



The

August 2020

# Propagator

The Monthly Newsletter of the South Orange County Amateur Radio Association

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## General Meeting

August 17,  
2020 7:00 PM  
via  
**GoToMeeting**

## President's Message, August 2020

Greetings, and I hope you and all your family and friends are well and remain so during the current pandemic. It's been a trying time, but we'll get through it together, and fortunately we have the personal contacts made possible through Ham Radio. For that I'm truly thankful.

There's been a welcomed proliferation of nets on the SOARA Repeaters as we move to ham radio to replace our ability to meet in person, And that's great! However, with the increase in nets and other traffic, we're experiencing a new phenomenon; busier repeaters. While this is great, and often our machines are underutilized, the increase has primarily centered around one repeater; 447.180 on Santiago peak.

447.180 is a great repeater, allowing our members to reach into areas of Orange, LA. Riverside, and San Diego. counties. And that plus, is also a negative, as It has become in recent times, the "go to" repeater for most folks using SOARA repeaters. That's understandable as it has the most listeners, and widest coverage, but it also means that at certain times of the day, it becomes unnecessary tied up by lengthy QSO's, especially during commute time.

It used to be the SOARA guideline, that 447.180 was the "contact" repeater that we made calls on and then, if practical, moved to simplex or another repeater. We all realize that moving doesn't always work, but as courteous operators we should certainly consider and practice this when possible. When repeater traffic seemingly dropped off, we sort of backed away from the practice of contacting and then moving. On those times when moving to another channel isn't practical, we should be sure to avoid "quick Keying", and take care to leave sufficient time between transmissions for another user to be able to break in if a need arises.

SOARA has 7 analog and 3 digital repeaters, with great coverage. Back in the day, before we merged with HROC, acquiring the 447.180, we made a great deal of use of the Temple Hill (Laguna) repeaters. They have surprisingly good coverage throughout South Orange County, The San Clemente 2 meter repeater is surprisingly strong through out

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the Saddleback valley, and the coastal areas as well. It's easy to forget our other repeaters and default to the one that virtually always works, but as hams we pride ourselves on being adaptable, and it's worthwhile in trying, practicing, and learning the capabilities and range of our several other machines.

73 and meet you on San Clemente!

**Ray, AE6H**

**SOARA President**

## **General Meeting - August 17 via GotoMeeting** **Virtual Tech Fair**

Please join us online for our August General Membership Meeting. We would normally meet at the Norman P. Murray Community Center as the month of August is usually the SOARA Tech Fair. Since we can't meet in this fashion this year, we are going to attempt to have our Tech Fair online using GoToMeeting. Please join us and see what some of our members have been up to with their projects..

Our General Meetings have always been open to the public and our online platform using GoToMeeting is also open to anyone that wants to join in. You can join our GoToMeeting using either the GTM plug-in or access it via the Chrome web browser. We will also record this meeting and post a link to this page after the meeting.

This is the [link](#) to joining the meeting or you may call in by phone **(872) 240-3412** using this Access Code: **967-306-557**

**Erik, W6INE**

## **Membership Report**

We are now at 225 active members with 4 new members and 2 are in process!

**Sean, KN6JSZ   Tom, KE6TM   Mark, KN6JCU   Joel, KN6JHP**

If You know someone that wants to join SOARA, the application signatures have been temporarily waived. The process is: fill out the application, email it to [membership@soara.org](mailto:membership@soara.org), pay your new member dues & initiation fee \$90, when the board meets we will review and vote on your application. Once approved, I will verify your email and send you the SOARA Repeater User's Guide & Membership Manual electronically in PDF. Now, the hard part. You need to participate to maximize your value! Something as simple as participating in a net will get you going. Check out [www.soara.org](http://www.soara.org) for event details.

**73,**

**Ed, WA6ED - SOARA Membership Director**

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## SOARA Elmer Saturday/Tech Net

We have fun at SOARA Saturday events talking about all types of topics. Since we can't meet in larger numbers at the Murray center or Gilleran park, we are having virus free technical nets. Heiko is net control and I logged. This week, we discussed antennas, coax, and connectors. Lots of good comments. The log is here:

<https://www.soara.org/soara-saturday-log/>

Join us on Saturdays 9am, on Laguna Beach 147.645 or Santiago Peak 447.180 repeaters. Bring your questions or be there to help others.

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

### SOARA Statement of Revenue and Expenses YTD as of 30 June 2020

#### **Revenue:**

Membership Dues	\$11,125.00
Initiation Fees	\$560.00

Total Membership Income	\$11,685.00
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#### Activities:

Auction Commissions	\$131.00
Donations - Unrestricted	\$753.00

Donations - Restricted	
Donations - Hal's Estate	\$680.00

Asset Disposal	
Total Other Revenue	\$1,564.00

<b>Total Revenue</b>	<b>\$13,249.00</b>
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**Expenses:**

## Site Rental:

Santiago Peak	\$3,150.00
City of San Clemente	\$0.00
Laguna Beach Water Dist	\$5.00

## Utilities:

Internet DSL	\$538.76
Telephone Lines	\$666.99

## Website:

Linode	\$124.55
--------	----------

## Insurance

Hartford	\$633.00
Post Office Box	\$118.00
Postage	\$0.00
Corporate Fees	\$0.00

## Activities:

SOARA Saturday	\$34.80
Field Day - Food	\$0.00
Field Day - Other (Generator)	\$0.00
Picnic	\$0.00

Equipment and Repeater Maintenance \$2,508.96

## Other/Miscellaneous

Heiko - Radio Manual	\$24.45
Holiday Door Prizes	\$337.02

**Total Expenses** **\$8,141.53**

**Net Revenue** **\$5,107.47**

Ending Cash Balance	\$20,667.03
PayPal Balance	\$550.37
Raffle Balance	\$2,061.27

## Electric Bike Charger High Frequency (HF) Noise Threat to Amateur Radio Operators Investigation Update

Prepared by Charlie KC6FZY August 5, 2020

In last month's SOARA Propagator the author showed a particularly troublesome picket fence noise observed across the entire 40-meter amateur band. Each vertical noise line in the waterfall had a bandwidth of about 3 kHz moving downward in frequency at about 100 Hz per minute. The lines were separated by about 50 kHz. At times, the noise made SSB signals of S9 unintelligible. The bright bands in Figure 1 are an ICOM 7300 waterfall display of the noise on Saturday, June 20, 2020 at 10:00 AM. At one point a noise band was centered on 7250 KHz and the author had to use the Northern Utah SDR to hear the California Rescue Communication 40-meter net controller..



Figure 1. 40 Meter Picket Fence S9 Noise Dominates Band

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The source of this noise was identified as the 48 VDC Electric Battery Charger shown in Figure 2 located in a garage about a quarter mile from my home. The charger was manufactured in China identified on the case as a LEW3 Model LW-02 110 W switching battery charger with an input of 100 to 240 VAC and an output of 59 VDC and 1.8 Amperes. The charger is sold on Amazon from a supplier named ARyee for \$22.99 plus shipping and from review comments many of these devices have been sold. The seller asserts the device has been approved by ROSH, FCC, and CE. Note that ROSH is probably a misspelling of ROHS a European ISO type organization. This is like referring to the FCC as the CCF.



Figure 2. Noise Culprit was E-Bike Li-ion 48 V 12 Ah Battery Charger



Figure 3. Battery Charger with Input and Output wires wrapped around Ferrite forms

However, the question remained as to why this was happening. To address this question the author purchased an identical device from E-Bay and sent it to ARRL Electromagnetic Control (EMC) engineer W1VLF for analysis. The results of his work can be found on U-Tube at <https://www.youtube.com/watch?v=98VWMIDTbsE&t=45s> <https://www.youtube.com/watch?v=2uprV1Q3TUE> and should be viewed by the reader before continuing. W1VLF takes the charger apart in the first video and shows how a simple choke can reduce the noise substantially.

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After viewing the U-Tube video the results are very disconcerting for several reasons.

1. The charger's output noise on the 40-meter amateur radio band can increase the noise floor at a nearby amateur radio station by more than 20 dB and even more at discrete frequencies separated by roughly 50 kHz throughout the band.
2. The popularity of Electric Bikes is growing, and it is likely that the number of these chargers in urban cities will grow exponentially creating a noise nightmare for amateur radio operators already facing noise problems from roof top solar power systems.
3. Online businesses like E-Bay and Amazon have no way to ensure the electronic devices they sell from Chinese sources meet FCC Part 15 Standards and offer a platform for purchases from millions of people.
4. Although this problem may be due to a few unscrupulous sellers trying to increase their profit by eliminating EMI filtering parts from their products it is possible that this is part of an attempt by a foreign government to harm the United States by disrupting communications in the HF bands (similar to COVID-19 that is killing immune compromised persons and mysterious seed packages with non-native species intended to impact the native environment).

A few ideas for dealing with this problem at the amateur radio level the author suggests follows.

1. Distribute the U-Tube video to as many amateurs as possible so they are aware of the problem and address it at the neighborhood level using the noise suppression methods shown in the U-Tube video and earlier articles in the SOARA Propagator
2. Identify the parts that are missing from the charger's printed circuit board and make them available for second parties to install them in defective chargers
3. Notify ARyee and Amazon customer service they are selling a defective product that does not meet FCC Part 15 regulations (see below for communication from Amazon accepting my review and the review as it appears on their web site; note I used my wife's Amazon account). ARyee did not respond to my message.
4. Notify the ARRL of the problem and request investigation of the problem
5. Notify the Federal Communication Commission and potentially the Federal Bureau of Investigation since this problem potentially threatens emergency communication links in the United States.

The author will continue to update SOARA members as this issue evolves and would appreciate feedback from amateur's that are experiencing this problem and how they are dealing with it.

Top Reviews ▾



Sheri



**This device does not comply with FCC Part 15 and should be taken off the market**

Reviewed in the United States on July 31, 2020

**Verified Purchase**

This device violates FCC part 15 and interferes with radio communication throughout the US. The EMI filter components are missing on the internal PC Board. A complaint has been filed with the FCC. Supplier statements that claim compliance with government RF emission standards is false.

Edit

Delete

| Comment

[See all reviews from the United States >](#)

## Charlie KC6FZY

### [Estate Sale](#)

We have received equipment and parts from the estate of Jeff Towle, W6FCC, a former repeater director for SOARA.

This equipment is at our house at 4 Parrell in Foothill Ranch. It will be sold by silent auction in the following process. The conditions to visiting 4 Parrell in Foothill Ranch will be thus:

- Open for business daily except Sunday, from noon till 5pm, other times available when calling.
- Call for an appointment before coming over (949) 859-3868. No texts.
- Please wear a mask while on our property.
- Place a bid on any item that you might be interested in and send it to me <ad6oi@soara.org> .
- Wait until the bidding is done (one to two weeks).
- Items bid on will go to the highest bidder when no new bids have been received for three days.
- Pay by Braintree or check made out to SOARA when you receive your stuff.
- This is a partial listing and there will be more over the next few days.
- There are also many audio cables and connectors that are not listed.
- Please note that the two scopes are not on the spreadsheet yet.

Motorola Desk mike  
Motorola Desk mike (NIB)  
Kenwood MC-60 desk mike with base  
D104 desk mike  
Astron RS-12A P.S.  
MFJ-1224  
MFJ-810 SWR/Power Mtr

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Hamkey paddle  
Dummy load HF to 225mhz  
Kantronics KAM  
Kantronics KAM  
Kantronics KAM +  
AEA PK-88  
AEA DS-232  
AES DS 2232  
Pace swr mtr P5453  
Switching power supplies (5)  
Soldering kit  
Spool of wire



**Heiko AD6OI**

**Director of Communications for SOARA**

Questions? Call me at (949) 859-3868 or e-mail at <ad6oi@soara.org>

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## **“Heavy Iron” Test Equipment**

Just prior to the Covid-19 situation becoming significant SOARA recieved a donation of some older, high quality test equipment from the Alfred Mann Foundation.

We would like this equipment to go to interested members at a resonable price. However, it would be good to gauge the interest in this equipment from the 1980s and early 1990s. Many of these instruments were top of the line when built and/or are very specialized for laboratory use.

A partial list includes:

TEK 7904A, TEK 7854, assorted 7xxx plugins, Wavetek 3006 Signal Generator, HP 3466A Multimeter\*, Fluke 8600A Multimeter, Clarostat Model 250 Power Resistance Box, TEK TM503, Rockland 7500 FFT Spectrum Analyzer (Audio), TEK 7D20 Digitizer, TEK 1101A Power Supply, MicroServo SR6402 strip chart recorder, Panasonic TV Monitor TR920M, HP 16058-60003\*, 2 digital scales, Ballentine AN/USM-441 marker generator, HP 353A Patch Panel, TEK AN/USM-281C (500 series), Keithly 610A Electrometer (no probes)\*, HP 430C RF Power Meter (no probe), Hitachi VC-8041 O-scope, Waage Solder Melting Pot (small rectangular opening), TEK 5440, 5xxx plugins, TEK 5440 rack mount Style\*, Wayne Kerr PSG2400L\*, Keithly 409 PicoAmmeter (no probels), HP 721A power supply 30V, 300ma, HP 2138 Pulse generator, Bearcat 800XLT scanner, Bearcat BC140 scanner, HP 3476A Multimeter, 2pc General Radio 1602-B UHF Admittance meter in wooden cases, General Radio 847ML component mount, General radio 1212-P2 IMC filter.

\*Item is damaged, but may be repairable.

If you think you might be interested in any piece of this gear, please let me know at [w6edt@soara.org](mailto:w6edt@soara.org) I suggest that you look the specifications up for any of these items on the Internet. Some items have been powered on, most have not. There are no probes for any of the scopes. In general the condition is fairly good on most of the items, given their age. Be aware that equipment of this vintage often have power supply problems becuae of aged electrlytic capacitors.

Thanks,

**Dale Tyler W6EDT**

## **SOARA Nets**

We are running a number of nets on our repeaters to help all of us stay in touch and keep ourselves occupied while we are mostly staying at home. Except as noted below, the nets are held on the 2M (147.645) and 70cm (447.180) linked repeaters.

Some of these are what we have been doing for a while such as the Tuesday night 2000 net on the 2M/70cm repeaters, the Dstar net Wednesday nights at 2000 on 146.115 MHz and the HF nets on Saturday 40M (7.200 MHz) at 0800 and 10M (28.415MHz) at 0900.

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There are new nets as well:

Astronomy Net - Wednesday evening at 1900 on 146.115MHz (Dstar)

Dinner Net - Friday evening at 1900 on 2M/70cm

Tech Net - Saturday morning at 0900 on 2M/70cm

**Dale, W6EDT**

## [GotoMeeting Information](#)

### WHAT TO EXPECT MONDAY EVENING

When you join Monday's meeting, it is highly recommended you use Google Chrome if you plan on entering via browser. It is also recommended to use a headset or earbuds with a mic. Avoid a laptop mic as the speakers that sit right next to the mic tend to produce echo and feedback. Your webcams will be disabled.

The meeting will be locked in order for Soara Board members and our Presenter to arrive first. Please email me if you would like to make an announcement to the other members so I'll know in advance to call on you. You will be in a waiting room until 7pm when I'll open up the meeting. Please keep your microphones muted when not talking. I will Mute all attendees if there is an unmuted mic disrupting the meeting.

You can use the Chat feature to request to ask a question. When, acknowledged, you can unmute your mic and ask away. You may ask the question in the chat if you prefer and we'll ask the question for you. You may comment as well if you like, just keep it clean. You can also chat with a specific individual privately. Just be sure of what you are saying and where it is going.

As this meeting is open to the public and announced as such on the website, we expect a smooth meeting. If we, by chance, get a disruptive guest they will be Dismissed from the room by the Moderator and the meeting room will then be locked to prevent re-entry.

Let's have a great online meeting!

**Erik, W6INE**

Some additional notes from Dale Tyler. Meeting details and links, etc. will be sent out Monday afternoon and will also be available on the [soara.org](http://soara.org) website.

So far, the only browser that I have seen work is Chrome. The meeting link will look something like SoaraMeeting\_**subject to change - check email or soara.org**). When you follow the link you will see a screen similar to this:

## Practice Meeting Room



Erik Wresch

VP - South Orange Amateur Radio Association

📍 Mission Viejo, California

[About Me](#)

Join My Meeting

Join Meeting In Browser

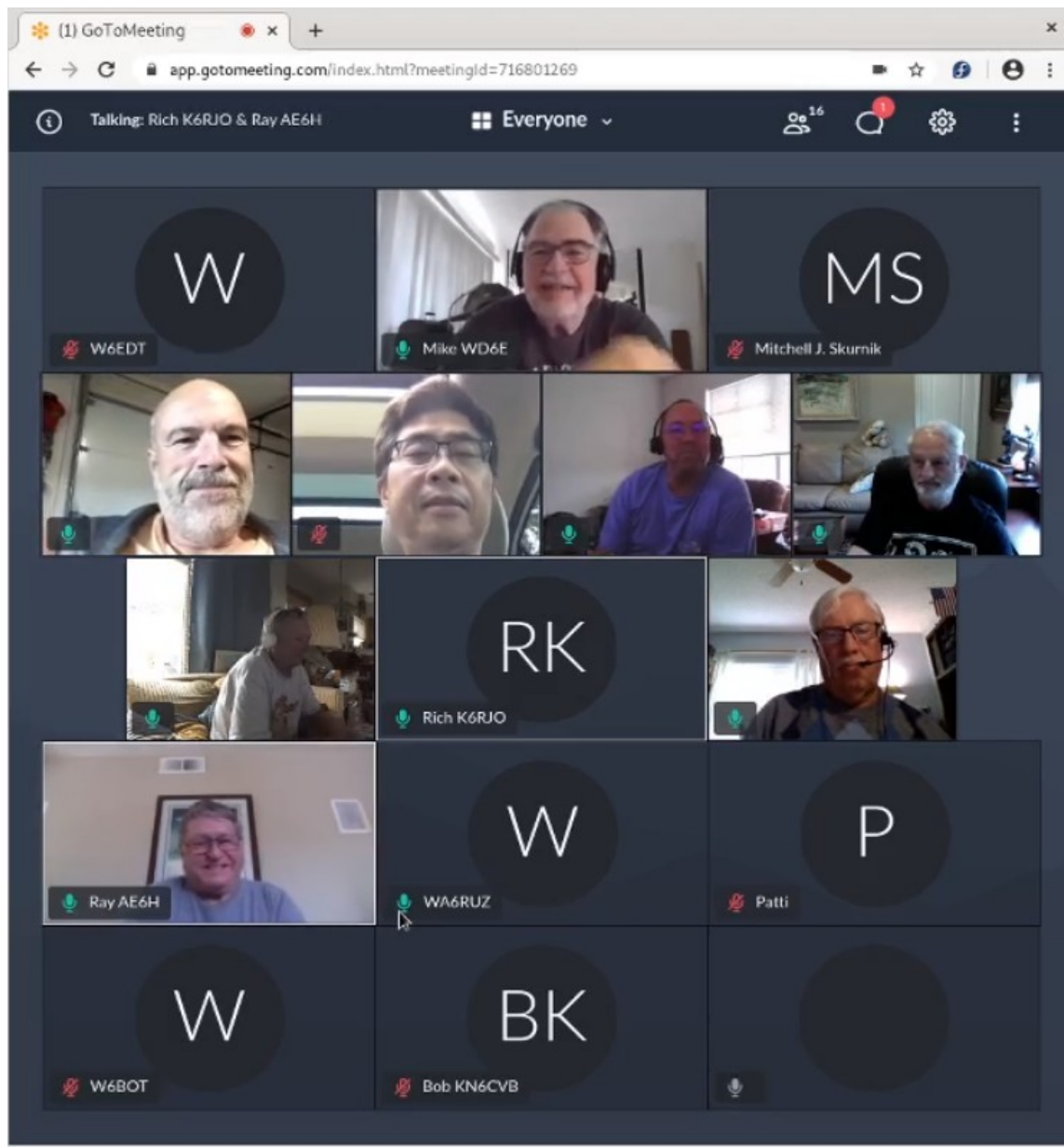
[My GoToMeeting](#) [About Us](#) [Terms of Service](#) [Privacy Policy](#) [Support](#)

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Be sure to choose “Join Meeting in Browser”. Next you will have an opportunity to enter your name and ID. Please use your callsign for your ID. For example, I used W6EDT and my name was Dale. If you have previously used GotoMeeting, your name and ID will be stored in cookies associated with the site. You may or may not want to change them,

As was mentioned above, a headphone is best, but as long as you do not unmute your mike, the PC speakers will also work.

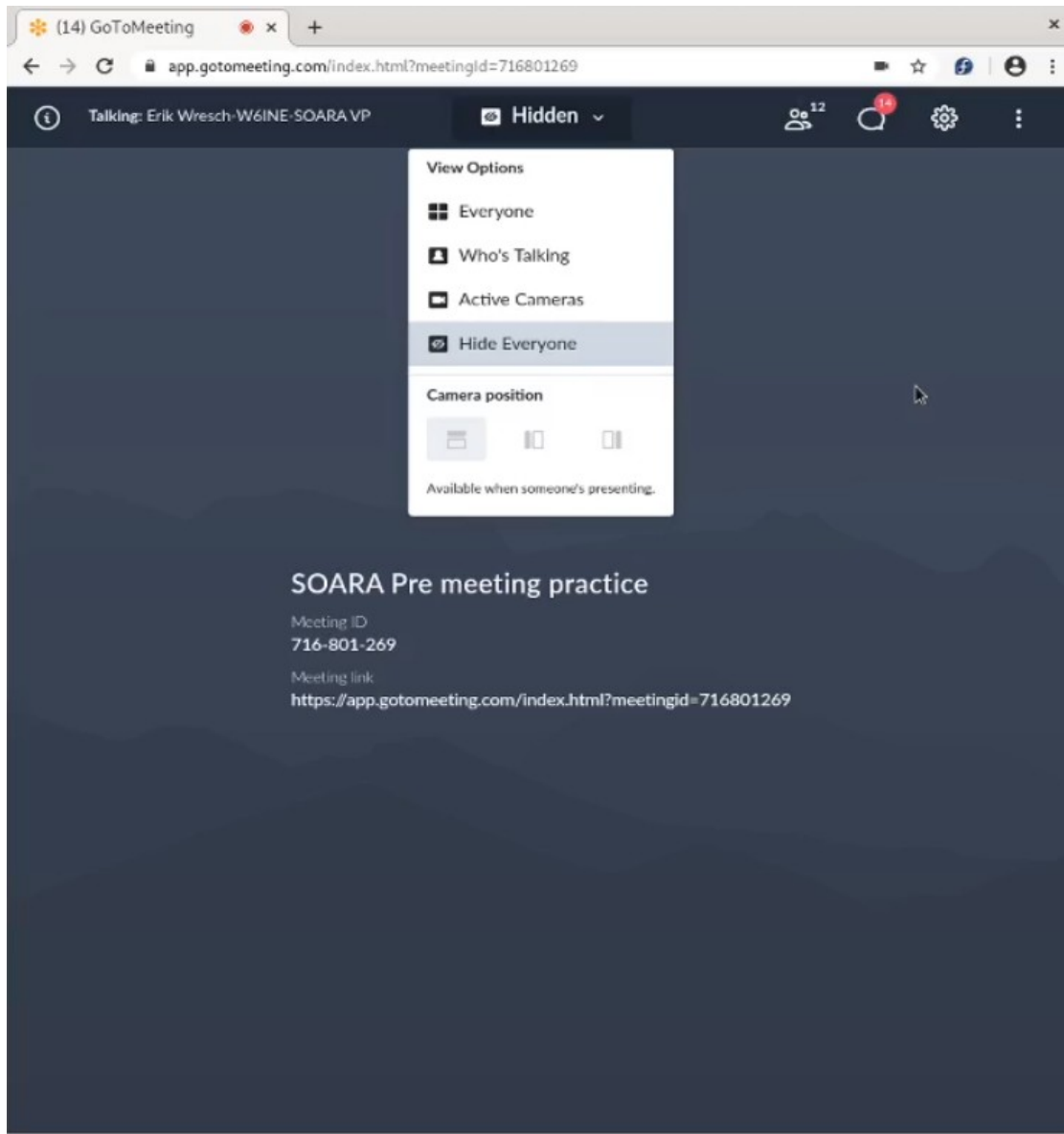
Once you enter the meeting you will see something like this (I am the “W” in the upper left:



I would suggest you click on 'Everyone' at the top of the screen and change the display to 'Hide Everyone'. This will make the presentation, larger and easier to see.

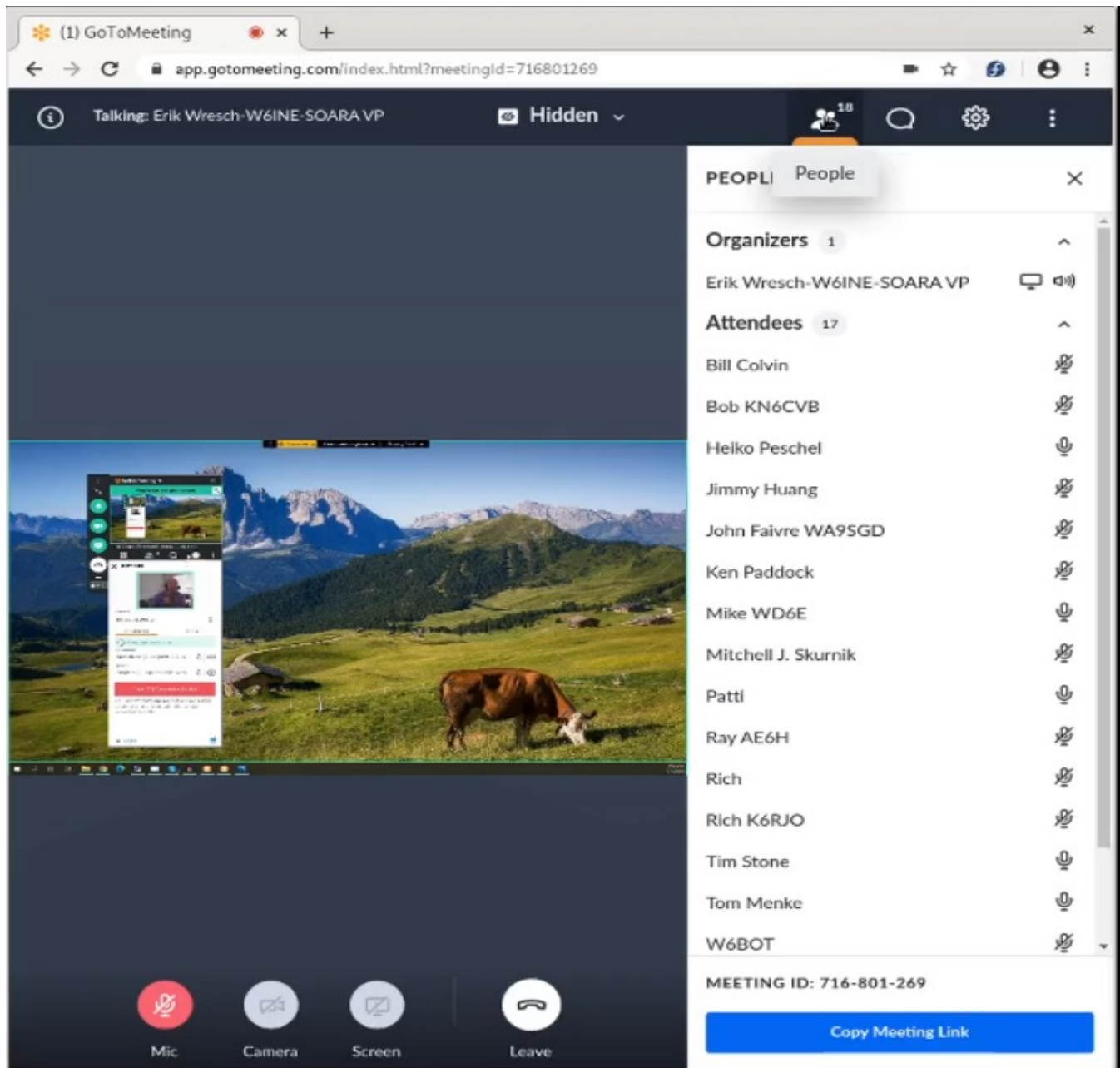
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Finally, if you need to update your name or simply want to see who is logged in, use the people icon at the top right of your screen. To update your name or ID, click on your name and press "Edit" in the drop down menu.



Please leave your Mic icon as shown (muted **RED**), which prevents noise at your location from disrupting the meeting.

There will also be a telephone number you can call on a telephone and an access code to allow you to listen to the presentation, if a computer is not available. Please be sure you have unlimited long distance, as the number will not be toll-free.

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If you wish to join the meeting on a phone or tablet, either Android or Iphone, you will need to install the GotoMeeting App from you phone vendors approved 'store' The App is free, but may require certain permissions to function.

If you need help getting connected, please place a call on the Santiago repeater and I'll try to help you.

Also, if you would prefer to watch a live stream on YouTube, the link will be announced on the soara.org web site. The meeting will be available for playback later on YouTube as well.

This is a great way to participate in our club's meetings even when staying home to be safe.

**73,  
Dale, W6EDT**

### **[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**

# 2020 SOARA Calendar

Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
General Meeting 7:00 PM	27	24	16	20	18	15	20	17	21	19	16	-
Program	-	-	-	-	Spring Auction	Field Day Prep	-	SOARA Fair	-	-	Fall Auction	-
FCC Ham Exam 6:00 PM	27	24	16	20	18	At Field Day (2pm)	-	17	21	19	16	-
Education Classes 8:00 AM	Tech 25	General 22	-	-	Tech 16	-	-	Tech 15	Extra 19	-	Tech 14	-
SOARA Elmer Saturday 9:00 AM	11 Murray	8 Murray	14 Gilleran	11 Gilleran	9 Murray	13 Gilleran	11 Murray	8 Gilleran	12 Murray	10 Gilleran	14 Murray	12 Gilleran
SOARA T-Hunt 1:00 pm	-	-	-	-	-	-	-	-	-	-	-	-
Board Meeting	Feb 3	Mar 2	23	27	26	-	27	24	28	26	23	-
Special Events	Quartz-fest 19-25	Yuma 14-16		Visalia DX 24-26	Dayton Ham-vention 15-17	ARRL Field Day 26-28	HRO Ham Jam -	SOARA Picnic 3		JOTA 16-18		SOARA Holiday Party 6
Major HF Contests		ARRL DX-CW 15-16	ARRL DX-SSB 7-8 CQWPX SSB		CQWPX CW 30-31	ARRL Field Day 21-23			CQWW RTTY 26-27	CQWW SSB 24-25	CQWW CW 28-29	
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 OC Marathon LH Marathon	ARRL Field Day 26-28	MV Fire-works 4			Vision Quest		Run for a Claus

Dates subject to Change - Check the SOARA Web Site (<http://www.soara.org>) to verify locations and times

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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:

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

D-STAR (146.115 C module): Wednesdays @ 8:00PM

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



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