

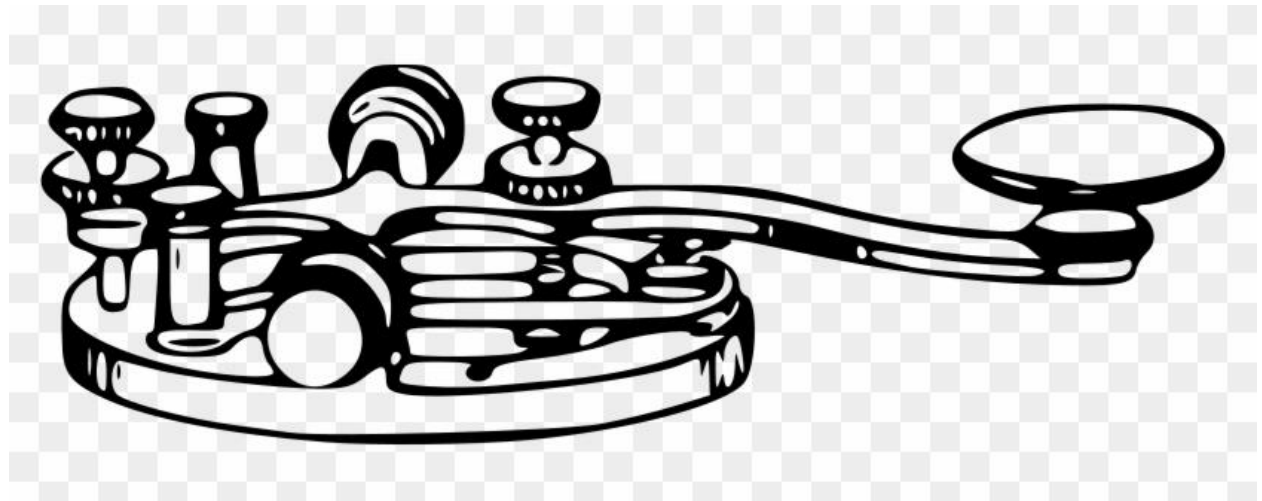


# QSA-5

## Marin Amateur Radio Society Monthly Newsletter

Established 1933

June, 2022



**When all else fails, you can count on Amateur Radio**

## In Memory of Doug Slusher KF6AKU



### From Our President:

As many of you already know Doug Slusher KF6AKU became a silent key last Saturday. I am not going to devote this column to Doug, but this issue will contain a short remembrance of my 52-year friendship with him. The club will have celebration of Doug's life in a hybrid, zoom and in person at the club house. No date has been chosen yet and I will coordinate with Doug's brother Rich Slusher KI6UIM.

This column is for the June issue of QSA-5 and Field Day is upon us. We will be back in person at the Marin Rod and Gun Club partnering with the Redwood Empire DX Association. I am here asking for your help on Friday June 24<sup>th</sup> for setup and Sunday June 26<sup>th</sup> for strike. Of course, you can also join contest proper too. Specifically, we need to get our generator moved to the Marin Rod and Gun Club, set up and then brought back to the club house. Although the generator itself is on wheels we need about four bodies to horse it into and out of the trailer. We will feed you both days. Does anyone have a portable WIFI hotspot we can use for the weekend? I used to bring one from my work, but now we just use our phones.

Last year we combined the club picnic with the public service luncheon. This year we already had the public service luncheon, and we are going to have the picnic as well. We have not yet nailed down a date, but we intend to hold it at Miwok park in Novato in mid-September. I will supply more information as we get closer to the date.

Doug's passing has left huge hole in our club. Not the least of which is the technical committee. I would like to hold a meeting of all of you have helped at any of the repeater sites. My purpose here is twofold. First, I want to do a mind dump on what you all know, and secondly, I would like to formalize the technical committee, its membership and identify a chair. We will buy you all lunch. If you are interested in serving on the committee let me know.

Doug also was the trustee for K6GWE. Brian Cooley K6EZX has taken on that role, but we are looking for someone who would be interested in a longer-term commitment to that role. Let me know if you are interested.

I will keep this short this month. Please let me know if you can help with any of my requests.

73 de WA6UDS

Wa6uds@w6sg.net

## From the Editor:

We were all saddened to hear about the passing of Doug Slusher last month. While I only had a chance to chat with him on one or two occasions, I found him to be a man always willing to answer a question or give you some assistance. What I really appreciated was his attention to detail when providing an answer. Some people give you a bare bones answer that leaves you with even more questions than when you started. Not Doug. The questions I asked him were answered completely and in detail. That's the way I like my answers! This month, we're going to start this June issue of the QSA-5 with a remembrance of Doug by someone who knew him extremely well, Curtis, rather than the usual board meeting minutes.

On the club front, summer is coming up quickly and with it, various events the club is either holding or involved with. Due to my work schedule, I can't make many of these events. Therefore, I ask for your help to ensure that the QSA-5 covers them in detail. While I've received plenty of pictures, thank you for that, I need a few details included with those photographs. A basic who, what, where, when breakdown works for me. Thanks to those of you who have been sending in ideas and links to interesting stories for our readers. If you keep them coming, I'll keep including them within the pages of the QSA-5. As always, this is your publication, not mine. I just type and occasionally shove the rudder left or right to keep the ship sailing in the correct direction. With that said, have a great June!

QSA-5Editor@w6sg.net



## Remembering Doug Slusher KF6AKU

I met Doug Slusher KF6AKU back in the fall of 1970 in the electronics shop at Redwood high school. We were both freshmen and in the same section of first semester electronics with Truman Whorton WB6QFV SK as our teacher and as it turned out also our mentor. We immediately hit it off. We had similar family stories. Both of our fathers returned from serving in World War Two and used the GI bill to go to college. Both our fathers became teachers at about the same time and, had kids about the same time and of course lived in Marin. In spite of both being “nerds” we had different personalities. Doug was outgoing made friends easily, while I was more distant, and some would say aloof or perhaps shy. None the less we became lab partners in electronics and close friends. Doug’s family welcomed me into their home as if I were another one of their kids. His parents were the sweetest kindest folks you would be lucky enough to meet, and I was honored to be a part of scattering both his parents’ ashes. At that point I had the pleasure of meeting Doug’s brother Rich Slusher KI6UIM who is a member of our club.

Our teacher Mr. Whorton recognized something in both of us, maybe it was aptitude, maybe it was free labor. He asked us to help remodel the electronics lab. We built work bays with carpeted benches, built in test equipment, and trays for components used in lab exercises. Mr. Whorton was in the wood shop cutting out the plywood pieces which Doug, and I were assembling in the electronics lab. We reported to him that we had assembled the first one for his inspection. He gave our work a close inspection and asked about slight gaps in fit of the plywood sheets. Doug confessed that in order to get the trays of components to slide in and out we had used finishing nails as shims. He took this a teachable moment and disassembled all our work and reassembled it himself. Of course, the trays would not slide in and out. Doug and I triumphed when Mr. Whorton allowed that we would have to finishing nails as shims.

Redwood high school had a radio club WB6NVY, and Doug and I were both members. Our club held car washes and painted house numbers on curbs to fund TH6DXX beam and rotor and built a collapsible tower out of pipe sections that sat

on the roof of our classroom. Our club did field day on a hilltop in Tiburon. Keep in mind that this was the early seventies, and we were a lot more lax about safety then. We used a WWII vintage gas generator that would run for about five hours on a tank of gas. Its carburetor was such that once the engine was warm it would not restart unless it cooled for about half an hour. It also had a “muffler” made of steel pipe which at night glowed a dull red after an hour or so of running. Every four hours Doug and I took turns pouring gasoline into the running generator while the other stood back with a fire extinguisher in case of an accident. I would not let anyone do that now, but we were young and as I say it was a different time.

Doug and his brother Rich introduced me to car rallies. These were not the kind that involved a stopwatch but rather were more a succession of logic problems and observations of streets and signs. I was late to the party getting a driver’s license, and Doug essentially taught me how to drive on rallies. Doug, Rich, and I also wrote these rallies as a team. I had some of the happiest times of my life as the three of us would drive around, thinking up puzzles, looking for odd intersections, or street signs, and laughing at each other jokes or quoting Monty Python, Stan Freberg, Alan Sherman, and Jonathan Winters. The sort of rallies we wrote involved stapling 5” by 8” cards with reflective tape and number and letters on them about 8 feet up on telephone poles. Sometimes a resident on a street where our course ran would object to the rally, the rallyists, and the card. We would roll up on a heated discussion between a local and a rallyist. I would cower in the car while Doug would with grace and charm talk both parties back from the edge of coming to blows or tearing down the card. The price of gasoline eventually caused a decline in the number of available rallies although they still exist and during the pandemic Doug, Rich, and I ran as a team on zoom using google maps. Doug was the navigator; Rich was the brains of the team, and I was the comic relief. I will cherish those hours we spent together cooped up in a car or on zoom for the rest of my life.

Doug’s family loved the out of doors, camping, fishing, and exploring. They invited me along to their annual camping trip to Mt Shasta. I missed a few of the forty-nine years I was invited but was there for most of them. In the early years there were four or five families all camping together as years past it dwindled to just a few of us. My family was not outdoorsy, so I learned to camp and fish from Doug

and his family. Some many of the things I love to do, I was fortunate to do with Doug and his family.

In 2007 as the economy worsened Doug hired me at the Marin Independent Journal in Technical Services. We did phones, IT, and repaired hardware. All in service of a paper that had to come out every day. Once again Doug educated me in the workings of a daily paper. There are few things quite as impressive as hearing the press run up to speed or watching the press switch from one roll of paper to another while printing at speed. Sadly, even then the newspaper business was beginning to decline, and Doug's department got smaller and smaller until it was just the two of us. During the budget process Doug came to me and said that our department was only budgeted for one person in the next year. He went on to tell me that he thought my software skills would be of more use to the paper than his skills. I did argue with him but he was adamant and he retired and allowed me to keep my job. That is pure Doug, always thinking of the other guy.

Back in high school Doug and I were members of the Amateur Communications Society which later merged with the Marin Amateur Radio Club to form the Marin Amateur Radio Society. Doug was part of the team that engineered that merger. While all that was going on I was living in New York City and not really involved in amateur radio except the odd 2-meter QSO in NYC. I joined the new Marin Amateur Radio Society and in 2009 Doug asked if I would run for a seat on the board. I said OK and to my surprise I was elected. At the January meeting of the board, the board as a whole elects the officers and they saw fit to elect me president. Once again Doug led me to something I was proud to do and better able to do because of his mentorship.

I personally am not given to having a favorite anything. I could not tell you my favorite food, or movie, or book. Doug however always introduced me as his best friend. For knowing him and all the ways he has made my life better I cannot be prouder than to call him my best friend. I will miss him all the rest of my days. I will always aspire to be more like him. To quote Shakespeare as I am wont to do "He was a man, take him for all and all, I shall not look upon his like again"

## **New Members:**

Benjamin J. Winston KM6ZEB - San Rafael

Sean Peisert KN6UHT - San Rafael

Tristan Brenner KG6NLV - San Rafael

Rob Sandusky KN6RAO – Fairfax

Dean Lauerman KK6JLA - Alameda

Carmen Lauerman KK6JKZ – Alameda

Stephen Kramme KD6KXT - Novato

Melanie Kramme KD6KXs - Novato

**Next General Meeting: June 3rd, 2022**







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

# **Marin Amateur Radio Society Board of Directors Meeting May 12<sup>th</sup>, 2022**

**Call to Order 19:31 Hours (7:31 PM)**

## **Attendance:**

**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**

**Approve minutes of 14 April meeting**

**Secretary's Report/Communications Brian K6EZX**

Haven't been to PO box in a few months, but Bruce visits regularly.

Insurance cert for Field Day is in process.

**Treasurer's Report Brue N6VLB** reported that our 2021 taxes have been filed and the related \$500.00 in due preparation fees will soon be paid to Mark Mumm, CPA by check. Tax forms are included at the bottom of these minutes.

## **Committee and other Reports:**

**Membership** – 137 | 88%

**Facilities** - **Skip KJ6ARL** asked that we move ahead on the back-room cleanup project. He will propose some dates for recruiting a work crew soon.

**Public Service** - **Rob NZ6J**: Next event is Dipsea on 6/12. He's concerned that we're not totally clear on what the county will provide in terms of its comms van at the event. **Pam N6PDW** reminded us that the on-board power system in the MARS comms van is still problematic. Rob said we won't need our van at Dipsea unless, as **Doug KF6AKU** pointed out, the county van isn't there and we have to press ours into service at the event. Curtis reported on a recent event participant who sent us a glowing letter of thanks for our help to her during the Ridge to Bridge (thanks Dirck!) and that her note of kudos will be in the next newsletter. **Rob NZ6J** asked for reimbursement for a speaker for the van in the amount not to exceed \$50. **M/S/A**. The public service team members will come back soon with an estimated comprehensive public service budget authorization request for the remainder of the year.

**Technical** - Rob reported that Tam West (standalone 147.330) repeater was very poor during the recent Miwok 100 event and suggests it be looked at. Milt said a similar problem was noted on the simulcast side, on the Tam VHF (Middle Peak) repeater during a recent net. Bruce noted that we have some naming confusion of the repeaters on our site (2 "Tam Wests"), which Curtis will attend to soon.

**VOAD/RCV - Skip KJ6ARL** reported that RCV will take part in [Golden Eagle](#) during the afternoon of that day long Bay Area preparedness event, via the 443.250 Tam UHF repeater.

**VE Testing - Ken AB6JR** says our next license exam event is on July 9th but so far, no applicants are signed up. Ken thinks the \$35 fee and the imminent arrival of a [new Technician Exam question pool](#) is giving some people pause until after the new pool is out in July and applicants can prep against it.

**NBAM - Michael K6MLF** reports that NBAM has received a \$92,000 grant from [ARDC](#). An NBAM website and brochure are being designed, both for launch by the end of May. Much of the money will be spent to acquire more mesh hardware to extend the mesh north through Marin and into Sonoma. **Rob NZ6J** will lead the gear acquisition, Michael will oversee the financial processing to stay consistent with our grant, with further review by **Jeff Young KM6Y**. Michael said he would be looking to use about 45 sq feet of space in the back of the MARS clubhouse to allow for a locked cage to be built to secure NBAM equipment for up to a year as it is deployed for infra buildout and starting up a mesh hardware loaner program. Michael also reported that NBAM are in outreach to other regional ham clubs, largely in Sonoma County, to get them enlisted to help support mesh expansion. NBAM has some other money available to acquire loaner equipment for *users* of the mesh, separate from the pure infrastructure built out. One example would be getting mesh gear for MARS to be an end user of the mesh, a purchase that would not be coverable by monies from the \$92,000 grant from ARDC. The NBAM team is drafting a written “value proposition” document to take to served agencies to inform them of the value of the mesh to get them enthused to adopt the technology at their locations. **Brian K6EZX** will ask our insurance agent about our coverage for ARDC gear stored on our premises for the next year.

**Recreation - Doug KF6AKU** is heading to City of Novato tomorrow to check into Miwok Park availability and will report back soon. **Mark KM6AOW** mentioned that parking can be tricky at Miwok Park and that that should be made clear in the invite along with tips on how to park in the area of the park. We may merge this event with a Critical Mass date for scheduling ease.

**Field Day - Curtis WA6UDS** is still seeking a Field Day chair.

### **Old Business:**

1. **Frequency coordination:** Skip reported we have finally received an email confirming that our 146.700 Tam is coordinated even though Skip still can't find a formal cert on the NARCC site.
2. **Drainage:** Work is underway on the W. side, but the S. side (back of the property) is a larger issue that is still pending commencement of work. Curtis requested that Skip submit the estimate for that S. side work for formal consideration at the next board meeting.
3. **Field Day:** N/A
4. **Picnic:** N/A
5. **Membership terms:** A discussion of adjusting the terms of a membership to create a rate reduction for the families of new members to join MARS for \$30 per year rather than [the current \\$35 family membership](#). But it was determined to instead examine the site language describing the current \$35 plan to make it clearer that this bargain is available, as well as to exercise flexibility in granting an informal \$5 discount for family membership without formal bylaws change.
- 6.

### **New Business:**

1. Picnic N/A
2. Membership terms N/A

**Good of the Order N/A**

**Executive Session Requested by Tom Jordan KG6CTM.**

The meeting moved back from executive session into general session at 9:26 pm at which point Tom moved to approve that MARS pay the amount of \$2,880 to satisfy a demand by a vendor that was discussed in Exec Session. M/S/A unanimously.

**Adjourn 9:28 pm**

*B. Cooley*

**Next Regular Meeting 3 June 2022**

**Next Board Meeting 9 June 2022**

**Marin Amateur Radio Club  
Balance Sheet Comparison  
As of May 31, 2022**

	AS OF MAY 31, 2022	AS OF MAY 31, 2021 (PY)
<b>ASSETS</b>		
Current Assets		
Bank Accounts		
B of A Building account - 8795	7,053.93	4,524.75
B of A General account - 4328	6,085.41	10,695.62
CD	25,000.00	25,000.00
Money Market	5,000.00	5,000.00
<b>Total Bank Accounts</b>	<b>\$43,139.34</b>	<b>\$45,220.37</b>

<b>Total Current Assets</b>	<b>\$43,139.34</b>	<b>\$45,220.37</b>
Fixed Assets		
club house- 27 Shell Rd. MV	58,983.00	58,983.00
<b>Total Fixed Assets</b>	<b>\$58,983.00</b>	<b>\$58,983.00</b>
<b>TOTAL ASSETS</b>	<b>\$102,122.34</b>	<b>\$104,203.37</b>

#### **LIABILITIES AND EQUITY**

##### Liabilities

##### **Total Liabilities**

##### Equity

Opening Balance Net Assets	124,400.00	124,400.00
Retained Earnings	-22,228.35	-22,636.76
Net Income	-49.31	2,440.13
<b>Total Equity</b>	<b>\$102,122.34</b>	<b>\$104,203.37</b>
<b>TOTAL LIABILITIES AND EQUITY</b>	<b>\$102,122.34</b>	<b>\$104,203.37</b>

### **Marin Amateur Radio Club Profit and Loss January - May 2022**

	TOTAL JAN - MAY 2022,	JAN - MAY 2021 (PY)
Income		
Auction Income	50.00	
Donations	118.98	187.03
Dues	6,305.00	6,611.41
Income from club activities	90.00	65.00
Public Service Refund	450.00	
Rent	12,900.00	12,525.00
Sales of Product Income	24.69	
<b>Total Income</b>	<b>\$19,938.67</b>	<b>\$19,388.44</b>
<b>GROSS PROFIT</b>	<b>\$19,938.67</b>	<b>\$19,388.44</b>

**Expenses**

Awards		200.00
Car & Truck	54.49	1,017.34
Equipment < \$2,500		322.79
Field day	350.00	
Food	850.00	
Garbage	239.20	188.56
Insurance	3,495.25	3,036.00
Legal & Professional Services	575.00	25.00
Meals	170.00	
Public Service Expense	841.09	
Reimbursable Expenses	3,917.42	913.03
Rent & Lease		150.00
Repair & Maintenance	885.00	951.86
Repairs & Maintenance	2,880.00	813.34
Repeater		-177.27
Taxes & Licenses	3,950.64	4,550.56
Telephone		93.24
Uncategorized Expense	25.00	
Utilities	1,409.36	4,570.59
VE Session	90.00	65.00
Water	255.53	228.27
<b>Total Expenses</b>	<b>\$19,987.98</b>	<b>\$16,948.31</b>
<b>NET OPERATING INCOME</b>	<b>\$ -49.31</b>	<b>\$2,440.13</b>
<b>NET INCOME</b>	<b>\$ -49.31</b>	<b>\$2,440.13</b>

## 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 for a few months, we are leaving a question up from March:

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](mailto: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

### Miwok 100 Race a Success

Thanks to Rob Rowlands for this report: After 3 years the Miwok100 ran like Clockwork! Here are the highlights:

1. About 320 runners set out at 5am and by 7pm there were still 150 on the course! The last 2 hours saw many drops at Randall and Bofax, and by course cutoff at 830 there were only 6 still out there.
2. No serious injuries, though a helicopter did come to the assistance of someone on coastal trail, next to Ridgecrest, we don't think they were associated with the Miwok
3. The shared roster on google sheets was updated live at Tennessee valley, Bofax and net control. This was a huge help to the timing crew who worked closely with us all day.
4. We used the new TV monitor at Net control to provide several hours of live video from Bofax, and feedback video of the winner's arrival at 2pm.
5. Bridgeview ended up with no view! Friday's plane crash on the Headlands meant no vehicle access, but the relocated site near the stables on Bunker Road worked well for radio, though not internet access for the roster.

It's a high energy event, and I continue to marvel at how fresh the finishers looked, even after 15 1/2 hours!

We had radio problems at Net Control with Tam west and no access at all to Tam UHF. Todd on the timing crew helped, lending us a massive Comet GP9 antenna to replace the Diamond X50 on the mast, which made all the difference. Early in the event we used the tam west input on the simulcast, but later that day returned to our rightful tam west repeater. By 9 pm however that was noising up again.

Thanks to those of you that redeployed at short notice to Bofax and Randall. No event ever runs to schedule, and that flexibility is what hams are good at!

Here's a thank you to the Marin Amateur Radio Society from race organizers, thanking the club for their efforts:

Thanks for sending the photos, Michael!

And a HUGE thank you to all the MARS radio personnel at Miwok this year.  
(Please forward to the whole crew so I don't miss anyone.)

We just could not do this event and know that all our runners are safe without you. The partnership between MARS, our Timing Captain Lisa Heinselman, and the Timing company (Negative Split Racing) is golden, and I look forward to many more years working with you.

Every year I hire a bagpiper to play on the knoll at Cardiac at dawn as the runners reach the top, and it is epic and inspiring. It always reminds me of my father, who was a long-time member of MARS and really enjoyed working races with the group. His memory still inspires me, and he would be proud of all of us for our work in the outdoor community. Thank you again.

Yes, as Rob noted in his email, not everyone can be flexible and roll with all of the crazy (plane crashes) things that happen at events. You all are very good at that.

My best regards,

Tia

Photographs of the event are on the following pages

















## Winlink and CARLA Slide Presentation

**Winlink**, is a worldwide radio messaging system that uses amateur-band radio frequencies and government frequencies to provide radio interconnection services that include email with attachments, position reporting, weather bulletins, emergency and relief communications, and message relay. The system is built and administered by volunteers and is financially supported by the Amateur Radio Safety Foundation. <sup>R</sup>**Rob Rowlands NZ6J**, has put together a great slide presentation regarding winlink. If you want to know more about Winlink, please check out Rob's presentation:

[https://docs.google.com/presentation/d/1H0QpNM66Y--DVE1srzc7nuqneD1EJD4Gg4-jO6GwNGA/edit#slide=id.gd24ce52c18\\_0\\_30](https://docs.google.com/presentation/d/1H0QpNM66Y--DVE1srzc7nuqneD1EJD4Gg4-jO6GwNGA/edit#slide=id.gd24ce52c18_0_30)

Rob also has a great presentation on **CARLA, the California Amateur Radio Linking Association**. The Mission of the California Amateur Radio Linking Association is to provide a wide ranging, robust radio communications system to facilitate daily, routine communication and provide emergency communications resources to local and state agencies and departments in times of disaster or public need. Here is a link to Rob's presentation:

[https://docs.google.com/presentation/d/1\\_XNliamRsxloPhxmuYLeOQ-BmDwiEzHFrplz9ybulMw/edit#slide=id.p](https://docs.google.com/presentation/d/1_XNliamRsxloPhxmuYLeOQ-BmDwiEzHFrplz9ybulMw/edit#slide=id.p)

## How Critical Mass Started

The QSA-5 often reports on critical mass events in the Bay Area. While the QSA-5 has provided the "what is" regarding critical mass, we had not given you the "how" of the story, as in how critical mass started. Thanks to Michael Fischer, who forwarded this piece, you can now learn about the founding of this crucial service.

***First written by AA6SF - SK - April 24, 2012)***

Way back in early 2010, I was sitting at home looking at my HT radio that hadn't needed charging in some time. Since I got my license in January 2009 (Technician & call sign KI6NYQ), I had taken all the HCT (Ham Communication Team) classes offered by SF NERT and many emcomm classes offered by Santa Clara County ARES/RACES, even participated in their drills, volunteered as a radio operator for Bay to Breakers, SF Marathon, SF Nike Marathon, joined SF ACS; but I still did not feel like I knew that much about my radio and emergency communications and needed more radio practice opportunities.

I came to the realization that here in San Francisco there were few opportunities to learn more about my radio, simple UHF/VHF radio communications and few opportunities to practice using my dual band HT.

I decided to start a radio practice group. I thought I would gather together other ham radio operators to learn and practice with them and help them to learn and practice— about simple UHF/VHF radio communications. For weeks I scouted many venues in San Francisco and chose Spreckels Lake in Golden Gate Park. I announced the radio practice at the end of weekly ham nets, handed out announcements at an ACS meeting and an SFARC meeting.

Two of my best friends, Jan WB6SPX and Jim KI6RYE, said they would help and we three met over a nice bottle of red wine at Jim's house to work out (loosely) the details of the first practice. (Better than a garage in Los Altos.) I told them I had a name for the radio practice: "The 2 Meter Critical Mass Amateur Radio Practice".

**On July 10, 2010, the first 2 Meter Critical Mass Amateur Radio Practice took place from 1000 hours to 1200 hours at Spreckels Lake in Golden Gate Park.**

Twenty (20) hams were in attendance. Imagine that!

We talked on our radios. Some had trouble with Tone, Tone Frequency, offsets, phonetics, low battery power. There were lots of questions and the Elmers answered them.

I learned a lot that day. Exactly what I had wanted. Since then, when we meet, we continue to talk on our radios, solve problems and learn new things about our radios. I have learned something every time we met. Only once a month. Only two hours from 1000 to 1200 hours on a Saturday. Where else can you go in the city to learn about ham radio and help others learn? If you know of another place for radio practice, please tell me.

***Thank you Peter McElmury AA6SF-SK for developing this for our community. We look forward to carrying on your tradition.***

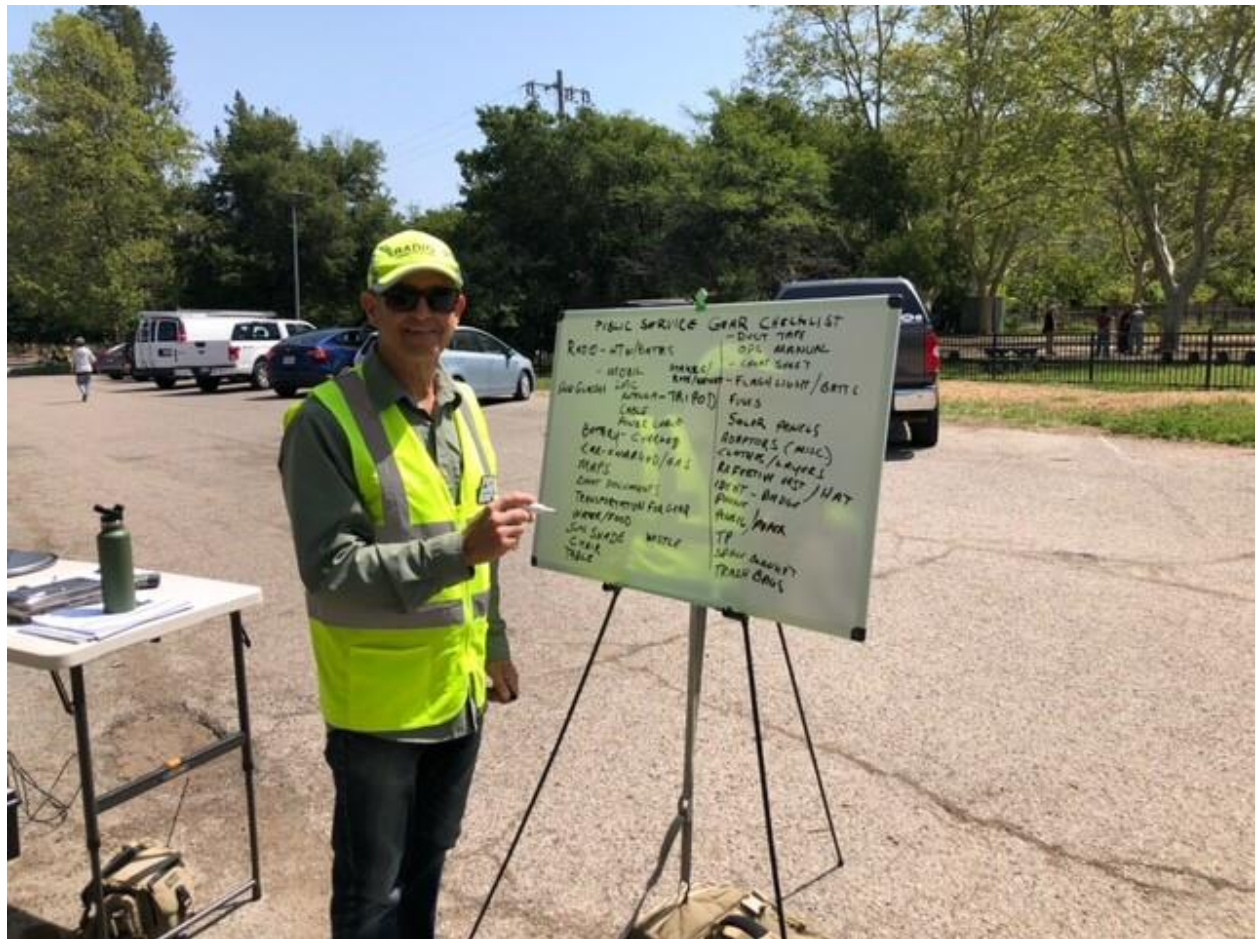


## Critical Mass Meeting

The QSA-5 is leaving this article in place until will get updated critical mass event reports. The April event will give those new to critical mass an idea about how the event is run. On April 24<sup>th</sup>, the Marin Amateur Radio Club held a Two Meter Critical Mass meeting. The meeting took place at the jury parking lot at the Marin Civic Center, from 10:00 am till 12:00 noon. There were ten people in attendance. The primary topic of discussion was the implementation of CTCSS and DCS to make radios selective for user groups and repeater access. They also compared checklists for gear required for public service events.

One of the most important functions of amateur radio is disaster relief. In today's world, cellphones and the internet are the primary form of communication. However, these critical forms of communication are often the first systems to fail during a disaster. This is where radio comes into play. Radio operators involved in critical mass events train for such occasions. Once again, when all other forms of communication fail, amateur radio operators are always ready to step in and keep critical communication lines open and available. Critical mass operators also volunteer for other radio needed events. Here are some photographs from the April event:







## Meshing at Muir Beach

Here's a report from another MESH event recently held by the Marin Amateur Radio Society. The report comes to us via email from Michael Fischer: "Logging Ridge to Bridge participants on the same "live" spreadsheet that was being updated at Tennessee Valley and at net control. The Mesh enabled all of us to see the real-time progress of the event. To connect the three locations, Rob biked up to place two portable mesh nodes that linked the three points to the larger Bay Area Mesh. Bob Salter enabled the spreadsheet which was populated with the roster by Bay Area Ridge Council staff. It worked just fine - even in the face of stiff winds - which required some creative adjustments." Here are some photographs from the event:













## North Bay Critical Mass Schedule & Updates

**May Critical Mass Cancelled:** Due to the passing of Doug Slusher, the May 22<sup>nd</sup> critical mass event was cancelled. Contact Rob Rowlands for details regarding the next critical mass event.

In you are interested in participating in our critical mass events, here is a schedule for critical mass meetings:

### North Bay 2 Meter Critical Mass

**Calling all hams! Attention all stations, attention all stations:**

***The Marin Amateur Radio Society*** sponsors a monthly opportunity for Marin and Sonoma hams (actually, anyone interested) to get together and practice radio protocol. **Rob Rowlands NZ6J, Milt Hyams KM6ASI, Michael Fischer K6MLF, James Renney KI6RGP, Doug Slusher KF6AKU**, and other local experienced hams will be there with an entertaining program, usually featuring hands-on practice with radios.

The ***North Bay Two-Meter Critical Mass*** sessions will be useful for newly licensed amateur radio operators. But it's also a chance for experienced hams to gather and learn new tips. And to become an Elmer to assist those hams who are just learning how to operate their new radios.

During the COVID-19 limitations on gathering, **we will meet on Zoom at 10:30 on the third Sunday of each month.** When those limitations are lifted, we will resume in-person gatherings at the Marin County Civic Center lagoon, just across from the Jurors' parking lot. Those **in-person sessions will start at 10:00—again, every third Sunday. If the third Sunday falls on a holiday, it'll be held on the 4<sup>th</sup> Sunday.**

To get the Zoom link, and to learn of the agenda for each monthly session, go to <https://groups.io/g/nb2mCM> and click on "subscribe."

Learn (or practice) the NATO phonetic alphabet; learn how to program your handheld radio in the field. Practice speaking on the radio at writing speed; learn how to "make every word an event." Learn about the two types of ambulances: ALS and BLS—and what's the difference between them. Learn the basics on how to communicate with satellites, using them as high-elevation repeaters to make long-distance contacts with your HT. Check out the "go-boxes" used by members to operate in public service events. Get familiar with the repeaters in our area. The basics of battery management, and more—something new each month. Check out this video on radio protocol produced by CNET tech journalist and MARS member Brian Cooley K6EZX:

<https://www.youtube.com/watch?v=HHxNOMGSwAI> That's an example of what we'll be practicing when we get together—again, **on the third Sunday of each month; join us!**

# ARRL Announcement

Curtis and Board Colleagues

At the request of our President, on Saturday December 4<sup>th</sup>, 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](https://www.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

## Extremely Important VE Update

This comes from the Marin Amateur Radio Society's Volunteer Examiner Coordinator, Ken Brown: The next regularly scheduled exam is set for July 9. However, on July 1<sup>st</sup>, a new Technician question pool and exams take effect. Therefore, a second Exam is going to be held on June 18<sup>th</sup>, 2022 (1:00pm at the clubhouse). This will afford those who have been studying the current question pool an opportunity to take the exam before the change goes into effect.

The test date, **July 9<sup>th</sup>, 2022, will still take place** as scheduled. If you know anyone planning on taking the test after July 1<sup>st</sup>, let them know that the question pool will be changed. It's crucial to get this information out to everyone, so spread the word. Both exams start at 1:00pm. Please get to the clubhouse early rather than late. The address is 27 Shell Rd, Mill Valley, CA 94941.

Lastly, the Marin Amateur Radio Society needs an exam study and other education programs coordinator for the club. Education is critical in amateur radio. Contact our club president if you're interested.

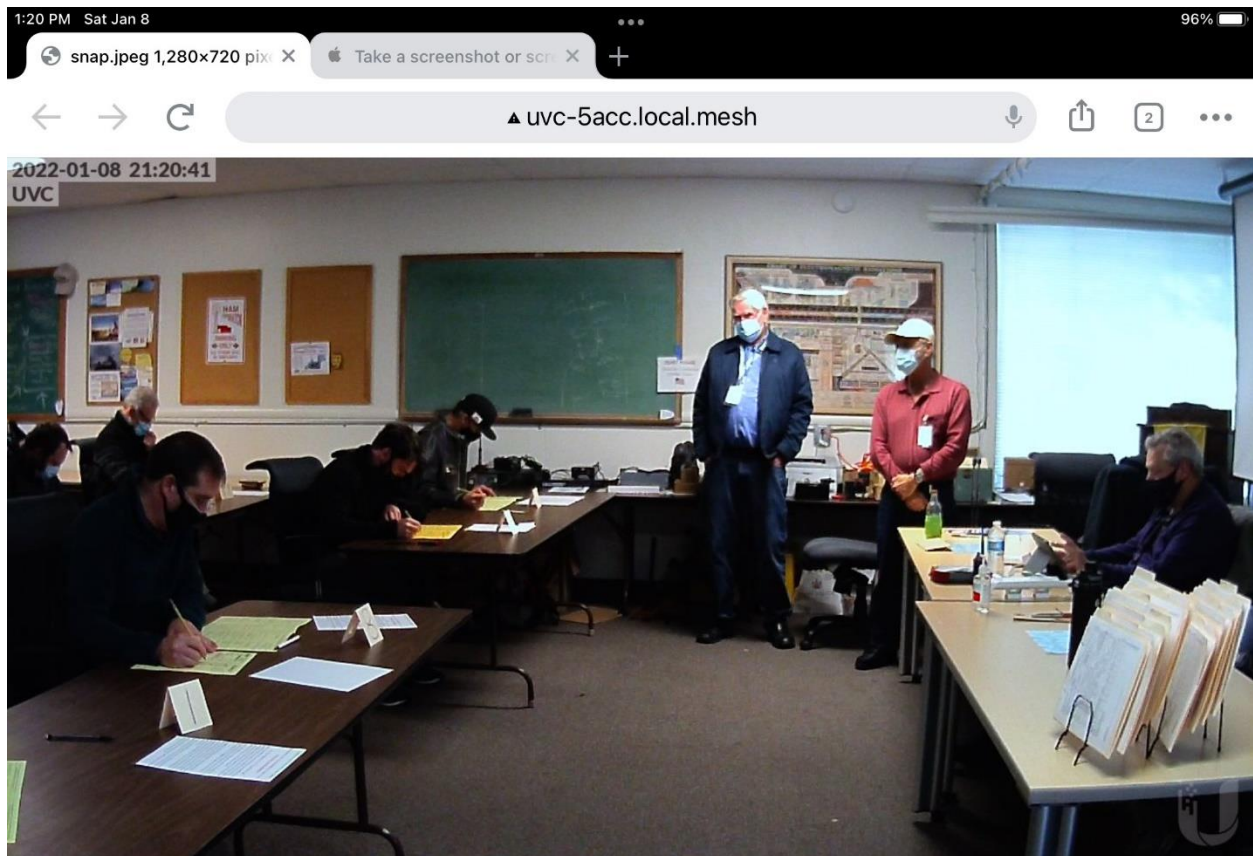
## April 2022 VE Test Session Report

The Marin Amateur Radio Society held another Volunteer Examination session of on April 9<sup>th</sup>, 2022. One of the reasons the number of amateur radio operators grows 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 9<sup>th</sup>, 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.

There were 7 applicants signed up for exams: 4 Technician, 2 General and 1 Extra Class. One individual expressed the desire to also take the Extra Class exam after his General. The examinees scheduled to take the exams were from various locations: 2 from San Francisco, 2 from Oakland, 1 from Los Gatos, 1 from Novato and 1 from Santa Cruz. This was the last group of Technician applicants that will not have to pay an additional \$35.00 to the FCC to receive their Technician License. Therefore, should you know anyone planning on sitting for their exam, make sure to tell them about the fee change in case they don't know about it.

Here are the results from the April 9<sup>th</sup> test session: We had all 7 applicants sit for the exams today. Four passed their Technician Class license (1 lives in Novato). Two passed the General Class (1 also passing the Extra Class), and lastly, one passed his Extra Class. Seven people sat for their exams and all seven passed. All in all, a good day for amateur radio. Again, a big thanks to Ken and his team for their hard work, keeping ham radio alive and well!



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

## 2022 Exam Fee Updates

As of **April 19<sup>th</sup>, 2022**, the licensing fee you pay upon sitting for your amateur radio examine will be \$35.00. 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.

## **Wondering About Babble Class?**

Have you ever had a radio related problem and after searching around the world wide web, found yourself frustrated and confused? Have you ever wished there was a place you could go to sit around and talk about all things ham radio? Your prayers have been answered!

The Marin Amateur Radio Society holds a weekly babble study class on Sunday mornings at our club house in Mill Valley. Here's what Germaine had to say about one of our babble classes:

Success!

The radio received Francis' transmission and in turn will transmit at 100W. It looks like I just need to clean up the effects of the saltwater environment the radio lived in for a good 20 years. (I don't think I have a photo of me in action at the nav station.) Thank you so much, Jan, and also for bringing the pastries. Thank you to the rest of the Babble class for the antenna tips and . . . who was it that finally got that fuse holder open? It was passed around like an offering basket.

Tom is very impressed with my new badge so thank you for wrangling that, Michael. I will show it off at the family zoom blab fest with my 91-year-old dad.

Take care, Germaine

You can join in the fun and learn something you probably didn't know from our club members. Here are some photographs of the last few babble classes:









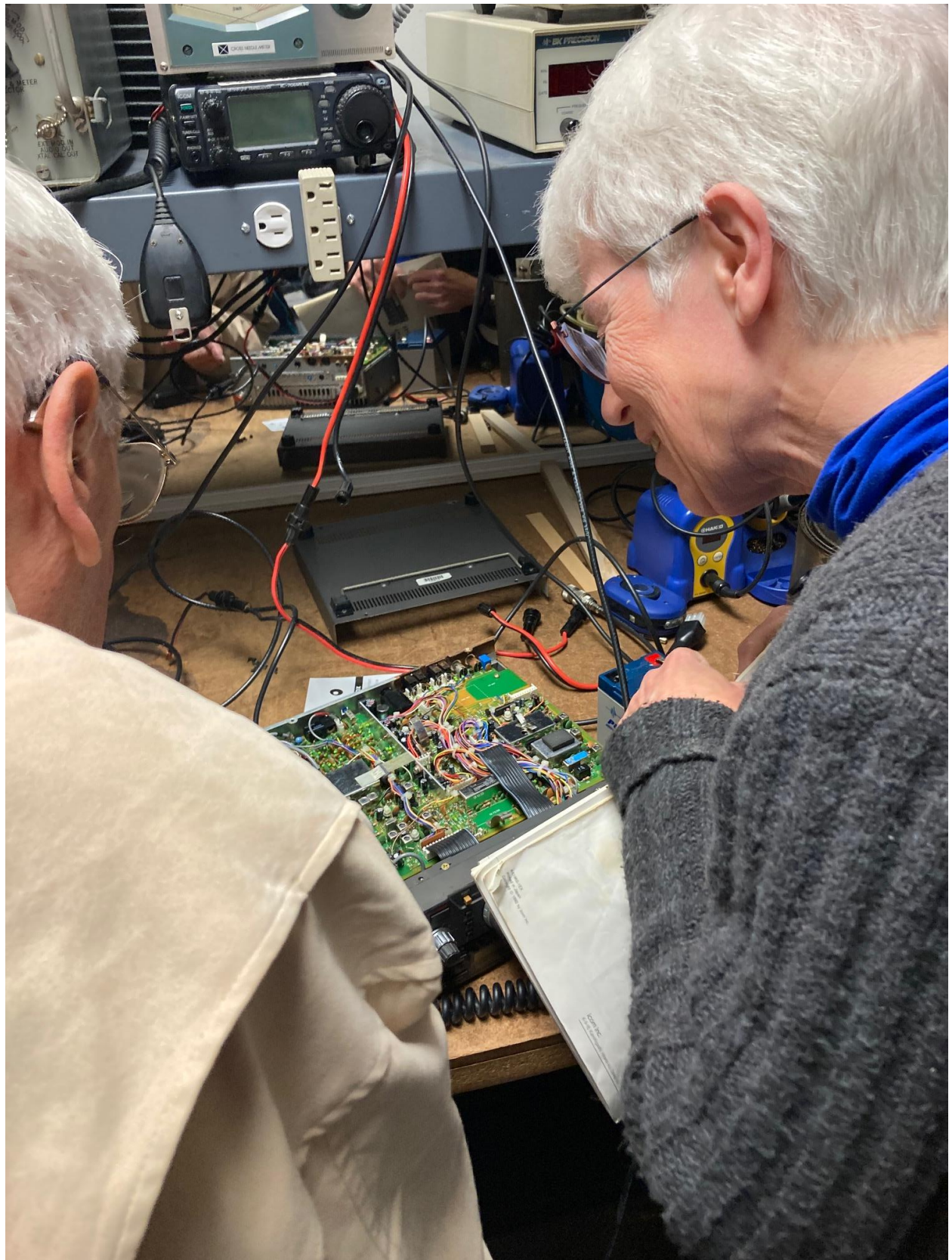














# **NBAM North Bay Area Mesh**

## **New Backup Emergency Communication Network for Marin and Sonoma**

The Marin Amateur Radio Society has received a grant of \$92,000 to install a microwave “mesh” network in Marin and Sonoma Counties. The mesh network, utilizing microwave frequencies allocated to amateur radio, will provide an alternative to the internet, should power outages or other events render the internet unusable. It is also intended to provide an important means of disaster communication with community-based organizations, such as food banks, in underserved and rural communities.

The grant was made by Amateur Radio Digital Communications, a Seattle-based nonprofit funded by proceeds from the sale of microwave frequencies to cellular telephone providers.

The Marin-Sonoma network, called NBAM (North Bay Area Mesh) is connected to the already-established BAM (Bay Area Mesh) which serves the emergency operations centers of San Francisco, San Mateo, and Alameda Counties. There is a parallel effort in Contra Costa County. The long-term objective is to provide a statewide communications network, operated by ham radio volunteers, that will provide a robust backup to existing means of communication among the various Emergency Operations Centers used by police and fire agencies in each county.

Using off-the-shelf low-power microwave antennas, NBAM will identify and install key nodes on hilltop locations up the US101 corridor from the Golden Gate Bridge north to Healdsburg and beyond. On the coast, the nodes will provide service to the rural communities of Tomales Bay, Bodega Bay, Timber Cove and up to The Sea Ranch. The Marin Amateur Radio Society will partner with—and provide equipment and training to—other radio clubs in each of the two corridors to place, maintain and utilize the mesh network.

BAM is working closely with the Sheriff's Departments in both counties. The Marin Amateur Radio Society has been an active nonprofit amateur radio Club since the 1930s with its own clubhouse (a retired fire station) in Mill Valley. Its FCC-licensed volunteers provide communications support to a dozen bicycle rides and footraces—including the fabled Dipsea—each year.

**Quote** from Tom Jordan, Emergency Management Coordinator or Rob Ireson, Chief Radio Officer, Marin County Sheriff's Auxiliary Communications Service: "The mesh will provide us with another redundant means of emergency communications—in a disaster, redundancy spells resilience."

**Quote** from Dan Ethan, Chief Radio Officer, Sonoma County Sheriff's Auxiliary Communications Service: "The importance of establishing alternative methods and modes of high-speed reliable communication between the North Bay Counties is more important now than ever before."

**Quote** from Curtis Ardourel, President, Marin Amateur Radio Society:

**Quote** from Kristen McIntyre, Pacific Division Director, national Amateur Radio Relay League: "Mesh networks like this are both a way to offer resilient communications during emergencies and a platform to further explore the development of mesh technology on the amateur radio bands."

Contact in Sonoma County: Jeff Young KM6Y 707 322 3221 [Jeff.KM6Y@gmail.com](mailto:Jeff.KM6Y@gmail.com)

Contact in Marin County: Michael Fischer K6MLF 415 519 2201  
[michaelfischer149@gmail.com](mailto:michaelfischer149@gmail.com)

Here are some photographs from an event held on April 17 in which the mesh connection was set up and tested. The network ran from Wolfback to Tennessee Valley to Coyote Ridge to Muir Beach.





# NZ6J-NSM5-PubSvc-1

Location Not Available

[Help](#)

[Refresh](#)

[Mesh Status](#)

[WiFi Scan](#)

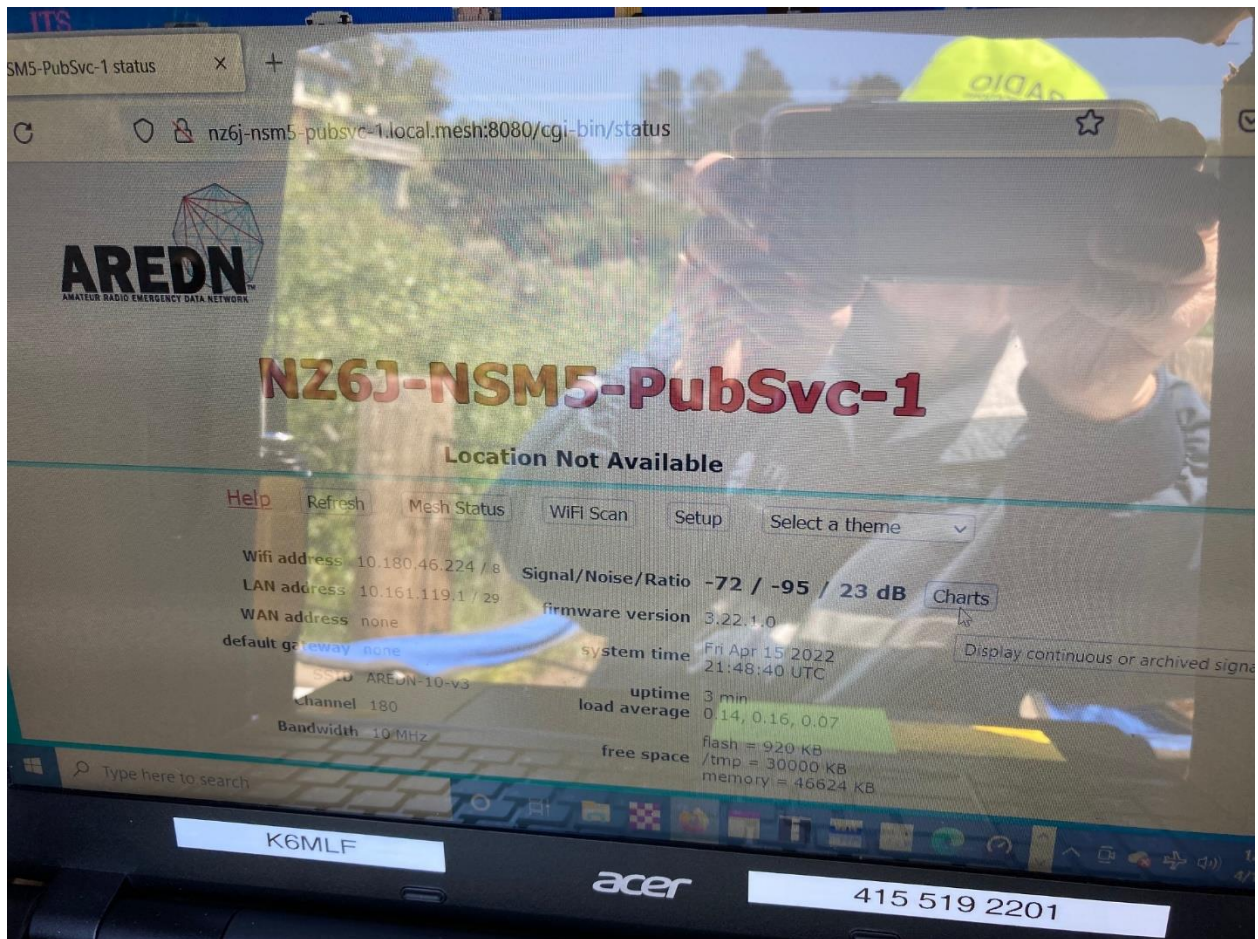
[Setup / LAN](#)

[Select a theme](#)

<b>Wifi address</b>	10.180.46.224 / 8	<b>Signal/Noise/Ratio</b>	-72 / -95 / 23 dB	<a href="#">Ch</a>
<b>LAN address</b>	10.161.119.1 / 29	<b>firmware version</b>	3.22.1.0	
<b>WAN address</b>	none	<b>system time</b>	Fri Apr 15 2022 21:48:40 UTC	
<b>default gateway</b>	none	<b>uptime</b>	3 min	
<b>SSID</b>	AREDN-10-v3	<b>load average</b>	0.14, 0.16, 0.07	
<b>Channel</b>	180	<b>free space</b>	flash = 920 KB /tmp = 30000 KB memory = 46624 KB	
<b>Bandwidth</b>	10 MHz			













## **Help Extend the SF Emergency Wireless Emergency MESH (Update)**

Since the previous article was about the MESH network, the QSA-5 decided to leave this posting up: 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](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.

## **Portable MESH Unit**

This is a portable MESH unit Michael Fischer and Rob Rowlands have been working on. It consists of a Ubiquity or TP-Link 5Ghz radio, Shanqiu POE battery, Cat5 cables and zip ties. Total cost about \$125-150, including the case. Here's a link to the radio (just the radio) and below that is a photograph of the assembled



unit:

[https://www.amazon.com/TP-Link-300Mbps-dual-polarized-directional-CPE510/dp/B00N2RO63U/ref=sr\\_1\\_1?crid=3ARISN3BGBB7X&keywords=TP-Link%2B5Ghz%2Bradio&qid=1651681076&srefix=tp-link%2B5ghz%2Bradio%2Caps%2C1163&sr=8-1&th=1](https://www.amazon.com/TP-Link-300Mbps-dual-polarized-directional-CPE510/dp/B00N2RO63U/ref=sr_1_1?crid=3ARISN3BGBB7X&keywords=TP-Link%2B5Ghz%2Bradio&qid=1651681076&srefix=tp-link%2B5ghz%2Bradio%2Caps%2C1163&sr=8-1&th=1)



Just add a camera tripod or use a fencepost. If operating from the node, add a laptop or tablet with battery backup for extended time.

## 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 use of amateur radio in the wake of tornados:

**ARES® Activated in Oklahoma for Tornado Clean-Up Communications:** One of the roles that amateur radio plays is aiding our communities during disasters. Here's a piece from the ARRL:

<https://www.arrl.org/news/ares-activated-in-oklahoma-for-tornado-clean-up-communications>

**Amateur radio is more than just a cool hobby:** We all know just how cool amateur radio is. This article articulates what we already know, giving the rest of the world a glimpse of just what it is we do!

[https://www.timesnews.net/living/features/amateur-radio-is-more-than-just-a-cool-hobby/article\\_02f01e08-c01a-11ec-bc34-bf15c0fb6937.html](https://www.timesnews.net/living/features/amateur-radio-is-more-than-just-a-cool-hobby/article_02f01e08-c01a-11ec-bc34-bf15c0fb6937.html)

**Are decommissioned satellites susceptible to hackers?** As someone who holds cyber security credentials, I can assure you that this is an interesting topic. This is a video but newsworthy.

<http://www.southgatearc.org/news/2022/april/are-decommissioned-satellites-susceptible-to-hackers.htm#Ymcq-trMLIU>

**Scientists hope to broadcast DNA and Earth's location for curious aliens:** Well, this article speaks for itself. It's quite interesting.

[https://www.theguardian.com/science/2022/apr/18/scientists-hope-to-broadcast-dna-and-earths-location-for-curious-aliens?CMP=Share\\_AndroidApp\\_Other](https://www.theguardian.com/science/2022/apr/18/scientists-hope-to-broadcast-dna-and-earths-location-for-curious-aliens?CMP=Share_AndroidApp_Other)

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

**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

Here are the current regulatory changes and FCC news as it applies to Amateur Radio. This section of the QSA-5 newsletter was introduced last 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 2021 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:

**FCC Has Resolved Technical Issues and Resumes Processing Amateur Radio License Applications:** It's been a rough month for the FCC and their ability to process license applications:

<https://www.arrl.org/news/fcc-has-resolved-technical-issues-and-resumes-processing-amateur-radio-license-applications>

**FCC Has Resumed Processing License Applications and Exam Session Files:** The FCC was having some computer issues that put a temporary halt to their licensing and examination session fee processing. It appears the problem has been resolved:

<http://www.arrl.org/news/fcc-has-resumed-processing-license-applications-and-exam-session-files>

**New FCC Application Fee Will Not Apply to Amateur Radio License Upgrades:** This has been a confusing issue for many amateur radio operators looking to upgrade their licenses. This article should clear things up:

<http://www.arrl.org/news/new-fcc-application-fee-will-not-apply-to-amateur-radio-license-upgrades>

**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-730>

**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/>





## 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/>