



The

August 2022

Propagator

The Monthly Newsletter of the South Orange County Amateur Radio Association

In This Issue

Presidents
Message.....1

Tech Fair.....3

Elmer Saturday
.....3
Membership ...3

Soara Picnic....4

Financial Report
.....5

Antenna
Experimenting.5

Nets/Repeaters.
.....16

Swap Meets are
Back!.....16

Soara Library 17
Sale Mail List.17

General Meeting

NPM Center
August 15,
2022 7:00 PM
Norman P. Murray
Center
23492 Veterans
Way, Mission Viejo,
CA 92692

President's Message - August 2022

Tempest in A Teapot??

I may have stirred up a tempest in a teapot. I want to dispel some thoughts people have expressed after listening in to the OC Fire Watch Net, this past Thursday evening (8-11) on the SOARA 147.645 and 447.180 repeaters. There is NO BRAND NEW FCC RULE about Identifying, it's just new to some hams, in that they haven't been previously aware. In short; Yes, you still have to ID with your FCC assigned call.

The FW Net discussion was about adopting the use of Tactical Calls during Fire Watch Deployments and Training Exercises, but not the weekly Thursday evening net. We discussed that nothing in part 19 of the FCC rules relating to station identification requires that the ham operator give their FCC assigned call sign at the beginning and end of each and every single **transmission** as a few hams sometimes do, but rather at the end of each **communication**. A communication is typically a series of **transmissions** that occur with in a very short period of time. Also if the **communication** exceeds 10 minutes, the amateur station must identify with their FCC Call at at least 10 minute intervals.

Key here is the distinction between a **transmission**: (every time you key the mic.). and a **communication**, or typically a conversation. The actual text of the FCC rule is:

§ 97.119 Station identification.

(a) Each amateur station, except a space station or telecommand station, must transmit its assigned call sign on its transmitting channel at the end of each communication, and at least every 10 minutes during a communication, for the purpose of clearly making the source of the transmissions from the station known to those receiving the transmissions.

Contacting Soara: Questions about SOARA? Postal mail: P.O. Box 2545, Mission Viejo, CA 92690
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This rule is nothing new, and goes back 30 years or more, but some hams, especially legacy ones remember back to when you were required to identify at the beginning and end of each transmission. I even remember "legacy" hams giving BOTH callsigns in a QSO at the beginning and end of each transmission. Example: "WA6ABC, WB6DEF, Thanks for the information you just provided, WA6ABC, WB6DEF", and then the response: "WB6DEF, WA6ABC, Glad I could help, what's your weather? WB6DEF, WA6ABC". "WA6ABC, WB6DEF, Sunny and warm, Yours? WA6ABC, WB6DEF. Well, you get the idea, and this could go on for quite a while. Extremely inefficient, especially for public service or emergency nets.

This has been streamlined a bit in recent years, but for regular day to day QSO's between individuals, It is still recommended, and SOARA requests, that users give their FCC assigned call at the beginning of a communication, at each 10 min thereafter, and of course at the end of the communication. This normally happens anyway, as when you call someone, and give your call, the other party answers, thereby both giving their calls at the beginning of the communication. The 10 minute and end of communication rules also apply.

Now, for what the Fire Watch net conversation was about, is the attempt to move FW in the same direction as most other Public Service and Emcom Directed nets typically use during exercises and events; Tactical Calls. These Tactical Calls typically refer to a location or a job position within the ICS system, They are much more efficient, and have been adopted by most similar groups. Below is an excerpt from the Santa Clara (CA) County ARES/RACES manual:

Tactical vs. FCC Call Sign Use

"During a directed net, you will be called by your tactical call sign, not your FCC amateur radio call sign. You should use the tactical call sign to identify your transmissions, and you should call other stations by their tactical call sign. Of course, you must also comply with FCC regulations and identify properly with your FCC call sign. Remember, part 97 requires that "Each amateur station . . . must transmit its assigned call sign . . . at the end of each communication, and at least every ten minutes during a communication" That means our FCC call sign. To comply, simply add your FCC call sign to your last transmission in a series.

Also a quick Google of "tactical callsigns for Ham radio" will yield lots of similar results and explanations.

I hope that this dispels and eases questions and concerns about what might have been heard during the training portion of the OC Fore Watch Net, this past Thursday evening.

73 and stay cool.
Ray, AE6H

Annual SOARA Tech Fair - Murray Center **August 15th, 7pm. - Norman P. Murray Center**

This is August and August is our annual Tech Fair Month. To date, we've only had a few responses for people to have a project to present this month. We usually have at least 6-8 people with projects to "show and tell". Your project can be anything from a really cool portable battery box or a Raspberry Pi or Arduino project with a Ham Radio application. Or.....maybe you took a Ham Radio application and found another use for it.

If you have a cool project you would like to show, send me an email and tell me what it is. If you have already contacted me, you're good. Keep in mind, your project may bore you now, but others may not have seen it and might think it's a super cool idea they can run with.

Erik Wresch
W6INE

SOARA Elmer Saturday, 08/20/22, Gillern Park

I updated the SOARA Saturday page on www.soara.org. Go there and see the schedule. The next SOARA Saturday will be at Gillern Park, August 20, 9am to noon, coffee and donuts will be provided. We will be talking about Satellites, yagi antennas, communicating via satellites. 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

The board appointed me to the Membership Director position at their last meeting, so I'm coming up to speed on the job with the help of our most excellent previous Membership Chair, Ed WA6ED. Let me know if you need anything membership-related - a new badge, a lanyard, a change to your contact information, or whatever - and I'll muddle through it until it's taken care of.

Our active membership count now stands at 226. We've always got room for a few more, so please feel free to invite your ham friends to join, too.

73,
Greg, N6PM

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[SOARA Picnic - September 24 - Laguna Niguel Regional Park](#)

I am very happy to announce that the annual SOARA picnic will be held this year on Saturday, September 24th from 11am - 3pm at Laguna Niguel Regional Park, Shelter #3 (see map, circled in red). Come join us for some fun and food!

The club will provide hamburgers, hot dogs, all the fixings, and bottled water. There will be a limited number of plant-based burgers and sandwiches as well. Side dishes, salads and deserts are pot-luck. Bring your favorite dish and enough to share with others!

It wouldn't be an amateur radio picnic without some radio fun so feel free to bring your "park rig" or any other radios and get on the air. I will set up a short walking T-hunt as well so bring your t-hunting gear!

Please RSVP to me, joe@perrigoue.com with the number in your party that will be attending. We are expecting a big crowd this year, I need you to please make an extra effort send an RSVP so we can get an accurate count. The picnic is open to all members and immediate family as well as prospective members.

Looking forward to seeing you all!

Laguna Niguel Regional Park
28241 La Paz Rd, Laguna Niguel, CA 92677
Shelter #3 (see map, circled in red)
11am-3pm Parking is \$5, free to OC Parks members

**Thanks,
Joe K7KCE**



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SOARA Statement of Income and Expenses October 1, 2021 - July 31, 2022

Ten Months Ending:	July 31 2022	July 31 2021	Increase (Decrease)
Cash Income:			
Memberships	7,878	10,909	(3,031)
Other	2,133	1,358	775
Total Cash Income	10,011	12,267	(2,256)
Cash Expenses:			
Repeaters including site rental, utilities & insurance	6,363	7,235	(872)
Member Activities	3,162	237	2,925
Other expenses	946	627	319
Total Cash Expenses	10,472	8,099	2,373
Cash Net Income	(462)	4,168	(4,630)
Beginning Cash - October 1	27,506	22,722	4,784
Ending Cash - July 31, 2022	27,044	26,890	154

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

Ron Mosher - K0PGE
SOARA Treasurer

Experimenting with Ham Antennas

We've heard it said that the antenna is the most important part of the ham radio station. Antennas are a fascination for me since I was a teen in the 70's, trying to build the best FM broadcast dipole to listen to music. There are so many variables affecting the performance of the antenna, it was pure luck if I got it "just right".

These days, having an interest in operating in the field with a QRP rig, I can't afford to waste power, so I should have my antenna carefully optimized for the frequency on which I'll be transmitting. So recently, I began to experiment with designing and building my own antennas, using software, and reading the ARRL antenna book.

Two things have opened up the world of antennas for me, the NANO VNA (device), and the MMANA-GAL antenna-design software (the base version is freeware). I enjoy optimizing a design in software, and then testing the resulting physical antenna with the NANO VNA. So far the tests (HF, VHF and UHF) have generally validated the software each time. If you'd like to explore some of your own antenna ideas, the software is not too hard to learn. Callum McCormick of the YouTube channel "DX Commander" (among others) has posted video tutorials on how to use MMANA.

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A "Welding rod antenna"

I recently stumbled on an interesting case with MMANA; a monoband antenna, similar to a vertical dipole, but with the shield-part shortened, and grounded at the end. There is a similar antenna in the ARRL antenna book called a "series-fed $\frac{1}{4}$ wave vertical". Figure 1 shows the antenna as modeled in MMANA. It inspired a physical test article that actually worked for 20m and 40m if the corresponding $\frac{1}{4}$ wave wire length is used. As it turned out, the physical antenna actually achieved better SWR than predicted by MMANA.

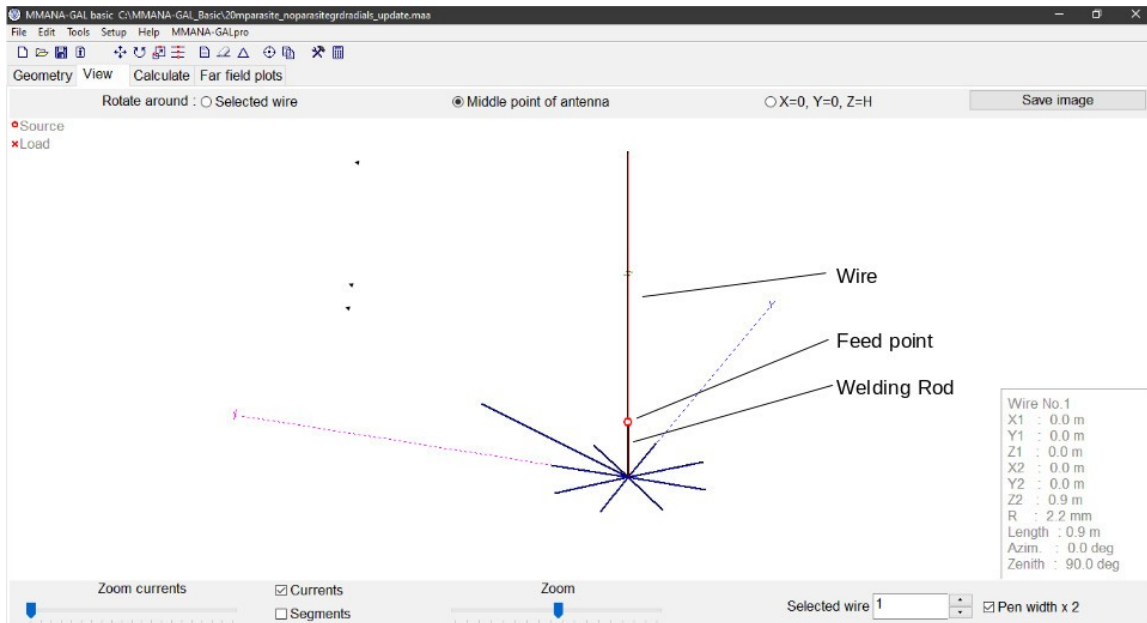


Figure 1 a) MMANA model showing the geometry for this antenna. Red dot=feed point. Viewed from the approximate direction of maximum gain.

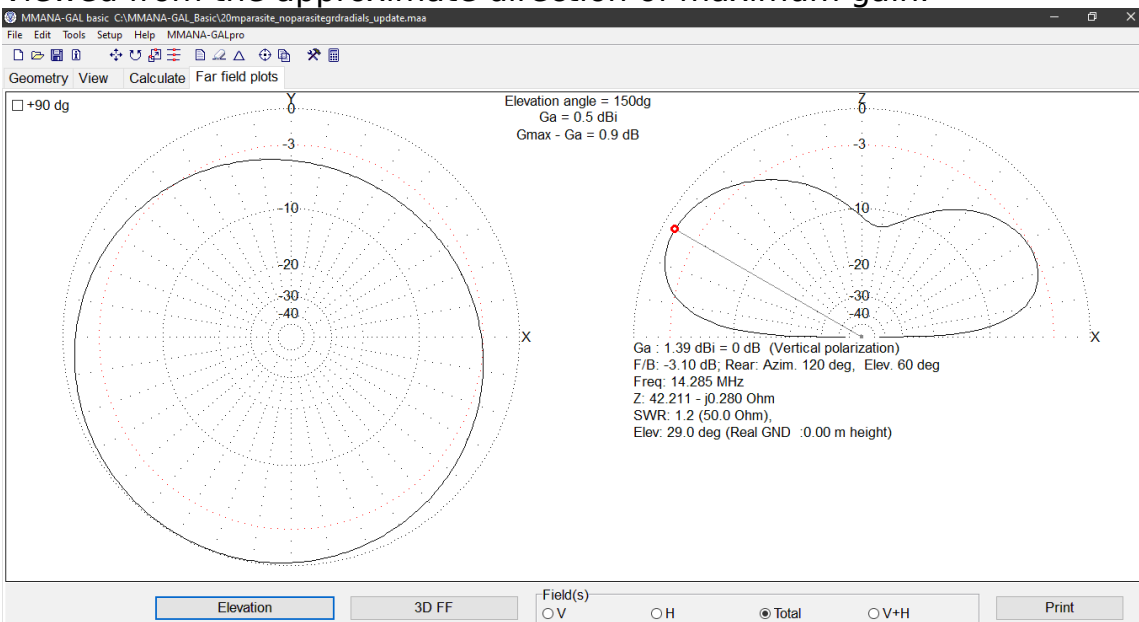


Figure 1b) Slight directivity and gain due to the long radial, without it, the lobes are symmetrical. It also has typical gain for a vertical at the DX takeoff angle of about 5 degrees.

The physical antenna has some differences from the computer model in that the bottom portion extends into the ground a short distance. This lower portion consists of a 1/8 inch copper-clad steel welding rod, 36 inches long. At the top end of the rod, a SO239 is soldered at its mounting flange. The welding rod is pushed into the ground for a distance that will vary depending on tuning requirements (more later). The rod provides some limited structural support suitable for a vertical wire. I connected the center conductor using a short piece of heavy gauge stranded wire, and a "bullet connector" (used for RC airplane batteries). A 1/4 wave length of wire is used as the vertical radiator, and is connected to the SO239 via the mating bullet connector (see Figure 2). The connector allows different 1/4 wave radiator wires to be swapped-in.

I cut and tested wires for three bands: 17m, 20m and 40m. The 20m and 40m wires could be easily tuned by adjusting their length, but the 17m wire would not resonate at 50 ohms by trimming alone (SWR=1.7), and needed just a little help from a tuner for a perfect match.



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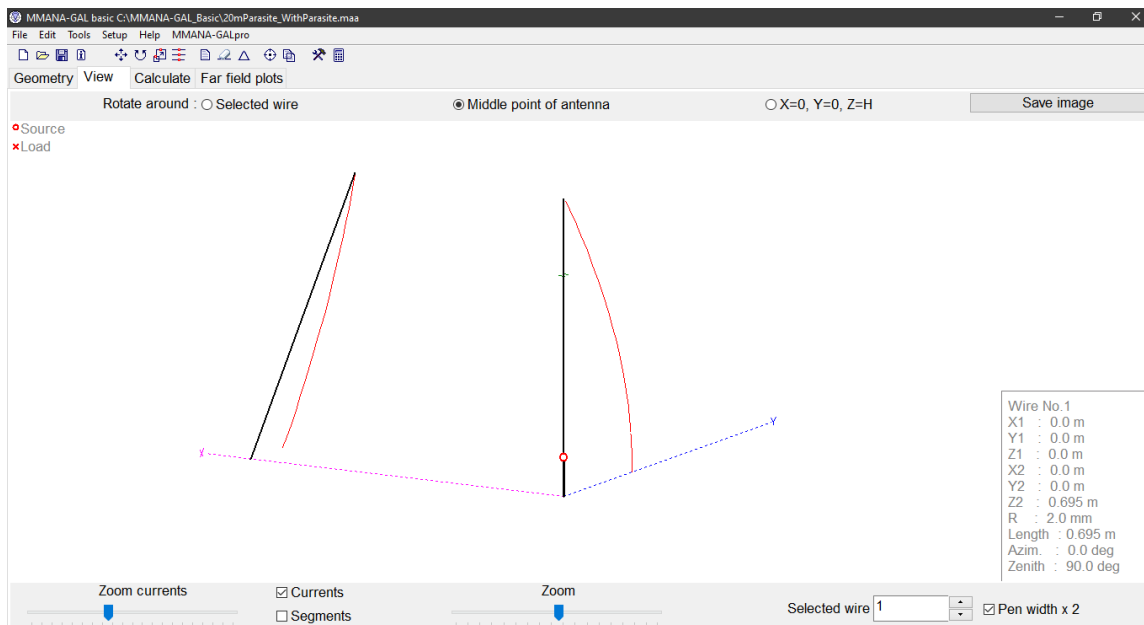
Figure 2

(Left) Welding rod at approximately 12 inches depth, SO239 –PL259 coax connection and bullet connector for radiating vertical element swap (red). The screen was tested in addition to the ground radials.

(Right) “Kit” ready to test: Rod with SO239 and bullet connector, 20m and 40m wires, NANO VNA and laptop.

Added a Reflector

I also modeled, built and SWR-tested a passive reflector element for 20m of a length determined in MMANA. The software will optimize the geometry based on selectable parameters, which resulted in the tilt of the reflector toward the driven element (see Figure 3). The reflector antenna model achieved a better predicted SWR than one without a reflector, and showed a fair amount of directivity and gain. In field testing, the NANO VNA confirmed there are strong effects even on SWR when the reflector is present. Although the real advantage is the directivity and gain, a conclusive analysis will require more rigorous future testing.



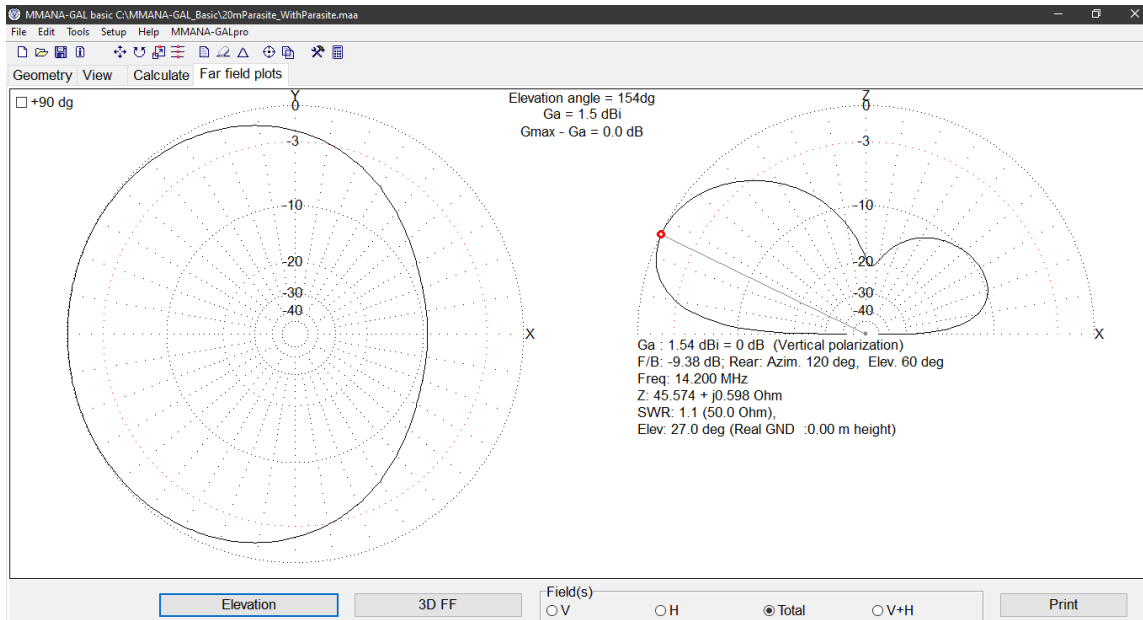


Figure 3 Top) MMANA Geometry for the reflector antenna. Note the significant currents on the reflector (red curves). Bottom) Moderate directivity and gain due to the passive reflector element.

Testing setup

I used a fiberglass telescoping pole for testing Figure 4 . The base is very stout, being constructed of a 2 ½ inch water pipe and three, braced, 20-inch steel bookshelf brackets, bolted to flush anchors in the concrete patio. A turnbuckle on one of the brackets allows for fine adjustments of the pole's angle. The fiberglass pole fits closely into the water pipe and is held firmly by a rubber repair joint with stainless steel clamps. In the field, a line is used to hoist the wire up on a tree limb instead of the fiberglass pole. A PVC pipe Tee is formed at the top to displace the wire from the fiberglass pole. The radiating wire is attached to 4 lb test fishing monofilament, which in turn is looped over the horizontal PVC pipe with a coupler at the end so the mono does not slide off the pipe. This provides a means of varying the wire height, and even changing the wire. The weight of the Zebco reel ensures the wire remains straight and gently taut.



Figure 4 MFJ Pole fully extended, with 40m $\frac{1}{4}$ wave wire, bolted steel pipe base, and a curious bird.

A NANO VNA was used to test impedance and SWR, and was calibrated directly at its S11 port. I've also calibrated with the length of coax to be used, putting the test plane at feed point of the antenna, but lately have decided to look at the coax+antenna as a system, because sometimes the coax itself will become part of the antenna (counterpoise, common mode currents etc). But for future reference, I compared connecting the NANO directly at the feed point against using coax and the appropriate feed point calibration. It wasn't a perfect match on the Smith chart, but they were close enough.

The Smith chart

The NANO's smith chart feature allows an assessment of the complex impedance of the system, and so the mismatch (deviation from 50 ohms) which will reduce power transfer. Because the resolution of the Smith chart in the NANO's software I'm currently using is poor (I'll shop for better), I resorted to plotting data on a PDF image of the Smith chart in PowerPoint.

The Smith chart can also guide the design of a matching network that will improve performance, but ideally, an antenna system that has 50 ohm impedance without added inductors and capacitors is desired (like the 20m and 40m wires I tested). Alan, W2AEW's YouTube channel has some outstanding videos on how to design matching networks using the Smith chart. Also, there is a intuitive application at "RF Mentor.com" with which you can quickly, graphically design a matching network using an interactive Smith chart. If you've watched W2AEW's videos, try the RF Mentor interactive Smith chart app, I think it is amazing and intuitive.

The "1" at the center of the Smith chart, called the "prime center", actually represents 50 ohms, (it is just mathematically-normalized by the nano). For lowest SWR, you want to get your operating point as close to the prime center as possible. When the displayed curve (from sweeping frequencies) intersects the resistance axis line you have resonance (zero reactance) at that frequency. But it's not necessarily a complete "match" unless it occurs at the prime center, which is the only place along the resistance axis where the impedance would be 50 ohms. The SWR is constant on any circle centered on the prime center, and the SWR increases with the radius of that circle (then you can read the SWR off of the right-hand half of the horizontal line (resistance axis)).

Side notes on the Smith chart

By adding transmission line, (coax) the operating point will move in a circular pattern around the prime center of the chart. SWR will be the same, but interestingly, you can exchange an inductively reactive mismatch into a capacitive one and vice-versa. This makes sense because the coax also has some capacitance and inductance, which also helps to explain why the velocity factors for coax can be so low (66% for RG58). These imagined constituents of the coax charge and discharge, delaying the progress of the energy along the transmission line (coax). You can actually use this effect to select a length of coax that will help tune the system. A properly-selected length will put the operating point on one of the "unity circles", (kind-of an off-ramp to a perfect match) from which you can use a single inductor or capacitor to finish the match. Moving the data around the Smith chart in this way can help, because certain matching network topologies, and their specific components required, are only applicable to certain regions of the Smith chart (W2AEW's "yin yang" chart). The Smith chart helps you to calculate the value of that cap or inductor (see ARRL article "An SWR-Shifting T" by Bill Conwell, K2PO).

According to the "W1FB's Antenna Notebook", if your operating point is below the horizontal line on the Smith chart (capacitive reactance), then the antenna is too short. If it's above the line (inductive reactance) the antenna is too long. To apply this rule, I

expect the antenna must be assessed at the feed point, without the influence of a length of transmission line.

Some Interesting results

In testing with the NANO, I learned that I could adjust several physical aspects of the welding rod antenna which affect the impedance of the system, and move toward the target impedance, 50 ohms. The two most effective are:

- 1) Changing the depth of the rod in the ground and,
- 2) Changing the height at which the radials are connected (alligator clip) along the length of the rod.

For the 17m wire, increasing the welding rod depth into the ground increased the capacitance of the system on the Smith chart, and decreased the resistance (Figure 5). But then I noticed a dramatic change in this behavior, depending on whether or not ground radials are connected. Without radials, the rod depth (push in) changed resistance with almost no change in reactance (moving almost horizontally on the chart). With radials, the rod depth changed reactance, with nearly constant resistance (moving almost vertically, and even crossing the resistance axis).

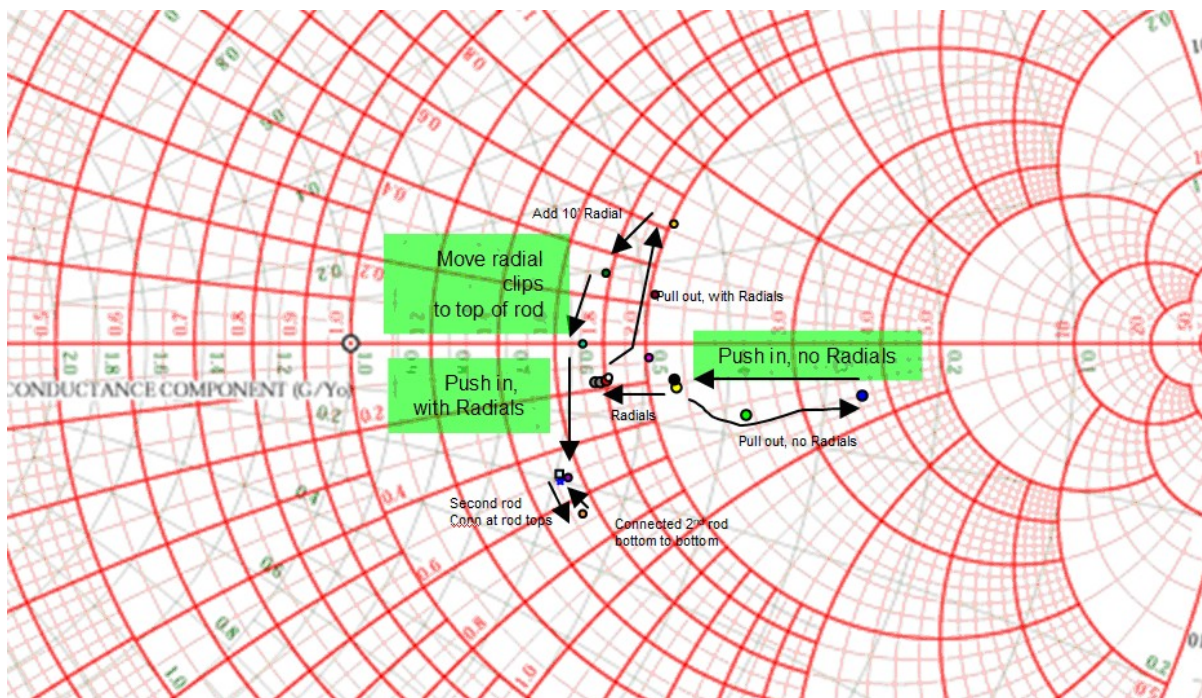


Figure 5 Some of the configuration changes for the difficult 17m wire.

These tests were performed on the 17m wire, which, as you can see, could resonate (zero reactance) but not at 50 ohms. The adjustability of the antenna design allowed for enough control of the reactance to reach the resistance axis, but at a resistance that was always too high to reach the prime center. Adding radials reduced resistance, with a screen being the ultimate. I tested a screen with the 17m wire, but it was disappointing; there was very little difference. I was curious to see how the capacitance changed as a function of the rod depth, and this is shown in Figure 6.

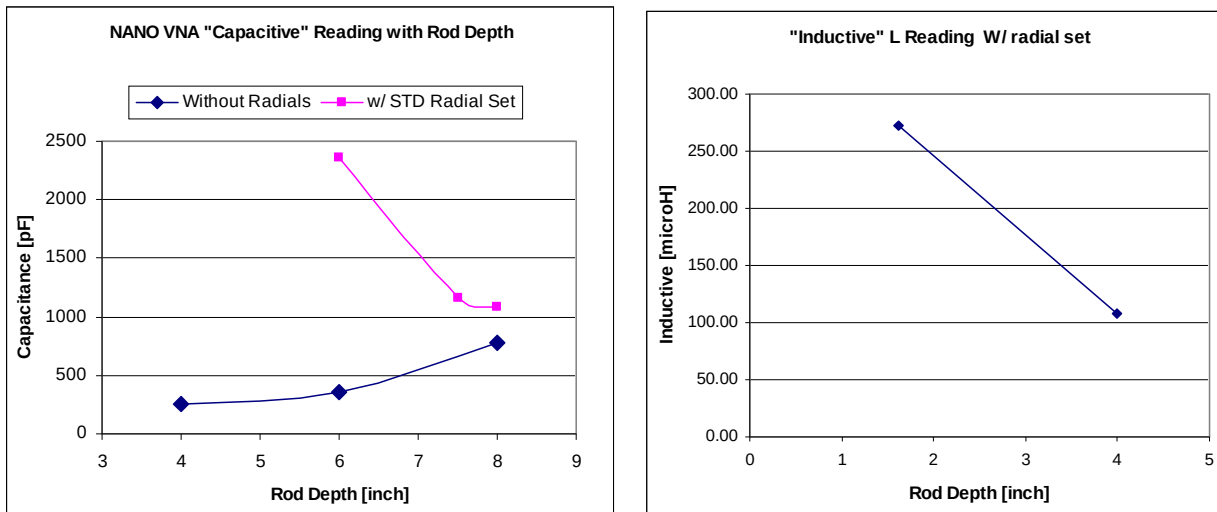


Figure 6 Measured capacitance changes due to welding rod depth.

Ground radials

Both the 40 meter wire and 20m wire tuned much better with ground radials. The effect seemed to add capacitance for the 20m case, and inductance for the 40m wire. This is likely due to the rotation of the data on the Smith chart from the length of the (same) transmission line in wavelengths being different for the two bands.

Eight radials, each about 46 inches long were used. The ARRL antenna book contains a plot (chapt 3 figure 14 in my 20th edition) describing the benefits of radial length, versus the number of radials. The plot discourages longer radials unless a large number of them are used. In the case of less than 16 radials, don't bother making them much more than about 0.03 (only 3%) of a wavelength long. There is a "diminishing returns" effect for adding length, when there are a small numbers of radials. But the predicted performance is dramatically improved for large numbers of radials (and in the limit, a screen). For 512 radials, you get improvements as you extend radial lengths until you reach about 0.45 of a wavelength. Why should this make sense? I think of the distance between spokes in a bicycle wheel becoming greater as you approach the rim. Since you're trying to pick up current induced in the ground, near the rim, the current has to travel (in the ground) longer to reach a spoke (radial), and ground-resistance dissipates more of the energy.

In my experimental antenna, the radials converge at a standard terminal strip, which is in turn, connected with an alligator-clip jumper to connect at the welding rod (we saw in Figure 2). The height along the rod at which the connection is made affects the tune, and tends to move the dip in SWR to higher frequency the higher the clip is place on the rod. This effect is surprisingly strong, and very handy for tuning. The adjustability afforded by the clip-height is shown in Figure 7 on the 40m band, as tested using the NANO VNA.

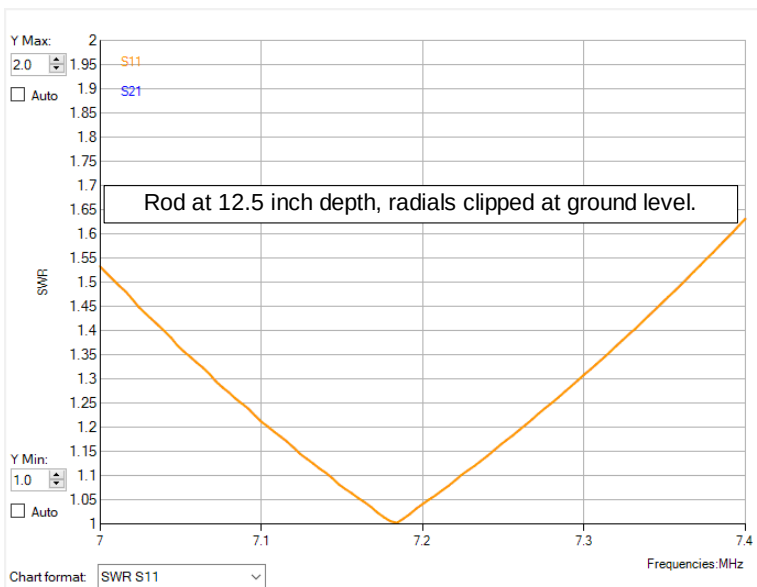
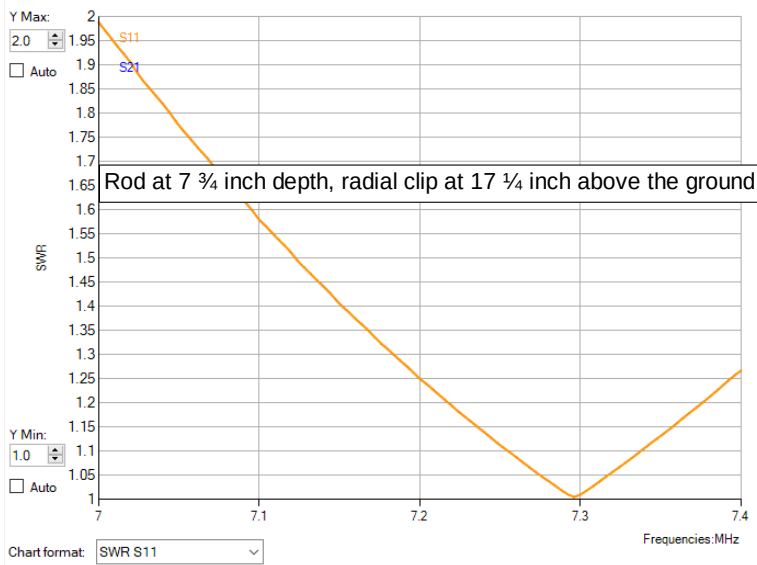


Figure 7 Frequency range for the 40m wire, accomplished by adjusting rod depth and radial clip height

Asymmetry in a ground radial pattern has been deemed an acceptable compromise on practical vertical antennas due to obstructions and space available (and some limited directivity), but I found that spreading them out evenly is best to get the greatest reduction in impedance shown on the Smith chart. Both the 20m and 40m antennas benefited when I added one additional, long (10ft) radial. A quick test of adding a 1/4 inch 3ft by 5ft galvanized steel fence mesh disappointingly produced almost no improvement when placed apart from, or over the ground radials.

Other effects

The amount of moisture in the ground seems to affect the conductivity of the rod, and hence tuning of the system. Moist turf works best. Dry earth can be difficult to penetrate more than 12 inches or so, and can prevent achieving a tune.

On the air

The tuned (non-reflector, 20m) antenna for about 14.245 MHz gave an SWR of 1.04. The SWR function built-into the QRP transceiver confirmed the match, and I responded to an SSB CQ from Payton Colorado (about 840 miles) on 14.244 MHz. My transmission was at the maximum power setting of 5 watts on SSB, and I received a signal report of 5 by 2. That station's quad certainly helped him hear me. I was seeing a high noise floor at my location. But in any case, this answered a question that I had about where the power was actually going, was it radiated, or going someplace else. I concluded that at least a good portion of the power was being radiated properly for that QSO to be possible.

**Steve
KN6HI**

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.

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 accommodate 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.

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.

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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 4th 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	updates	updates	Updates	Updates	Updates	Updates	Updates	Updates	Updates	Updates	Updates	updates
Board Meeting	31	Mar 7	28	25	23	FD	25	22	26	24	28	-
Special Events	Quartz-fest 17-23	Palm Springs Yuma		Visalia DX Canceled	Dayton Ham-vention	ARRL Field Day 25-27			SOARA Picnic 24	JOTA 16-18		SOARA Holiday Party TBA
Major HF Contests		ARRL DX-CW 20-21	ARRL DX-SSB 6-7 CQWPX SSB 27-28		CQWPX CW 29-30	ARRL Field Day 25-27			CQWW RTTY	CQWW SSB	CQWW SSB	
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 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.

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

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

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

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

Nets:

- 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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SOARA APPOINTMENTS

Past President: Tom Hobbs, AE6SH 949-830-8131
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Activities Coordinator: Joe Perrigou K7KCE
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