,214	(170)
Ending Cash	2,504	2,061	443

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

**Ron Mosher - KOPGE**  
**SOARA Treasurer**

## [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**

# 2021 SOARA Calendar

Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
General Meeting 7:00 PM	18	15	15	19	17	21	19	16	20	19	15	-
Program	-	-	-	-	Spring Auction	Field Day Prep	-	RF Exposure	-	-	-	-
FCC Ham Exam 6:00 PM			15	19	17	-	19	16	20	19	15	-
Education Classes 8:00 AM			13	17	15	-	17	14	18	16	13	-
SOARA Elmer Saturday 9:00 AM	Net Every Sat	Net Every Sat	20	24	22	FD	24	21	25	23	20	-
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	25	22	22	26	24	FD-	26	23	27	25	22	-
Special Events	<a href="#">Quartz-fest 17-23</a>	<a href="#">Palm Springs Yuma</a>		<a href="#">Visalia DX</a>	<a href="#">Dayton Ham-vention</a>	<a href="#">ARRL Field Day 25-27</a>	HRO Ham Jam			<a href="#">SOARA Picnic 2 JOTA 16-18</a>		<a href="#">SOARA Holiday Party 10</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

**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

# 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  
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**Secretary:** Charles Schultz  
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**Treasurer:** Ron Mosher, K0PGE 949-363-0047  
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## **SOARA DIRECTORS**

**Repeater:** Brian Roode, NJ6N 949-257-2749  
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**Communications:** Heiko Peschel, AD6 949-859-3868  
[ad6oi@soara.org](mailto:ad6oi@soara.org)

## **SOARA APPOINTMENTS**

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

**Activities Coordinator:** Joe Perrigou 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 [km6foyl@soara.org](mailto:km6foyl@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)

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