

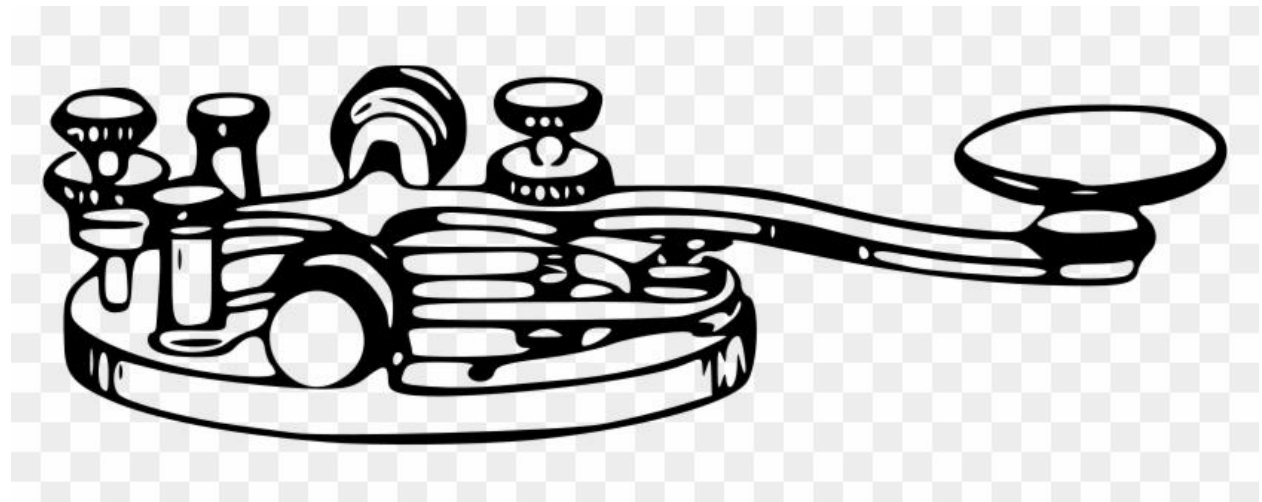


QSA-5

Marin Amateur Radio Society Monthly Newsletter

Established 1933

April, 2022



When all else fails, you can count on Amateur Radio

From Our President:

I have for a long time been interested in the calendar and you have suffered through these monthly essays have heard me go on and on about the changing of the seasons. A little over a week ago we experienced the vernal equinox which we recon as the first day of spring. Certainly, as I write this it looks and feels like spring. It also feels like spring in that our public service season is underway. Outdoor meetings of the Marin County 2 Meter Critical Mass have restarted. We are conversing with the Redwood Empire DX Association for our combined Field Day at the Marin Rod and Gun Club. Covid case rates remain low in our area and mask and vaccination requirements are being eased or removed all over. In short things are looking up. To quote Jack Yellen "the skies above are clear again, so let's sing a song of cheer again". Those of you of a certain age know the rest of the lyrics.

Friday 1 April is our next meeting and as we have been doing the meeting will be a hybrid with some meeting in the club house and some on zoom. Currently the county does not require us to be masked and the club house rules match whatever the county rules are. I will be wearing one because I am on an immunosuppressant, and it makes me feel better to remain masked. Your choice is up to you, and I support it.

I am here to ask for help. I mentioned that we are going to do an in-person Field Day with REDXA this summer as we have in the past. I am looking for a field day coordinator from our club. The work is light, requiring you to meet with REDXA a couple of times to make sure we are all on the same page. If you are interested let me know at wa6uds@w6sg.net. This is not an obligation to work or set up the event, just to stay in touch with both and I will be available for any help you might need.

I have another request. We started opening the club house up on Sunday mornings back in February, however attendance has been essentially zero. Ok perhaps not exactly zero but at the noise floor. This was a great institution in the past, and perhaps attendance has been low because we have not publicized it or perhaps because people aren't yet ready venture back into the club house. I don't want to discourage anyone but asking someone to open the club house and sit by themselves is bit much. So I am looking for your feedback. Please let me know if you are considering going. Let me know your thoughts. Maybe as we move into

summer, or once a month rather than every week would be better. Again, drop me an email at wa6uds@w6sg.net

73 de wa6uds

From the Editor:

Spring is here and with-it warmer weather. With life returning to normal and the summer ahead of us, better times are appearing on the horizon. Of course, we've become used to sudden change over the last few years and cannot claim with absolute accuracy that something won't happen beyond our control. However, we got through the last few years and will face whatever comes our way in stride.

Regarding this publication, we'll be making some changes to the content over the next few months, based on reader input. This month's issue will appear somewhat sparse compared to previous issues due to those changes and some general editorial house cleaning. Also, note that we will no longer be providing the minutes from the general meeting due to a change in club policy regarding taking general meeting notes.

As always, we welcome your input regarding items of interest you want to see within the pages of the QSA-5. If you want to write an article on a specific subject, let the QSA-5 know and we will include it in our publication. In the end, what appears within the publication's pages is up to you. I do want to take a moment to thank everyone who has emailed the QSA-5 with suggestions and ideas. Your assistance has made my job much easier. Keep those emails coming!

QSA-5Editor@w6sg.net



New Members:

Brian Jolda KA1MLN - Mill Valley
Mike Wood KN6SVK - Corte Madera

Next General Meeting: April 1st, 2022



“Your parents hath given you a name. And the FCC hath given you another...”

Marin Amateur Radio Society Board of Directors

Meeting March 10th 2022

President: Curtis Ardourel WA6UDS (1) **Director:** Skip Fedanzo KJ6ARL (2)
Director: Brian Cooley K6EZX (1) **Treasurer:** Bruce Bartel N6VLB (1)
Vice President: Tom Jordan KG6TCM (2) **Director:** Mark Klein KM6AOW (1)
Director: Ken Brownfield AB6JR (2)
Trustee K6GWE: Doug Slusher KF6AKU
Trustee W6SG: Mitch Martin WU1Q

Adopt agenda: No Additions M/S/A

Approve minutes: of 10th of February

Secretary's Report/Communications: Brian K6EZX proposed we de-collide the PS meetings coming up on 6/19 and 10/13 that would overlap with board meetings. It was decided to do so by moving board meetings later to 8:00p on those two nights.

Treasurer's Report: In QSA-5.

Committee and other Reports:

1. **Membership** – 112 | 72%
2. **Education:** Still looking for/recruiting an outside person to run the education efforts, which we believe are primarily license test oriented for now but could expand to broader topics later. **Rob NZ6J** suggested that we don't have a need for license Education as there are many good ham crams that fill the need. Skip KJ6ARL suggested we look at a broader scope of Education beyond the test-

taking mission. A general discussion ensued that supported the idea that our education efforts should focus on topics that may inspire younger members to get interested and join.

3. **Facilities:** Rob reported that some of the junk radio gear is still on site in the clubhouse, but a trip to the e-recycling center is imminent. Rob will also get back to work on some water diversion work he's leading doing on the back side of the lot. Another pile of junk (different from the radios inside the club) is in the back garage area of the clubhouse and needs to be dealt with. Curtis noted that not all of it is necessarily junk and should be sorted first, much as we did with the radios inside the club for our previous gear auctions. Skip proposed 3/18 as a sorting day at 10am and several board members agreed to come help separate valuable gear from junk that day. Skip reported that he has a meeting with Armando Chan of [Chan Drainage](#) to investigate the back drainage project at 1:00p next Tues.
4. **Public Service: Rob NZ6J** reported that the Jane Fondo this weekend is ready to launch the PS season. Rob also brought up the request to purchase a ~\$1,050, 55" monitor to mount on the side of the van for various infographic purposes during events. Brian described the monitor and explained why it's about twice the price of a garden variety TV. Skip asked if mounting such a display on the side of the van is going to cause a lot of local QRM around net control. **Tom KG6TCM** moved that we authorize the purchase, which was M/S/A by unanimous show of hands. Follow up on mounting equipment will be pending. Tom also suggested we set up some sandwich boards that explain our basic presence at PS events to reduce the public curiosity traffic that our van and this shiny new monitor will generate.
5. **Technical: Milt KM6ASI** reported that we have a new 440.925 +162.2 pair on SR Hill giving us a total of 3 new UHF repeaters recently activated. Milt will handle the coordination of those with NARCC in the near future. **Doug KF6AKU** reports that the machine on Tam West will soon be swapped out with equipment that is ready to go and do a more stable job at that site than the current machine which has been touchy about maintaining its power level,

sometimes spiking to levels that cause interference complaints from operators of a machine in Daly City. Doug reported that we have documentation that our repeater predates that operator's equipment and that ours has a history of public service and public safety usage that should bolster any challenge to our use. **Steve KB6HOH** reported that the remote receive antenna on Tam West has been working out well for getting more Sunday morning check-ins from as far away as Alviso to the south and well up to the north. A discussion ensued about some of the possibilities that could explain noise that we have detected lately on the VHF simulcast, especially during the Tues ACS/RACES nets. Further detection and analysis will continue to determine if this is spurious noise or intentional jamming.

6. **VOAD/RCV: Skip KJ6ARL** reported that the next RCV field test is this weekend to see if UHF simplex can work from San Geronimo Community Center into San Rafael using a new Yagi antenna, including sussing out whatever relay stations might be necessary.

Milt KM6ASI left the meeting at 21:17

7. **VE Testing:** Ken AB6JR reported that April 9 is the next VE session. 9 people are signed up.
8. **NBAM:** Sites continue to be added for mesh, according to **Rob NZ6J**. **Doug KF6AKU** asked about the nature of the sites, and Rob described several of the locations.

Old Business:

1. Frequency coordination: N/A
2. Drainage: Covered above in Facilities.

New Business:

1. Gratuity for Esther Lee 50 lunches for \$850: We gave her a 20% gratuity last year and after a small amount of discussion it was decided to repeat that

gratuity amount again this year in the amount of \$170. M/S/A by show of hands. **Bruce N6VLB** will cut a check.

2. Field Day: Curtis reported that he recently received an email from Ron Castro informing him that [REDXA](#) (Redwood Empire DX Association) is going ahead with Field Day again this year at the Marin Rod & Gun Club the third weekend in June. Curtis asked the board to formally discuss and decide our involvement. Tom spoke in strong support of MARS being involved with Field Day. Absent a motion **not** to take part, it was agreed that we will do so as we have many years in the past. **Bruce N6VLB** will be ready to cut a check for the amount needed to register the club to take part and Brian will look into getting an insurance cert issued to MRGC from MARS' insurance agency tomorrow.
3. Monitor for comm truck: Covered above in Public Service.
4. Updating repeaters on the website: The W6SG.net site currently displays:

1	146.700 MHz	PL 203.5	Minus Offset	Bahia Ridge (Novato)	Linked – Simulcast System Tx/Rx	MARS
2	146.700 MHz	PL 179.9	Minus Offset	Mt. Tamalpais (East Peak)	Linked – Simulcast System Tx/Rx	MARS
3	146.700 MHz	PL 167.9	Minus Offset	Mt. Barnabe (Lagunitas)	Linked – Simulcast System Tx/Rx	MARS
4	146.700 MHz	PL 192.8	Minus Offset	Mt. Tamalpais (West Peak)	Linked – Simulcast System Rx	MARS
5	147.330 MHz	PL 192.8	Plus Offset	Mt. Tamalpais (Middle Peak)	Stand-Alone Repeater	MARS
6	443.250 MHz	PL 179.9	Plus Offset	Mt. Tamalpais (Middle Peak)	Stand-Alone Repeater	MARS
7	442.175 MHz	PL 162.2	Plus Offset	San Rafael Hill	Stand-Alone Repeater	RCV
8	442.175 MHz	PL 156.7	Plus Offset	Big Rock	Stand-Alone Repeater	RCV

Curtis asked what additional changes, aside from the below, need to be reflected on the site:

- a. Change 7 to 440.925
- b. Add Mt Barnabe 444.125 + 151.4 (RCV)

Skip asked if the above machines that are **not** ours (misnomered above as “RCV”) should be removed from the [MARS Repeaters page](#) and to a list of [other repeaters](#). section. **Steve KB6HOH** noted that the Sunday morning net script acknowledges outside repeaters that we use but that they are not owned and operated by MARS. Skip asked that the RCV machines on the list actually be labeled as **MAECU** (Marin Amateur Emergency Communication Unit) administered machines.

Doug reported that a member asked him to come to the clubhouse to open it up last Sunday since the board recently told the membership that Babble Study is back in effect. However, the board seems to have failed to establish a method to open up for said meetings or to publicize clear instructions on how to close it down after a meeting. A Sunday morning Babble Study online “host” signup roster was discussed. In the short term we decided:

- This Sunday either **Michael K6MLF** or **Rob NZ6J** will open the club at 10am.
- Skip and Rob will work on the longer-term plan to set up a duty roster for Babble Study hosts for a mid-term solution.
- Longer term **Brian K6EZX** suggested we expand the use of our current key tag access system to “communitize” Sunday morning access rather than deputizing a roster of volunteer door persons that will always need management and cajoling.

Good of the Order: **Steve KB6HOH** asked if we will have a club picnic this year and it was decided only to start looking into the status of the Corte Madera Parks & Rec dept. later in the year.

Executive Session: N/A

Adjourn: M/S/A

B. Cooley

Next Regular Meeting 1 April 2022

Next Board Meeting 14 April 2022

**Marin Amateur Radio Club
Balance Sheet Comparison
As of March 30, 2022**

	TOTAL AS OF MAR 30, 2022,	AS OF MAR 30,
2021 (PY)		
ASSETS		
Current Assets		
Bank Accounts		
Accounting services	240.00	
Auction	-221.50	
B of A Building account - 8795	7,034.95	3,022.36
B of A General account - 4328	5,937.73	11,583.80
CD	25,000.00	25,000.00
Money Market	5,000.00	5,000.00
Public Service	1,766.02	
Skip Fedanzo	81.84	
Web Services	618.72	
Total Bank Accounts	\$45,457.76	\$44,606.16
Total Current Assets	\$45,457.76	\$44,606.16
Fixed Assets		
club house- 27 Shell Rd. MV	58,983.00	58,983.00
Total Fixed Assets	\$58,983.00	\$58,983.00
TOTAL ASSETS	\$104,440.76	\$103,589.16
LIABILITIES AND EQUITY		
Liabilities		
Total Liabilities		
Equity		
Opening Balance Net Assets	124,400.00	124,400.00
Retained Earnings	-21,103.53	-22,636.76
Net Income	1,144.29	1,825.92
Total Equity	\$104,440.76	\$103,589.16
TOTAL LIABILITIES AND EQUITY	\$104,440.76	\$103,589.16

**Marin Amateur Radio Club
Profit and Loss
January 1 - March 30, 2022**

TOTAL	JAN 1 - MAR 30, 2022,	JAN 1 - MAR 30, 2021
(PY YTD)		
Income		
Donations	100.00	22.36
Dues	6,240.00	5,073.69
Rent	7,600.00	7,375.00
Sales of Product Income	24.69	
Total Income	\$13,964.69	\$12,471.05
GROSS PROFIT	\$13,964.69	\$12,471.05
Expenses		
Car & Truck	54.49	648.09
Equipment	< \$2,500	322.79
Field day	350.00	
Food	850.00	
Garbage	143.52	141.42
Insurance	3,301.00	
Meals	170.00	
Reimbursable Expenses	2,162.76	
Rent & Lease		150.00
Repair & Maintenance	885.00	951.86
Repairs & Maintenance		546.34
Repeater		-177.27
Taxes & Licenses	3,925.64	4,000.56
Telephone		93.24
Utilities	827.95	3,829.30
VE Session	0.00	

Water	150.04	138.80
Total Expenses	\$12,820.40	\$10,645.13
NET OPERATING INCOME	\$1,144.29	\$1,825.92
NET INCOME	\$1,144.29	\$1,825.92

Cash Basis Wednesday, March 30, 2022, 11:56 PM GMT-07:00 1/1

Questions and Answers

This section of our publication is dedicated to any questions you have. If there is something you need or a problem you cannot solve, this is the place to seek assistance. Who provides the answers? Readers of the QSA-5 publication! Since we have not received any new questions this month, we are repeating last month's question:

This question was not directly sent to the QSA-5 Question and Answer section of the newsletter, I believe that the subject matter warrants our attention. This is the email I received from Steve & Melanie Kramme KD6KXT & KD6KXS:

Hello, my wife and I are licensed HAMs in Novato and have not been on the air due to location and HOA issues. We would, however, like to install a VHF / UHF radio into our truck camper. I am seeking advice regarding which brand and features that they have that would best fill the needs of our local area and when camping. I contacted you in hopes that you could put me in touch with someone in the club that could answer my questions. I was thinking maybe meeting someplace for coffee. Some time ago I attended meetings in Mill Valley, but my membership has lapsed. I know that with COVID concerns there may still not be any in person club meetings.

You can reach them via email at: skramme@gmail.com

Here are some links to get you started regarding an antenna mount for your rig and vehicle. Hopefully, some of our club members will follow up via email!

Here's a link to the Radio Reference website's forum page that discusses this question:

<https://forums.radioreference.com/threads/best-place-to-mount-dual-band-antenna-on-pickup-truck.324814/>

Here is a page dedicated to mobile antenna mounting from Comet Antenna:

<https://cometantenna.com/land-mobile/no-holes-mobile-mount/mobile-mount-faqs/>

This final link comes from KV5R and is nicely detailed and explains the subject clearly.

<https://kv5r.com/ham-radio/mobile-antenna-placement/>

LIFE IS SIMPLE



Marin Amateur Radio Society News

March Jane Fondo Bicycle Race

Runner and cyclists participating in races, as well as those who cheer them on, seldom consider the complex infrastructure behind the scenes. We have all see the volunteers that hand out water to thirsty runners and cyclists. However, a crucial service needed for a successful race is communication! On March 12th, 2022, the Marin Amateur Radio Club teamed up with race organizers to provide communication along the cycling route.

The Jane Fondo Women-only Fundraising Race was a seven-hour race held on the 12th of March through Western Marin County. Route options included 25-, 40- and 75-miles distances. The event was hosted by the MCBC. Here are some photographs from this event.















MARS Special Event: Presentation and Picnic

This is a repeat from last month but certainly deserves an extra month within our pages! On Saturday, February 19th, 2022, the Marin Amateur Radio Society held a presentation and picnic. Here are some photographs from the event for those who missed it. Thank you to Marilyn Bagshaw for the photographs and your great work with Public Service:







VOAD: When All Else Fails: Part Two

In last month's QSA-5, we introduced you to VOAD – Voluntary Organizations Active in Disasters – and the Radio Communications Volunteers (RCV) based out of Marin. This month, we'll look at what RCVs do when disaster strikes:

Most of the population take their cellphones and internet for granted. Cellphones

are always with us, always on and ready for use. People use their cellphones for everything for finance to social media postings. Business relies on cellular communication to take care of their day-to-day needs. We count on our cellphones for a variety of needs and for many, their cellphone is their lifeline. Most cellphone owners can provide a plethora of details regarding their cellphone's features, yet they have no idea how the infrastructure that supports those phones works. They also have no idea how easy it is for cellular service to fail. What does this have to do with radio operators and the RCV? When cellular and internet systems become inaccessible due to a disaster, radio is the last form of distance-based communication left standing.

The approximately fifteen RCV members are skilled and licensed radio operators who live within the county of Marin. They go through training and hold monthly field exercises to hone their skills. The RCVs operate in the VHF and UHF bands. Each RCV operator is paired with a local agency, such as a food bank, and are responsible for ensuring that agency has communications capabilities during an event or disaster. The RCV operator's job is to ensure that their agency can communicate during an emergency. What kinds of emergencies do they face?

When you hear the word disaster, your first thought might be an earthquake or wildfire. While these certainly qualify as disaster scenarios, there are really two types of situations RCV members deal with: No Notice Events and With Notice Events. An example of an NNE or No Notice Event would be an earthquake. An example of a WNE or With Notice Event would be a planned power outage by a utility company to do major repairs to a power infrastructure. Each has its own set of issues and solutions.

An NNE (No Notice Event) such as an earthquake create serious problems across the board. Each RCV first ensures his or her family is taken care of. Then, the RCV operator checks in with their assigned radio net, such as the MARS net. Next, they must find their way to their agency's location. This can be difficult because the normal road system used to get to the agency's location may be damaged. Therefore, RCV operators plot multiple routes. If there is no way for the RCV operator to get to their assigned agency, the contact another member to determine whether they can find a pick-up point the RCV can walk to and then receive a ride from that member. The key to the process is to get to the agency site and ensure that agency can communicate.

The RCV program does not go into action immediately. RCV operators enter the situation 12 to 18 hours after an event. During an earthquake, for example, first responders would need to clear roads and take care of secondary events such as fires and injured individuals. However, this delay time doesn't mean that the RCV operator would be inactive in an emergency. The RCV operator would communicate with other operators on their assigned radio nets to send and receive updates. After the 12-to-18-hour window would they then go to their assigned agency location.

Like military training, RCV operators practice their skills in the field monthly. These exercises are designed to make sure their operating procedures work smoothly and if not, they fix the problems. The training exercises are critical because in an emergency, time works against those who respond to the situation. The first part of the exercise is to ensure that the lead operator can contact the RCVs at their agency locations. Roll call is taken, and the next test is run. The tests run the gauntlet from frequency and repeater tests to the use of various antennas. The point is to come up with every possible scenario the RCV operators may face and see how they fare. It's better have something go wrong during the tests than during an emergency!

There is so much to VOAD and the RCV program that we'll finish up this series of articles next month, when we'll look at the relationship between first responders and amateur radio operators. Here are some links to coverage of VOAD and the RCV program:

Marin enlists volunteer radio operators for emergency team

<https://www.marini.com/2021/11/01/marin-enlists-volunteer-radio-operators-for-emergency-team/>

News Release from Marin County

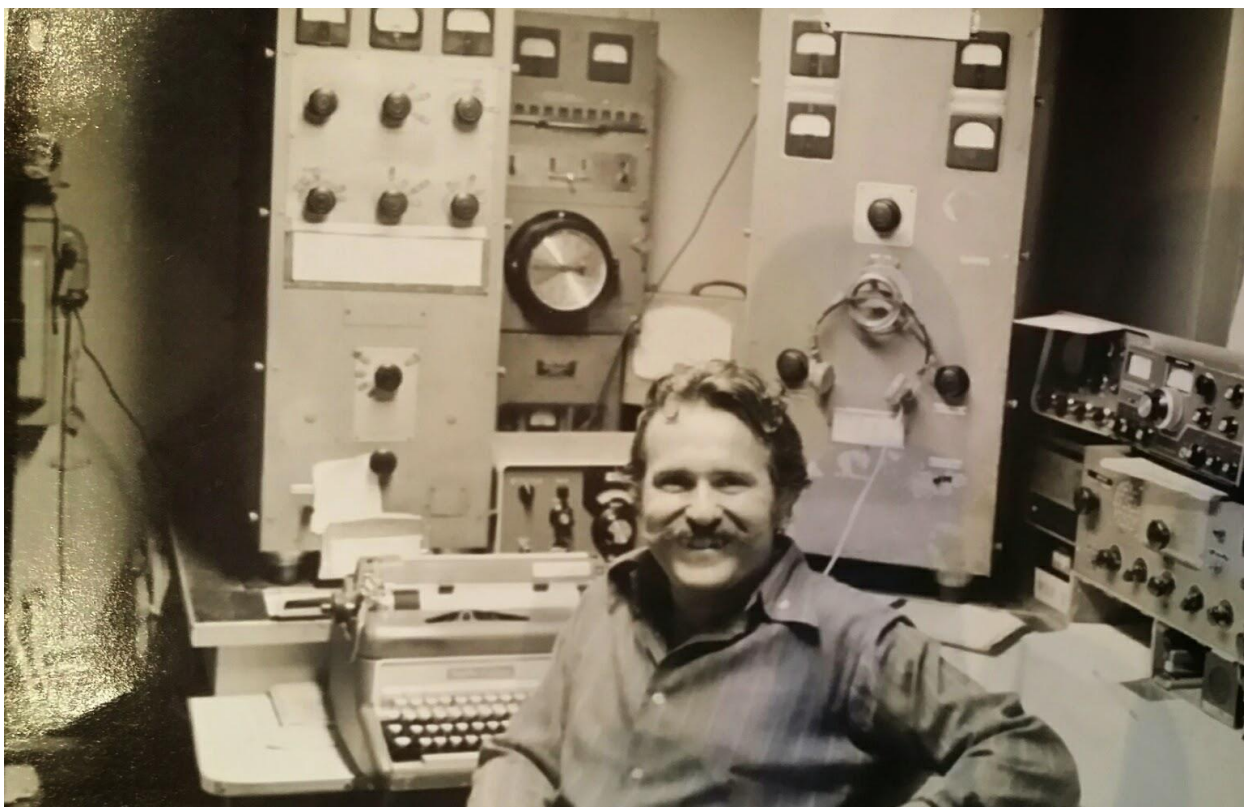
<https://www.marincounty.org/main/county-press-releases/press-releases/2021/dpw-volunteerradio-092121>

New Mirror Installed at the Clubhouse

This might seem like the QSA-5 is having a slow news month, but we can never get enough of the club's workbench! This is not a mirror in the traditional sense. This mirror is mounted on the back side of the primary work bench in our laboratory section of the clubhouse. Have you ever had to work on a large electronic device and find yourself constantly having to turn the device around to see its backside? If you had a mirror placed behind the device, you would be able to examine the opposite side without have to move the device around. This is a good idea for any electronics bench. Here are some photographs of the new mirror.







This last one is of Jan when he was a radio officer on a ship. We had to include this one since he is the King of the club's electronics lab!

ARRL Announcement

Curtis and Board Colleagues

At the request of our President, on Saturday December 4th, I participated in the ARRL Pacific Division meeting via Zoom. The meeting was chaired by Pacific Division Director, **Kristen McIntyre (K6WX)**. She introduced the new Assistant Director, **Anthony, W7XM**. The meeting opened with a recognition of members who became silent keys during the year. There was a total of 104 participants from all over the West Coast. The only attended that I personally knew was **Bill Smith (AB6MT)**. If Bill Hillendahl was there, I missed him.

The substance of the meeting opened with Kristen's report on the State of Ham Radio. She reported that the major issue is recruiting new members to the hobby. As I recall this was the lead issue at the last meeting I attended as well. The recruiting dilemma is how to appeal to younger people while still actively preserving the past. Recruiting young people will be essential to the hobby maintaining relevance. She thinks our stock with government agencies is in decline, particularly emergency services. The consequence will be increasing threats to spectrum preservation by the business sector. She noted that the ARRL's new magazine "On the Air" is proving more appealing to the masses as coffee table book as opposed to "QST" which is seen as most attractive to nerds. Popular outreach is going to be necessary to shore up the hobby.

Kristen is quite impressed with ARRL's new CEO, David Minster, NA2AA. She is convinced that he will be good for the organization and the hobby. The major problem at ARRL is staffing at the national headquarters in Connecticut. It is expensive to live there, and it is relatively remote. For example, ARRL computer development has slowed to a crawl due to thin staffing. There is only ½ full-time equivalent employee working on ARRL software and that person is devoted to Logbook of the World. Otherwise, the organization is relying on volunteers for development and maintenance. To expand the outreach of the organization, ARRL has changed its operating hours to be open later to serve the West Coast. This marks an apparent effort by ARRL to reach out and listen to the field more before acting and issuing policies. Bottom line is that she thinks the new CEO is taking the organization the right direction and she is optimistic.

The good news is that public gatherings will resume next year. Conventions up post COVID including the National Convention at Orlando and the Hamfest at Dayton. ARRL has also conducted an in-person Board meeting recently.

Politically there may be trouble on the horizon. The spectrum loss in the 3 GHZ region may be an indicator of things to come. ARRL recognizes this and they are prepared to spend money to defend the spectrum. Compounding the problem is that the FCC has been hard to get too due to COVID. They are only now returning to their offices. As a result, the license fee is set in concrete now due to the FCC's interpretation of the law. Therefore, ARRL will pay the license application fees for certain new young applicants. The ARRL has had to hire a lobbying firm to push through its latest revised version of the Parity Act (to minimize the restrictions in

CC&RS limiting amateur radio antennas in condominium complexes) through Congress.

ARRL is involved in a new significant project called the Public Clean Signal Initiative. They are building upon an earlier initiative in which the quality of receivers has been improved. They are now focused on working on transmitters that are non-linear. The goal is to get transmitters off the air that generate noise and garbage (such as harmonics) along with their signals. This will set new certification standards for manufacturers for clean transmitters. Noted ham gear tester Rob Sherwood is involved in this project. Their studies are discussed at Contest University.com. This project has enough traction that it is likely that their recommendations may be adopted by IEEE.

A new standing committee called the Emergency Communication Field Services Committee has been established in the ARRL organization. The role of this committee will be oversight of ARRL management of its emergency communications service support to hams and liaison to governmental agencies utilizing those services. This is in apparent response to the perception of decreasing relevance of amateur radio in this area.

The next portion of the meeting was entitled Q & A but was more an opportunity for the attendees to speak to matters they thought was important.

One question that was asked was about the adjustments made to the 220 MHz frequency band allocation. While the band has been expanded to 219 to 225 MHz, a couple of practitioners in that range noted that a portion was being carved out for digital only. They were seeking more guidance on that. It was the first that Kristen had heard about it and agreed to follow up. The take-away on this was that if you use that band, you should find out more about spectrum reservations.

Next was a discussion of emergency communications particularly to and within hospitals. A couple of ARES leads met with their hospital clients to talk about needs especially repeaters in hospitals to support HT use in hospitals when the power goes out. (I have some question about the legality of this). However, this discussion quickly morphed into the fact that hospitals generally state that their real need is for data communication for exchange of documents, not voice. It

became clear to all that the solution to this problem is a MESH network. This gave rise to a discussion of problems with use of amateur radio MESH in this environment. The first was the limited spectrum availability for amateurs in the 5 GHZ MESH bands. The second was passing HIPAA protected data unencrypted over amateur systems and encryption to protect it. This issue has apparently raised its head before when an FCC Commissioner raised the encryption issue on use of WINLINK and PACTOR for this purpose. Apparently, the FCC sees amateur radio encryption as a national security issue.

This discussion led to several discussions about MESH which is generally viewed as the wave of the future. For emergency services the capability of MESH to support voice communications with VOIP on desk phones has attracted much attention. Gateways utilizing TCP-IP and raspberry-pi computers were touted as being able to provide desk voice communication in emergencies easily and at relative low cost. Also, ARDN MESH in California is getting a number of new key partners such as CALFIRE and the DOD for emergency services. Again, encryption was identified as being a problem in this area as well.

The last substantive discussion was from the Inyo/Kern Section manager. They have a local Emergency Services Committee that includes all interested organizations from police and fire first responders to Red Cross and Salvation Army down to CERT leadership. Its mission is to identify needs and arrange for provision of services. The mission sounds much like the role of our EOC. The stated emphasis is to meet each served organization's needs rather than to try deciding for those agencies what their needs should be. Interesting concept.

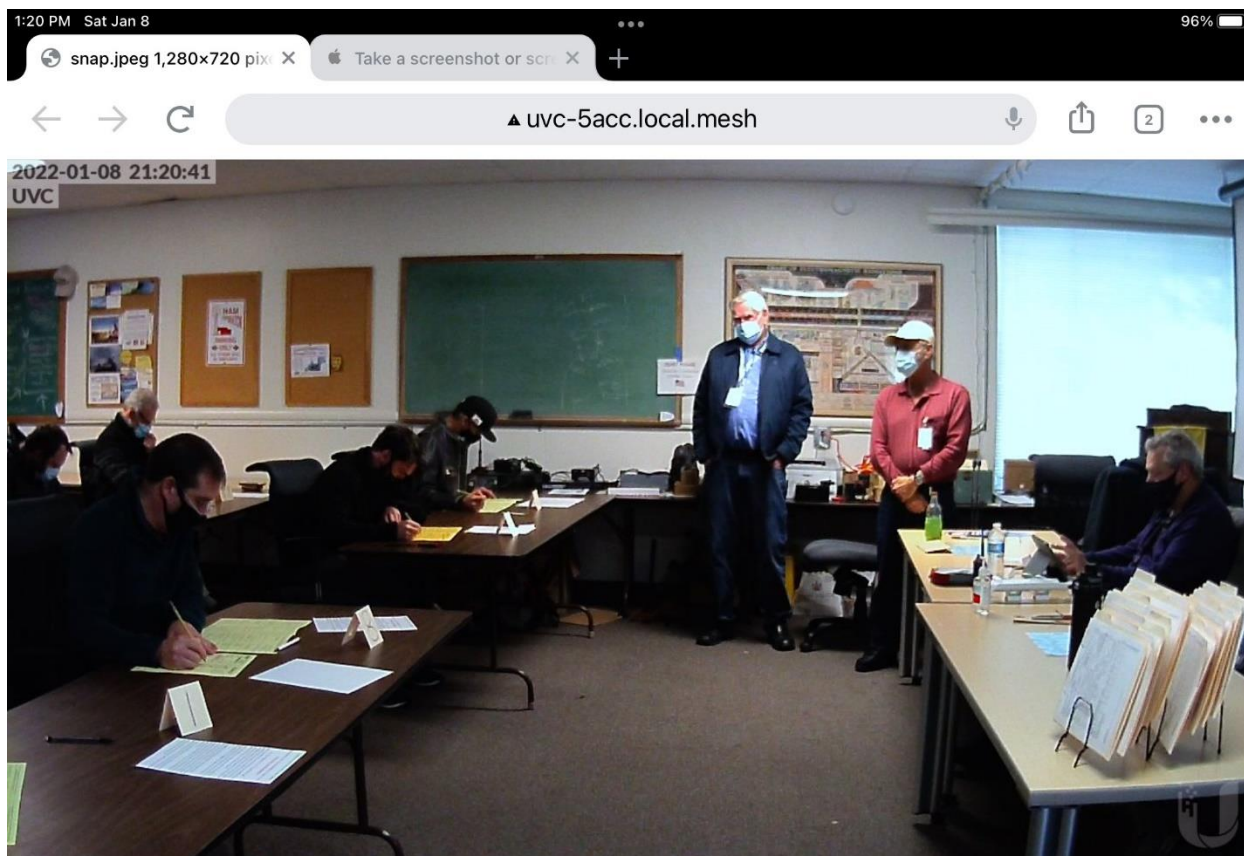
It is always interesting to see what other folks are doing and what is viewed as important in the amateur radio hobby. I appreciated the opportunity to represent MARS at this meeting.

Milt Hyams

January VE Test Session Report

The Marin Amateur Radio Society held its first Volunteer Examination session of the new year on January 8th, 2022. One of the reasons the number of amateur radio operators grow each year is because of the dedicated work of Volunteer Examiners. **Ken AB6JR** and his team of Volunteer Examiners did a great job of testing new licensees and individuals upgrading their current licenses. Those who sat for their license exams on the 8th, had a seamless experience. It is extremely important to run a problem free, smooth testing session because the VE program has a great responsibility to both the examinees and the FCC. As always, Ken and his team did a brilliant job. Here is part of Ken's report:

Five applicants passed the Technician exam with one of those also passing the General exam. Three others passed the General exam for a total of four new General Class license holders. We had two applicants upgrade to Extra class, one from San Francisco and one from Novato. We only had one applicant fail an exam and it was for General.



Here's a photograph of January's Volunteer Examination test session

2022 VE Test Sessions and Updates

Remember, the next VE Test Session is coming up, next weekend. The next testing session will be held on April 9th, 2022, at the MARS clubhouse (1:00pm). There has been some confusion regarding the FCC fee increase as it pertains to the April 9th session. As of April 19th, 2022, the licensing fee you pay upon sitting for your amateur radio examine will be \$35.00. However, those scheduled to sit for their examination at the Marin Amateur Radio Society clubhouse on April 9th, will pay

the regular testing fee since the test date falls before the 19th of April. Here's the official notice regarding the fee increase:

The new Amateur Radio license application fees will take effect on **April 19, 2022**. The Federal Communications Commission's authority to impose and collect fees is mandated by Congress.

The \$35 application fee, when it becomes effective on April 19, will apply to new, modification (upgrade and sequential call sign change), renewal, and vanity call sign applications. The fee will be per application.

Administrative updates, such as a change of name, mailing or email address, will be exempt from fees.

VECs and Volunteer Examiner (VE) teams will not have to collect the \$35 fee at exam sessions. Once the FCC application fee takes effect, new and upgrade applicants will pay the \$15 exam session fee to the ARRL VE team as usual, and pay the \$35 application fee directly to the FCC by using the CORES FRN Registration system ([CORES - Login](#)).

When the FCC receives the examination information from the VEC, it will email a link with payment instructions to each successful candidate who then will have **10 calendar days** from the date of the email to pay. After the fee is paid and the FCC has processed an application, examinees will receive a second email from the FCC with a link to their official license. The link will be good for 30 days.

Additionally, the FCC stated that applications processed and dismissed will not be entitled to a refund. This includes vanity requests where the applicant does not receive the requested call sign.

The FCC published the notice in the Federal Register on March 23, 2022, stating that the amateur radio application fees, including those associated with Form 605 application filings, would become effective on April 19, 2022.

Further news and instructions will follow as the FCC releases them.

Ken AB6JR and his team of volunteer examiners has sent three dates to the ARRL for examination sessions. Those dates are Jan 8, April 9, July 9, and Oct 8, 2022. The testing sessions will start at 1:00 PM and will take place at the Marin Amateur Radio Society's clubhouse. Ken noted that the club is not restricted in the number of exam sessions taking place, meaning more could be added if need be.

There's been some discussion about possible evening examination sessions as well. Ken has also requested some information regarding do online exams, which would extend the scope of the VE team's abilities. **Jim Saltzgaber KM6WWY**, has volunteered to take the position of Assistant Lead Examiner, should anything happen to the lead examiner, Ken.

2022 is going to be a great year for the club's VE program! Again, a big thank you to Ken and his VE team for bringing new amateur radio operators in the fold. You can only grow interest in an endeavor by increasing the number of people involved. Anyone who has VE credentials and wants to help should contact Ken.

Valley of the Moon HamFest 2022

This comes to the QSA-5 from **Steve KB6HOH**. The Valley of the Moon Amateur Radio Club is holding their annual Hamfest 2022. The club will have a swap meet and a VE testing session. Note that preregistration is require if you plan on sitting for your first amateur radio license or an upgrade. Admission is free (you can't beat that) and the club is holding a breakfast (\$10.00). If you want to sell at the swap meet, the cost is \$10.00 for a swap space. Here is some further information:

Saturday, April 23rd, 8:00 AM to 12:00 Noon

Featuring:

- Swap Meet (indoor and outdoor **spaces**)
- Breakfast (pancakes, sausage, and eggs)
- **VE Testing Session** (advance registration required)

- Station Demos
- Fox Hunt
- **And more!**

First Congregational Church of Sonoma 252 W Spain St, Sonoma Talk in on 145.350 MHz (88.5 PL) For info: valleyofthemoonarc@gmail.com

Admission: FREE **Breakfast:** \$10.00 Swap spaces: \$10.00 <http://www.vomarc.org>

Help Extend the SF Emergency Wireless Emergency MESH (Update)

Reprint from the December issue: The MESH network is not simply an idea being employed by our club for emergency communications. The MESH system was recently on the news in New York City where it's being used to provide affordable WiFi for city residents (note, this is a different MESH system than our club is using). MESH networks are becoming commonplace and easily available. The router needed for a MESH network connection can be found on Amazon. While the MESH system in New York City is being used for internet connectivity, it still serves an emergency service in that people can receive important information via the MESH system in times of disaster. Here's a link to a news story about the installation of a MESH internet system in New York:

Sick of Traditional Internet Providers, BK Neighbors Are Setting Up Their Own WiFi with NYC Mesh

<https://bkreader.com/2021/05/10/nyc-mesh-brooklyn-new-york-community-mutual-aid-pandemic/>

Because the San Francisco Emergency Wireless Emergency MESH is such an important project, we are once again reposting this writeup about it.

From Rob Rowlands: We have about 6 nodes working in Marin so far and need people with property in high places to host more nodes. The mesh depends on line-of-site (LOS) paths between nodes interworking and while we have a great site on Wolfback ridge above Sausalito, there are multiple places we can't reach, for example the Club house! If you have access to homes or buildings with great views, we may be able to mount a node, regardless of whether you want to connect (see the following page for a picture of the node).

http://meshmap.sfwem.net/map_display.php#11/37.8586/-122.3836



This is an example of a MESH Node

All it takes is space to mount a \$50 radio on a wall and connect it via ethernet cable to a power feed adapter. The radio node is about the size of a small loaf of bread and can be painted to appease your family! Call Michael Fisher (415) 519-2201 or

Rob Rowlands (415) 849 5667 if you can help.

Ham Radio News

Each month, QSA-5 searches the internet for stories about amateur radio in the news. As editor of our publication, I merely present these articles and do not take a position regarding their message or content. Our first story regards the future of amateur radio:

The Uncertain Future of Ham Radio: Is the future of amateur radio in peril? Will younger generations become involved and thus, carry ham radio into the future? This article looks at those very questions:

<https://sdr.news/military-sdr/the-uncertain-future-of-ham-radio-2/>

Amateur Radio News: This is an interesting site for those interested in listening to ham related Podcasts:

<https://www.amateurradio.com/>

Ham Payload Going to the Chinese Space Station: The International Amateur Radio Union (IARU) satellite frequency coordination panel reports that an application has been submitted for an amateur radio payload to be hosted on the Chinese Tiangong space station.

<https://www.arrl.org/news/ham-payload-going-to-the-chinese-space-station>

Our next two stories come from Rob Rowlands:

Russian Forces Invading Ukraine Using Civilian (Baofeng) Radios: Invading Russian forces in the Ukraine are using civilian radios such as the Baofeng UV-82. Here's a link to an image from Twitter:

https://twitter.com/CITeam_en/status/1498233574834716674

Here is another link from Reddit with an image of captured gear, including a Baofeng UV-82.

https://www.reddit.com/r/ukraine/comments/t2mj0i/they_really_are_using_baofeng_radios/

The last mile and the longest! Communications challenges February 2022: An interesting piece on the James Webb Space Telescope and the great complexities involved in communicating across vast distances in space.

https://docs.google.com/presentation/d/1VyQ2NRQhzpRPd7-qcyWB9TwFjFNwdV3XANcGoaLZgY0/edit#slide=id.g1152e6bfe65_0_1

Tragedy in Petrópolis: Radio amateurs provide support: Amateur radio operators offer support during the Brazilian landslides.

<http://www.southgatearc.org/news/2022/february/tragedy-in-petropolis-radio-amateurs-provide-support.htm#.YhewoOjMLIU>

Pirates Spammed an Infamous Soviet Short-wave Radio Station with Memes: This is a fun article for all you fans of classic cold war Numbers Stations:

<https://twiar.net/?p=7365>

Strong Winds Power Electric Fields in the Upper Atmosphere: From **Ken AB6JR** regarding electric fields in the upper atmosphere. Some interesting news from the NASA/Goddard Space Flight Center

<https://www.sciencedaily.com/releases/2021/11/211129172751.htm>

Is the Game Up for Baofeng in Europe? Yes, an article, thanks to Rob Rowland, about the radio many Hams love to hate. However, there's a review of the Baofeng GT-5R in the ARRL's QST January issue (page 39 Product Reviews).

<https://hackaday.com/2021/12/05/is-the-game-up-for-baofeng-in-europe/>

FCC Regulatory News

As of February 23, the ARRL has not posted any new FCC news, so there are no new items in this month's column. Here are the current regulatory changes and FCC news as it applies to Amateur Radio. This section of the QSA-5 newsletter was introduced earlier this year. We will add new regulations and rules monthly, removing the older regulations and rules as new regulations/rules are introduced. As of the August issue of the QSA-5 newsletter, this list of FCC regulations and changes will be reduced, only covering this year's new regulations and rules. The newest regulations and changes will appear at the top of the list. Note that we are

not able to cover every change the FCC has made this year within our publication:

New Amateur Radio License Applications Fee to Become Effective April 19, 2022

The fee changes will be here soon. Read more:

<https://www.arrl.org/news/new-amateur-radio-license-applications-fee-to-become-effective-april-19-2022>

FCC: Amateur Service Licensees May Not Use Radio Equipment to Commit Criminal Acts: This really should not have to be repeated by the FCC is still sending this out:

<https://www.arrl.org/news/fcc-amateur-service-licensees-may-not-use-radio-equipment-to-commit-criminal-acts>

Two Radio Amateurs Appointed to the FCC Technological Advisory Council (TAC)

FCC Chairwoman Jessica Rosenworcel named two prominent radio amateurs among her appointments to the FCC Technological Advisory Council:

<https://www.arrl.org/news/two-radio-amateurs-appointed-to-the-fcc-technological-advisory-council-tac>

FCC Seeks Attorney-Advisor for its Mobility Division. The Federal Communications Commission (FCC) has [posted](#) an opening for an attorney-advisor in the Mobility Division of its Wireless Telecommunications Bureau in Washington, DC:

<https://www.arrl.org/news/fcc-seeks-attorney-advisor-for-its-mobility-division>

FCC Orders Amateur Access to 3.5 GHz Band to “Sunset” It doesn’t look for amateur access to the 3.5 GHz band. While many amateur radio operators, especially those who hold new licenses, may not be familiar with this band, some older license holders (especially those with specialty interests) use it. Here is the article from the ARRL:

<http://www.arrl.org/news/fcc-orders-amateur-access-to-3-5-ghz-band-to-sunset>

The FCC Headquarters Relocates: The government organization that regulates amateur radio is moving their headquarters. Here's a piece on the move from the ARRL:

<http://www.arrl.org/news/fcc-headquarters-relocates>

ARRL Urges Members to Join in Strongly Opposing FCC's Application Fees Proposal: The ARRL is asking their members to oppose the FCC application fee proposal. Here's the article:

<http://www.arrl.org/news/arrl-urges-members-to-join-in-strongly-opposing-fcc-s-application-fees-proposal>

FCC Grants 60-Day Waiver of Part 97 Data Rate Rules for Hurricane Relief Traffic: The FCC has granted a sixty-day waiver permitting radio amateurs handling hurricane relief communications on HF to use any protocol that would comply with the FCC's rules but for the symbol rate limits.

<https://www.arrl.org/news/fcc-grants-60-day-waiver-of-part-97-data-rate-rules-for-hurricane-relief-traffic>

FCC Investigating Alleged "Jamming" on 40 Meters:

Amateur radio operators have reported that there is some sort of signal jamming on the 40-meter band. Here is an article from the ARRL that covers the story in greater detail.

<https://www.arrl.org/news/fcc-investigating-alleged-jamming-on-40-meters>

Propagation News

Here are some links dedicated to propagation conditions, space weather, sunspot cycle information and all things related to solar conditions:

The K7RA Solar Update: This is the K7RA solar update, which is updated regularly:

<https://www.arrl.org/news/the-k7ra-solar-update-725>

Solarham.com: This is a great resource for all things related to solar cycles and ham radio:

<http://www.solarham.com/index.htm>

DX.QSI Propagation:

A simple, straightforward website for propagation conditions that is regularly updated:

<https://dx.qsl.net/propagation/>

Radio Society of Great Britain: What's New and Propagation Now:

A great resource from the UK version of the ARRL regarding solar activity and propagation:

<https://rsgb.org/main/technical/propagation/whats-new-propagation-now/>

SunSpotWatch.com:

A good general interest site for amateur radio operators who follow solar activity:

<http://sunspotwatch.com/>

ARRL:

Here is an update from the ARRL regarding solar flare activity. The article appeared on May 25th, 2021: Weekend Solar Flare Frenzy Could Spark Geomagnetic Storms:

<http://www.arrl.org/news/weekend-solar-flare-frenzy-could-spark-geomagnetic-storms>



DIY Radio References

We have added a few additional links to our list and will continue to do so as we discover more websites related to the Do-It-Yourself movement! QSA-5 is going to keep adding to the original list of online resources, bringing you more resources as we find them. If there is anything you think would be useful to other club members, contact me and I will be happy to include it in this reference section.

Microcontrollers and Single Board Computers: With the advent of the Arduino micro-controller board, the Raspberry Pi (a single board minicomputer) and Texas

Instrument's Launchpad (also a single board microcontroller), Amateur Radio enthusiasts can build both accessories, such as antenna tuners, and fully functioning transceivers. I have spent the last year at the University of California studying these devices, learning how to use them and incorporate them into electronic projects. I was able to build two HF receivers based on the Arduino and Raspberry Pi devices. The best news of all is that these devices are inexpensive! I encourage you to check these websites out!

Arduino: The Arduino microcontroller board was the first to popularize these devices. They are inexpensive and can be used for a variety of radio related projects. I will include some links to radio related Arduino projects in the next issue of the QSA-5. Here's a link to the Arduino homepage:

<https://www.arduino.cc/>

Raspberry Pi: Did you every wish you could have a PC small enough to fit into your shirt pocket? Your dream has come true. The Raspberry Pi 4 is a fully functional Quadcore 1.6 GHz computer, about the size of a package of playing cards. It has an Ethernet jack, two USB 2 ports, two USB 3 ports and two HDMI ports. Next month, I'll post some links to radio related Raspberry Pi projects. Here's a link to their homepage.

<https://www.raspberrypi.org/>

Texas Instruments TI Launchpad: The Launchpad is Texas Instruments answer to the Arduino. The Launchpad is geared more towards advanced projects and is slightly more expensive. However, the Arduino still holds it own against this device. The Arduino also has more in the way of opensource software. Here is a link to the TI Launchpad homepage.

<https://www.ti.com/design-resources/embedded-development/hardware-kits-boards.html>

Tools for electronics: It is a lot easier to build or repair your electronics if you have the right tool. Paperclips and duct tape are not the solution to everything (unless you are McGyver – hopefully, you got the reference). Therefore, we added some links to suppliers of electronics tools.

All Electronics: A one stop electronics shop that has a variety of tools for your repair and building needs:

<https://www.allelectronics.com/category/780/tools-and-supplies/1.html>

Jameco Electronics: A supplier of decent tools at a reasonable price:

<https://www.jameco.com/Jameco/content/tools.html>

Electronic Printed Circuit Boards (PCB): If you design and build projects that require specific circuit boards, you know how difficult it is to find a board that will work for your purposes. Designing a board and then having it made can be expensive. Here is a company that has a large number of radio PCBs you can purchase and then add components to. They also can take your design and fabricate a PCB at a very reasonable cost. The company's name is **PCBway**:

<https://www.pcbway.com/project/>

Electronic Components and Parts: Many of us involved in amateur radio are constantly tinkering with electronics. It seems to be part of our genetic makeup! Here are some links to companies that sell electronic components and parts, starting with San Rafael's own Electronics Plus (Support local business).

Electronics Plus: It's great to have an electronics store close by for those times when you need a part immediately:

<https://www.electronicplus.com/>

Digikey: A good source for DIY and Maker projects as well as parts. They claim to have the world's largest selection of electronic components.

<https://www.digikey.com/>

Jameco: This company is a good source for almost everything, especially mainstay items such as resistors, capacitors, etc.

<https://www.jameco.com/>

Homemade Antennas: Many new amateur radio enthusiasts put a great deal of time and effort into researching their first radio. However, they often neglect the most important component to a successful radio experience, the antenna. Even if you have some ham radio experience, antennas can be a daunting subject. Commercially manufactured antennas can be expensive and beyond your budget during these hard financial times. Even if you have the funds available to purchase an antenna, reading through the antenna's specs can be akin to reading some long lost ancient language. A good solution for increasing your knowledge of antennas and radio wave propagation, not to mention cutting the costs down, is to build them yourself. Here are some links to DIY (do it yourself) sites to give you a start:

Antenna building basics:

<https://www.wikihow.com/Build-Several-Easy-Antennas-for-Amateur-Radio>

Good Reference for several antenna types:

<https://www.hamradiosecrets.com/homemade-ham-radio-antennas.html>

A step-by-step guide for building a simple antenna:

<https://geardiary.com/2012/07/21/building-a-simple-ham-radio-antenna-without-soldering/>

Instructions for a VHF/UHF dual band antenna:

<https://www.instructables.com/Quarter-Wave-Dual-Band-VHFUHF-Ham-Radio-Antenna/>

Build an HF dipole antenna:

<https://www.electronics-notes.com/articles/antennas-propagation/dipole-antenna/hf-ham-band-dipole-construction-80-40-20-15-10-meters.php>

Introduction to antennas:

<https://www.onallbands.com/ham-radio-antenna-options-for-home-and-portable-operations/>

Ham Radio QRP Transceiver Kits: With the advent of SDR (Software Defined Radio), building fully functioning ham radios has become a lot easier and extremely inexpensive. While, having fewer bells and whistles, as well as being low power units, many have fully functional touchscreens and cover many of the HF bands:

An easy to build QRP transceiver. No soldering needed to build:

<https://www.hfsignals.com/>

An easy to build, single band CW kit:

<https://qrp-labs.com/>

Offering several kits and finished transceivers:

<https://youkits.com/>

Propagation Websites: Propagation is a key factor in successful radio communications. Here are some links to websites that will help you with all your basic propagation needs:

Real time band conditions:

<https://qrznow.com/real-time-band-conditions/>

VOACAP band conditions:

<https://www.voacap.com/hf/>

ARRL Propagation Page:

<http://www.arrl.org/propagation>

Real Time HF Propagation Prediction:

<https://hamwaves.com/propagation/en/index.html>

Ham Radio Websites of general interest:

Ham Radio News: Here are some sites and articles you may find of interest regarding ham radio.

ARRL News Page, which is a good place to find national news regarding ham radio:

<http://www.arrl.org/news>

QRZ Now. Another good site for ham radio news from around the globe:

<https://qrznow.com/>

The Amateur Radio Newsline. An AP styled news feel page for amateur radio:

<https://www.arnewsline.org/>

DMR Radio

Creating a Codeplug

I've been using DMR radios for roughly one year. I was attracted to DMR because it allowed me to easily communicate, via radio, with people around the world. While there is no replacement for setting up an HF rig and antenna, it can be expensive and difficult, especially if you need to work with an HOA (homeowner's association). DMR gives amateur radio operators, especially those new to the hobby, an opportunity to rag chew around the globe!

In many ways, DMR is easier for global radio communication. You don't have to worry about mastering the use a bunch of knobs and buttons that fine tune your signal, as is the case with traditional, old-school HF rigs. However, the initial set up of a DMR radio can be daunting. You must first set up a WiFi hotspot and then create a codeplug. We examined setting up the WiFi connection last month. This month, we'll look at setting up a codeplug. What's a codeplug?

A codeplug is simply a name for a software file that gets uploaded to your radio. That's it. There is no great mystery to it! Well, in all honesty it is not as easy as conventional analog radio software used for a similar purpose.

Most new radios are programmed via a software program. You connect your radio to a computer, open the radio's software program and start entering frequency data. Each radio today comes with its own software for programming

it. This can be a real pain if you own three or four radios, all with their own software program. Enter the CHIRP software program. CHIRP allows you to program a variety of radios from a single software program. CHIRP covers a large number of radio brands and models. However, when program a DMR radio you need to use a DMR software program, which is a bit more complicated!

I had problems when I first tried to program my DMR radio. I'd follow a set of instructions that came with the software, and it wouldn't work! When I did a Google search, I discovered that plenty of other radio operators had trouble with the programming of their DMR radios. There's a consensus that codeplugs are difficult to create. The problem people run into is that there are a few additional steps to creating the codeplug and you need to follow those steps in a specific order. When you program an analog radio via a software program, it is very straight forward. All pertinent data is entered left to right, with one frequency per program line. DMR radio programming is similar, but you need to bounce back and forth between files and that is where things become seemingly complicated. It's in this back-and-forth action that things go wrong.

What I decided to do was to provide you links to the websites and webpages that I used to be able to program my DMR radio successfully. I suggest reading through them and watching the videos first, taking notes, and then start programming. Look at all the links, not just one. While the radio brands differ, the basics are the same.

Videos:

How To Write a DMR Codeplug in 2021:

<https://www.youtube.com/watch?v=T3sUntEVqCY>

How to program a DMR radio Codeplug:

<https://www.youtube.com/watch?v=VExx628R0DM>

How to Build your own DMR Digital Radio Code Plug - Ham Radio Q&A

<https://www.youtube.com/watch?v=h0ssXJUT458>

Articles:

Creating a DMR Codeplug

<https://www.jeffreykopcak.com/2017/06/11/dmr-in-amateur-radio-programming-a-code-plug/>

How to Build Your Own DMR Digital Radio Codeplug

<https://www.jpole-antenna.com/2018/02/20/how-to-build-your-own-dmr-digital-radio-code-plug/>