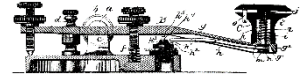




Bexar Wire

San Antonio Radio Club
W5SC



2020, No. 11 November 2020

ARRL Foundation Scholarship Winners

Congratulations to Jonathan Keiser, AG5SY and Sarah Keiser, AG5TJ, for being selected for scholarships from the ARRL Foundation. The notice appeared in the October issue of QST. Jonathan and Sarah are members of the San Antonio Radio Club and great examples of the next generation of Amateurs.



Jonathan Z. Keiser, AG5SY
The Bill Salerno, W2ONV, and Ann Salerno Memorial Scholarship

Sarah E. Keiser, AG5TJ
The Helen Laughlin AM Mode Memorial Scholarship

The Nano VNA

During the October, 2020, meeting Harold Fleischer, AE5AS, gave a presentation on the Nano Vector Network Analyzer, or VNA. He billed the device as a very, very small VNA. You can see Harold's presentation slides on the SARC web site. I'll just touch the high points in this article (Editor).

The November 12, 2020, meeting will be 7 PM on line via Zoom. Harold Fleischer, AE5AS will give a presentation on the variety of activities available to Amateurs

The key to getting our signals to radiate as much as possible is to match the 50 Ohm impedance at every point of the band on which we want to transmit. Because of the laws of physics, an antenna will only resonate on one frequency. The antenna can be kind of good on frequencies near its resonant frequency. Power losses begin to ramp up as the transmission frequency moves further away from the resonant frequency of the antenna. We learn this from our very first lessons to become a ham.

We determine the resonant frequency using various methods. The simple, and usual way is to use a standing wave ratio, or SWR, meter to measure the forward vs reflected signal. A more sophisticated tool is the antenna analyzer which permits sweeping the frequency of the band to see where the antenna resonates; as indicated by the lowest SWR reading. What we'd like is a 1:1 resonance. Then impedance consists of only resistance and it is equal to 50 Ohms. A reading of 2:1 on both sides of the resonant frequency is normally considered a reasonable situation for our antennas.

When resonance does not exist, the impedance consists of both resistance and reactance. Reactance is the net effect of inductance and capacitance. The internal antenna tuners on HF radios will normally handle SWR up to 3:1. External tuners will often handle up to 10:1 and try to match reactance to reduce the SWR as close as possible to 1:1. There will still be a loss of power output due to resistance, but if the SWR is 1:1 or close it will be minimal. Your signal will still get out.

(Continued on Page 8)

SAN ANTONIO RADIO CLUB
PRESIDENT'S RADIOGRAM

NUMBER	PRECEDENCE	HX	STATION OF ORIGIN	CHECK	PLACE OF ORIGIN	TIME FILED	DATE
11	R		N5YBG		San Antonio, TX		November
TO							

Hello SARC Members

It's already November. Our General Meeting is this coming Thursday at 7:00 pm. Remember this meeting will concern officer elections. Please make sure you have your current email on file with the Club Zoom invitation link.

To our men and women in uniform past, present and future; God bless you and thank you. Happy Veterans Day!


Remember Stay Home, Stay Safe and Get on the RADIO!

Good DX

Rosendo Guzman – N5YBG

Bexar Wire

Published monthly by:



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The due date for articles is the **Monday** before the first **Thursday** of the month.

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VE Team – Pat Knight AD5BR (reported by Presidet Rosendo Guzman, N5YBG)

Thanks to American Legion Post 300, Post Commander Steve Troudt KE5WYV, and Canteen Manager Cynthia Gilsinger, There was an outdoors VE session at Post 300’s covered pavilion. Six candidates earned their Technician license, three earned upgrades to General, and one earned the General license, not an upgrade.

Contact the VE team at hamtest@gmail.com to get on our waiting list for testing or with any questions.

Centennial Commemoration (Temporary) - Tom O’Brien, AB5XZ – Some cash is waiting to be handed over to the Treasurer. The committee is out of patch holders. Three items are waiting to go to storage: the banner, banner stands and tabletop sign holder.

Scholarship Committee – Tom O’Brien AB5XZ –no report

Nominating Committee – Alrady activated last month, elections next month. Report to N5YBG from Joe, W5AUQ,

President: Rosendo Guzman, N5YBG

Vice President: Lloyd KF5ZHW

Secretary: Jack Bannin N5JLB, has agreed to stay on.

Treasurer: Jeff Boyes, ND8B, has agreed to stay on.

Board of Directors: Richard Elder, WB5ACN

There were no further nominations by the club members present.. There will still need to be an official vote at the next meeting even though there are no opponents for any of the offices.

Old Business (Motions carried over from previous meetings) - None

New Business (Must be presented as a motion) - None

Announcements for The Good of Amateur Radio

- Jim Neff, WJ4M asked for member’s input with articles or ideas for the newsletter.
- The Sinton hamfest is cancelled.

Meeting Adjourned @ 8:07 PM.



Volunteer Examiners at Work

This is the November 2020 Bexar Wire report for the VE team.

Thank you

Thanks again to American Legion Post 300 and Post Commander Steve Troudt KE5WYV, we were able to hold a VE session outdoors under their covered pavilion October 24. Ten candidates earned Technician licenses, and two earned General upgrades. Congratulations!

Thank you to all the Volunteer Examiners and one assistant who helped.

Something new!

Our new hams' call signs and the two General upgrades were posted to the FCC's database on Monday after the Saturday session. ARRL allowed us to scan and upload the VE session paperwork to ARRL/VEC, and they were able to submit the information to the FCC on Monday. That was not only faster than priority mail, but it also allowed us to avoid possible USPS delays with all the ballots and other mail right now.

Next test session

We do not plan to have VE sessions in November or December. We will try to arrange VE sessions for 2021, but anticipate that our usual library location will still not be available for a while due to COVID-19 policies. Contact the VE team at hamtest@gmail.com to get on our waiting list for testing or with any questions.

Online testing

Some of you have wondered if we might offer online remote ham license testing. We were able to administer 20 traditional in-person ham exams to 15 candidates in about 2.5 hours at the last session. With the current online testing policies, we could have spent 10 to 20 hours administering those exams to one candidate at a time remotely (online). We have not thought that to be the most effective use of our Volunteer Examiners' time, but that may change.

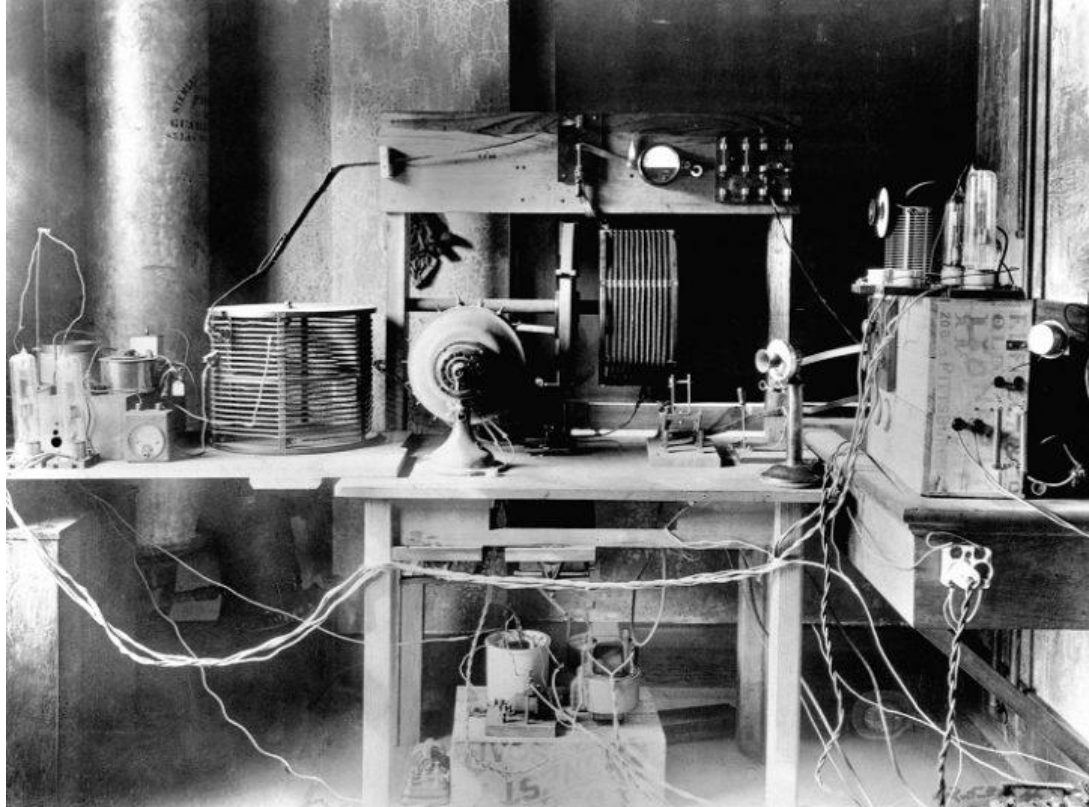
73,
Pat Knight AD5BR
210-273-5927 iPhone

It's time to respond to the FCC proposed new FEES.

Join your fellow hams and the ARRL in informing the FCC that ham radio does not need or want the new proposed fees.

Here are some of the reasons:

- a. The Amateur Radio Service is composed of uncompensated licensees that through direct and indirect means provides community support communications and is, hence, worthy of exemption from application, renewal, and related fees.
- b. The Amateur Radio Service is almost free when it comes to incremental costs incurred by the Commission to administer the Amateur Radio Service and the NPRM fails to justify the "nominal application fee of \$50" with any cost analysis.
- c. The finding and recommendation for this docket when it comes to the Amateur Radio Service is one of no change and continued exemption from application and related fees.



Conrad's amateur station was highlighted in the September 1920 issue of QST magazine two months prior to KDKA's "big broadcast." The microphone — a candlestick telephone "transmitter" — and other components of his radiotelephone transmitter are visible. (Getty images)

From the President, Topic: SARC Meetings

Time: 07:00 PM Central Time (US and Canada)

Every month on the Second Thu, until Nov 12, 2020, 5 occurrence(s)

Sep 10, 2020 07:00 PM

Oct 8, 2020 07:00 PM

Nov 12, 2020 07:00 PM

Please download and import the following iCalendar (.ics) files to your calendar system.

Monthly: https://us02web.zoom.us/meeting/tZcucOgrqzkqHNYImPtjJoDpvEyccKGF92Hm/ics?icsToken=98tyKuGrrTwpGdGXsB-FRpwqA4_Cb-nwmHpfqo1ktRLVFyp5bSfmIMdbMbFUN_6J

Join Zoom Meeting

<https://us02web.zoom.us/j/83373352062?pwd=MUx2RmsrUjZ2TGNoeVZMSkZCY2ZQZz09>

The NanoVNA (Continued from Page 1)



Antennas are often constructed to cover multiple Amateur radio bands, often a major part of the whole permitted amateur spectrum. For those antennas, the plotting of SWR or resonance on multiple bands can be a tedious exercise of checking and plotting the SWR at multiple points across the band.

A VNA can be set to sweep a whole amateur radio band at one time to collect SWR and related values that are presented as a graph. You can also set it to a single frequency and read the results. That eliminates manual collection of data points and graphing.

VNAs have existed in laboratories for a long time, but they cost thousands of dollars. Over the past several years VNAs have increasingly appeared in the Amateur Radio world.

In 2017, David Finell, N7LRY, gave a presentation on the Deepak K9101S VNA that he used in his antenna design work. He considered it a practical acquisition at \$900.

MFJ offers several VNAs that cost between \$300 and \$400 depending on bands and features.

Comet offers the CAA-500 Mark II for about \$400.

RigExpert offers several VNAs from \$300 to over \$1000

Enter the Nano VNA. Nano VNA comes from China. It is open source hardware and open source software so anyone can build it

or improve on it. The original creator was edy555. There is a related open source software package called NanoVNA Saver for Windows 10 that lets data be downloaded to a PC and analyzed there.

There are multiple versions of NanoVNA. Harold's presentation listed 5 different versions with different features and frequency coverage ability. His personal VNA is the NanoVNA-H which covers 50KHz-900MHz, has a 2.8" screen and operates on a 650mAh battery. That is what the remainder of the presentation was about.

What does the NanoVNA do?

- Measures input voltage I/Q signal, reflected voltage I/Q signal, pass voltage I/ signal
- Calculates reflection coefficients S11
- Transmission coefficient S21
- Calculates and displays: return loss, phase, complex impedance, resistance, does Smith Charts and shows SWR.
- It also has a Time Domain Reflectometer function.

That's a lot for such a small package.

Those who have compared NanoVNA with other, commercial, Ham VNAs say the results are acceptably close. Harold listed a lot of other technical information on outputs and calibration of the device. You can see that on the presentation slides.

The NanoVNA Saver software seems a must-have.

- It is open source and written by someone other than the original NanoVNA developer.
- It interfaces with the NanoVNA and lets you operate it and download data to a bigger screen for analysis. That is a big advantage over the tiny screen on the small device.
- You can calibrate the NanoVNA from the NanoVNA Saver software.

- d. You have multiple sweep options including averages of multiple sweeps.
- e. You have multiple display options including up to 6 graphs.
- f. You can control the colors.
- g. You can save data sets for future analysis.

Harold offers a few cautions too:

- a. It is very, very small. That is why it is named "Nano." The screen is jammed packed with very, very small type
- b. Everything is open source, hardware, software, analysis program and documentation.
- c. Documentation is weak in many respects.
- d. Support is Groups.io.

So why did Harold decide to get the NanoVNA?

- a. It covers the ham bands
- b. It is inexpensive
- c. Accuracy is acceptable for most ham work
- d. You can export data from the device to a computer.

The NanoVNA is a useful tool at a reasonable cost for a serious amateur. The device is available on line from various vendors, including Gigaparts, and likely Amazon.

Silent Key Committee (From web master, Bill Craft, KD2HIQ)

The web site now has a silent key page [<https://w5sc.org/silent-key/>] that provides information about thinking ahead and providing forms to document what you have.

SARC does not directly buy any SK equipment, we provide a service to help loved ones dispose of equipment. The service consists of information, consulting and possibly disposal of equipment by donation.

We encourage you to plan ahead and make those hard decisions ahead of time so those who are left don't end up dumping your equipment in the trash. Not everyone plans ahead, most us try to ignore the fact that at some point our health may fail or we may be called to meet our maker.

The goal is to help fellow hams and their families deal with this in their time of need. They do not have to be members of SARC for us to help. We offer our services to the ham community to benefit other hams and their families.

The committee can be reached by emailing SilentKey@w5sc.org

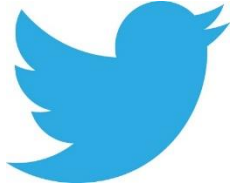


SARC has had a Groups.io. Its name is saradioclub.

The saradioclub Group.io is being used to publicize SARC business meetings. It can be used for other things like promotion of VEC testing and classes. Members of the saradioclub Group.io can and have asked each other technical questions or sought assistance.

The saradioclub Group.io is a closed group. To become a member, go to saradioclub.groups.io. (You may need to have a Groups.io account.) You will then need to select *Apply for membership in this group*. This generates a message. SARC members can expect approval to join the saradioclub Group.io in probably less than 24 hours.

SARC Tweets



Reminder: there are two active Twitter accounts for the San Antonio Radio Club. They are @SARadioClub and @ARadioFiesta.

The @SARadioClub is being used to publicize SARC meetings. It can be used for other things like promotion of VEC testing and classes.

When work again commences the @ARadioFiesta will be used.

SARC members are encouraged to follow both Twitter accounts.

SARC Facebook



There is a San Antonio Radio Club – SARC (@saradioclub) Facebook Page.

The newsletter editor is making posts about SARC meetings and other activities. Any Officer, Committee Chairperson, or member who believes that they have information that should be posted to this page should contact the newsletter editor using the contact information for the newsletter editor on page 2 of this newsletter.

SARC members are encouraged to follow this Facebook Page

SARC SLACK



There is a San Antonio Radio Club Slack team – w5sc.slack.com.

Slack teams are meant to foster communication between team members. Paul Guido, N5IUT, has established the w5sc.slack.com team for SARC. He has also established some channels. Think of the channels as topical areas.

To join send an email to Paul Guido, N5IUT, at radioteacher@gmail.com. In actuality, any team member already a part of the w5sc.slack.com can invite

you, but Paul is known to be on it.

SARC has a website:

w5sc.org

Webmaster: Bill Craft KD2HIQ
Billc851@gmail.com
210-233-8863

Amateur Radio License Classes

For more information, contact:
David Finell, N7LRY
Instructor

SARC Meeting Dates for 2020

- January 9, 2020
- February 13, 2020
- March 12, 2020
- April 9, 2020 **Cancelled, Zoom meeting on line instead at 7 PM. Check E-mail**
- May 14, 2020 **Via Zoom on-line.**
- June 11, 2020
- July 9, 2020 **(Via Zoom)**
- August 13, 2020
- September 10, 2020
- October 8, 2020
- November 12, **2020 Zoom meeting**
- December – No meeting

Meetings are normally held at Blanco BBQ, 13259 Blanco Rd, San Antonio, TX 78216 at 7:00 p. m. Room is available at 6:00 p. m. for supper. In-person meetings have been suspended pending the virus.

License Testing Dates for 2020

Go to Hamtest@gmail.com if you want to schedule a test.

Times and locations along with required document information can be found on SARC's website.

SARC does all of its licensing testing as a part of ARRL Volunteer Examiner Coordinator (VEC) organization so all of the Volunteer Examiners in SARC are duly authorized Volunteer Examiners of ARRL's VEC.

Emergency Communications

If you are interested in emergency communications, contact:
JC Smith N5RXS

JOTA

Boy Scout Jamboree On The Air

Cancelled for 2020

Radio Fiesta 2021

January , 2021
Sadly Radio Fiesta 2021 has been cancelled due to Covid-19

Field Day 2021

(Pending)

Where SARC proves they are an eating group with a radio problem.