

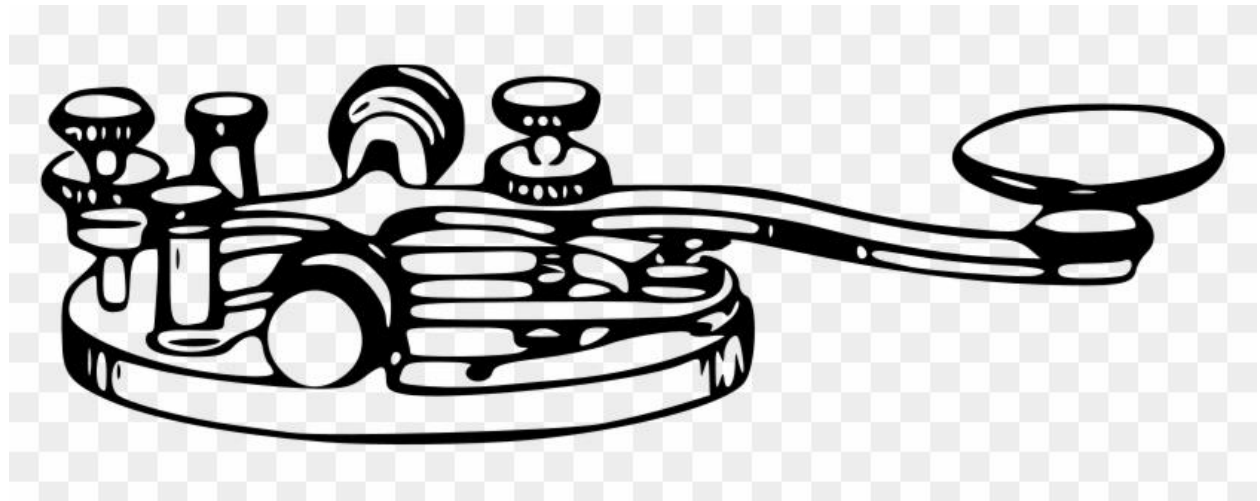


# QSA-5

## Marin Amateur Radio Society Monthly Newsletter

Established 1933

October, 2022



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

## In Memory of Doug Slusher KF6AKU



## **From Our President:**

October... The colors are changing, the scent of pumpkin spice is everywhere. A colleague asked me if I had heard that they were trying to genetically engineer a pumpkin spice pumpkin. Now there is a product we really need. It is once again the time for me to beat the bushes for candidates for the board. The way the dice have fallen five seats are on the ballot including mine. I am chair of the nominating committee this year because I am term limited off the board. We have identified some excellent folks already who would be new faces on the board but it is always better if we have more candidates than seats to fill. It gives you a choice. I serve on a homeowner's association board and for several years we had no new candidates. HOA boards are much more legally regulated than radio club boards but if you have no new candidates, you can avoid the election altogether and just appoint yourselves back on the board. Two years ago we had two new people run for the board and since their election we have moved forward on a number of projects that had stagnated for years.

When I was a teenager and a member of the Amateur Communications Society I assumed you had to be anointed to be on the board. That of course was literally in another century when different societal norms obtained so perhaps they actually were anointed, I believe with transformer oil. When I was in my early days as MARS club president, now more than a decade ago, a wise club member warned me that the board functioned as an old boys club within the club. Not surprisingly he was correct. In my view we as a board have changed for the better since then. Of course it may be that I am simply another old boy now and expect things to be a certain way.

In the next couple of years MARS faces a number of challenges including reorganizing our technical committee, navigating social encounters like whether we should have a Christmas dinner or even in person general meetings when the plague is still around, taking on new roles in public service like RCV/VOAD and the MESH, encouraging younger hams to join a club, restarting our education program. In short there are plenty of interesting challenges to address.

To serve on the board you need to be a member of MARS in good standing (paid up), be able to fog a mirror, be willing to show up for typically 11 board meetings a year which are now held exclusively on zoom, and be willing to share your opinions on how the club should function. After 54 years as a ham I know you all have opinions, often divergent opinions on a single topic. If this might be you, give me a shout. [WA6UDS@W6SG.NET](mailto:WA6UDS@W6SG.NET) I can answer your questions and perhaps offer advice almost as good as the advice I got.

73 de WA6UDS

## **From the Editor:**

Summer has left us, and Fall has arrived! With it has come a slight chill in the morning air and darkness where here was once light. The countdown to the holidays has already started and Halloween items are appearing on store shelves early. It also seems that the Pandemic has drawn to an end. Being able to see people's smiling faces again seems like a gift from the gods. The upcoming new year holds great promise.

Having lived in many places, I am especially grateful to live here in Marin. I could think of no better place to have ridden out the Pandemic. I was always a city guy, having lived in major metropolitan centers for most of my life. When I moved to San Rafael four years ago, my first thought was "why didn't I do this years ago?" The icing on the cake was finding such a great amateur radio club here, not to mention an electronics parts store in town. I talk to members of other clubs and have concluded that the Marin Amateur Radio Society is an extremely active organization.

Our club always seems to be in motion, going to or holding events month in and month out. Even during the pandemic, the Marin Amateur Radio Society managed



to keep things going. You should give yourself a round of applause for all our club does for the community.

I was grateful to receive countless emails regarding events. You provided photographs and descriptions of events, and that allows me to report on our club's activities more accurately. My work schedule is finally set and not so hectic, which means I'll be able to start attending these events next month. However, I still hope to receive your photographs and details, especially photographs since I am the worst photographer in the world. I want to thank you for providing content for our publication. The QSA-5 is so much better because of your assistance. As always, if you have any ideas for stories and items of interest you want to see within the publication's pages, email me and I'll include it. Have a great October!

[QSA-5Editor@w6sg.net](mailto:QSA-5Editor@w6sg.net)



## Remembering Doug Slusher KF6AKU

QSA-5 is going to publish this piece one last time because of Doug's enormous contributions to the Marin Amateur Radio Society. This piece, which I've read a few times, is very touching and was written by our club President, **Curtis Ardourel WA6UDS**

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 outdoors, 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:**

John Vlahos K7JGV - Castro Valley  
Geoff Peters AB6BT - Novato  
Kyle Schien KN6SKP - San Rafael  
Tony Belli KN6RBL - San Rafael  
David Sneed WD6L - Napa

**Next General Meeting: October 7th, 2022**





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

**Marin Amateur Radio Society  
Board of Directors Meeting  
8 September 2022**



**Call to Order 19:30 Hours (7:30 PM)**

**Attendance:**

President: Curtis Ardourel WA6UDS (1)

Director: Skip Fedanzo KJ6ARL (2)

Vice President: Tom Jordan KG6TCM (2)

Director: Ken Brownfield AB6JR (2)

Director: Mark Klein KM6AOW (1)

Secretary/Trustee K6GWE Brian Cooley KB6EZX (1)

Treasurer/Trustee W6SG: Bruce Bartel N6VLB (1)

**Adopt Agenda:** Milt KM6ASI asked that we have a repeater report sooner in the agenda as he has to leave early.

**Approve Minutes:** of 11 August meeting

**Secretary/K6GWE Trustee's Report/Communications:**

- Report on Insurance: In process for NBAM and Brian K6EZX will clarify what policy we have that covers site installs already which should extend to the new NBAM sites easily and ideally without additional cost.
- Report on site visits: Keys, labeling: Brian will work with Milt to develop a plan to label our repeater installations (owner, contact, nature of equipment, any licenses).
- Knowledge gathering group meeting reminder - start to formalize the institutional knowledge of the club that is not written down.

**Treasurer's Report:** Published in QSA-5. No objections.

**Committee and other Reports:**

1. **Membership:** 148 | 96%
2. **Technical:** Fire Station 9 (not a MARS network site) install is delayed as the county's tower climbers get recertified. Rob NZ6J was working on West Peak earlier today and found that the locks have been changed and we are now locked out there and at Middle Peak. MARS leadership will need to get involved, perhaps in conjunction with RCV, to explore and regain access. Milt suspects American Tower changed the locks, Curtis asked what role the water district plays in our access as it may be an overlapping authority. Milt will keep Curtis in the loop as he proceeds to explore the issue with urgency.
3. **Facilities:** Skip KJ6ARL reported that we now have MARS property labels. He will start applying them to permanent collection gear. Brian asked about recording the asset tag #'s and [created a sheet](#) for that purpose. Curtis reported that Jan came to the club last Sunday, found it was locked, and then left. He was offered a key tag for such purposes but demurred because he was there for the camaraderie. It was decided to encourage,



but not formally assign, an “opener” to do Sunday morning duty each week; A signup list on the wall was the favored method.

4. **Public Service:** Pam N6PDW reported that signups for the PS events have been showing up reliably. She recapped the PS schedule for the remainder of the year.
5. **VOAD/RCV:** Skip KJ6ARL reported that RCV may soon be considered for formal county sponsorship via the Marin BoS’s October consent calendar. Also still learning where RCV will fit in the new MCFD-centered emergency ops apparatus.
6. **VE Testing:** Ken AB6JR reiterated that an Oct 8 VE session coming up, 1 person signed up so far.
7. **NBAM:** Curtis noted that [MOU’s are being drafted](#) by the NBAM team (K6MLF, KM6Y and NZ6J) to formalize NBAM equipment installation on the sites of other clubs and site owners. Michael K6MLF reported that 16 key sites have been identified at different stages of negotiation. Of those, 4 are being emphasized tonight with draft MOU’s (see minutes folder for this meeting). The main question mark remains one of obtaining liability insurance which will be required for each site and which Secty. Cooley is pursuing, per above. Jeff KM6Y asked that the board not wait until the next board meeting to get MARS approval for the submitted MOU’s to maintain momentum on these agreements. Brian K6EZK will report back tomorrow what the insurance agency indicates in terms of 1.) status of our current site liability insurance and 2.) ability to readily add NBAM sites to that. Ken AB6JR asked about the survivability of electric utility payment provisions in the MOUs should NBAM dissolve in the future as either an entity or one that has funding. Tom K6TCM moved that the board approve that the President execute the MOU’s as presented tonight (Estero, CalSites, Ft. Ross, SMRS) subject to an additional approval IF insurance costs are discovered by Secty. Cooley, and that future MOU’s can be executed by the club President as long as they are substantially similar. M/S/A unanimously. Brian will create an [NBAM folder on the club Google Drive](#) where the board has directed that all NBAM vital documents be accessible.
8. **Picnic 10 September:** Curtis reported 44 people have signed up, 6 of which have indicated they are going to bring their own food, the rest opting for a box lunch from our caterer. Tom KG6TCM and Milt reported on how preparations are going.

**Old Business:**

1. Drainage/Fire Protection. N/A
  2. Transfer from Doug
    1. Laptops: In process, per Curtis.
    2. Club Assets/Other assets from Doug's House: In process, per Curtis.
    3. Card Key System
      1. Permissions updated per last meeting (completed per list on last meeting)
      2. Who should be my backup: Curtis asked about designating a formal backup person to also have access to the key system.
  - d. Thumb drives: In process, per Curtis. Many contain arcane radio software as well as config and programming files for the simulcast system.
- Field Day – Settling up with REDXA. Curtis reported that this is being finalized and asked Bruce N6VLB for an accounting of our expenses around Field Day.
- Website password update: Happening this weekend to lock out those members who have not renewed yet.

**New Business:**

1. Christmas celebration: Curtis will ask the membership at the next General to gauge interest.
2. Babble Class access: (Covered above)
3. Board Election
  1. Curtis – Termed out
  2. Tom – Current 1 of 2
  3. Brian – Open - Not running
  4. Bruce – Open - Running
  5. Ken – Current 1 of 2
  6. Skip – Open - Not running
  7. Mark - Open - Not present

A nominating committee was named: Curtis, Tom, Ken were all named to be on it for the coming elections. It will seek 3+ board members, pending Mark Klein's response.

**Good of the Order:** N/A

**Executive Session:** Yes, see separate restricted minutes.

**Adjourn:** 21:21 9:21PM

B. Cooley

Next Regular Meeting 7 October 2022

Next Board Meeting 13 October 2022

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

AS OF SEP 30, 2022,      AS OF SEP 30, 2021 (PY)

**ASSETS**

Current Assets

Bank Accounts

B of A Building account - 8795	6,712.46	2,346.63
B of A General account - 4328	7,379.63	10,981.47
CD	25,000.00	25,000.00
Money Market	5,000.00	5,000.00
<b>Total Bank Accounts</b>	<b>\$44,092.09</b>	<b>\$43,328.10</b>

Other Current Assets

Uncategorized Asset	-35.00	
<b>Total Other Current Assets</b>	<b>\$ -35.00</b>	<b>\$0.00</b>
<b>Total Current Assets</b>	<b>\$44,057.09</b>	<b>\$43,328.10</b>

Fixed Assets

Clubhouse - 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>\$103,040.09</b>	<b>\$102,311.10</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	868.44	547.86
<b>Total Equity</b>	<b>\$103,040.09</b>	<b>\$102,311.10</b>
<b>TOTAL LIABILITIES AND EQUITY</b>	<b>\$103,040.09</b>	<b>\$102,311.10</b>

**Marin Amateur Radio Club**  
**Profit and Loss**  
**January - September 2022**

	TOTAL	
	JAN - SEP, 2022	JAN - SEP, 2021 (PY YTD)
Income		
Auction Income	60.00	
Donations	118.98	262.03
Dues	6,305.00	6,676.47
Field day refund	625.00	
Income from club activities	90.00	828.00
Public Service Refund	450.00	475.00
Rent	23,711.03	22,525.00
Sales of Product Income	24.69	20.32
<b>Total Income</b>	<b>\$31,634.70</b>	<b>\$30,786.82</b>
<b>GROSS PROFIT</b>	<b>\$31,634.70</b>	<b>\$30,786.82</b>
 <b>Expenses</b>		
Awards		300.00
Car & Truck	54.49	2,426.15
Equipment < \$2,500		322.79
Field day	2,184.67	
Food	850.00	1,536.00
Garbage	382.72	284.24
Insurance	7,061.25	6,140.35
Legal & Professional Services	575.00	25.00
Meals	2,378.00	
Public Service Expense	841.09	120.85
Reimbursable Expenses	4,505.12	3,674.95
Rent & Lease		150.00
Repair & Maintenance	1,237.50	2,281.66
Repairs & Maintenance	2,880.00	895.18
Repeater		-177.27
Taxes & Licenses	3,950.64	4,550.56
Telephone	94.47	93.24

Uncategorized Expense	275.00	1,127.50
Utilities	2,757.05	5,701.35
VE Session	215.00	188.00
Water	524.26	511.04
<b>Total Expenses</b>	<b>\$30,766.26</b>	<b>\$30,238.96</b>
<b>NET OPERATING INCOME</b>	<b>\$868.44</b>	<b>\$547.86</b>
<b>NET INCOME</b>	<b>\$868.44</b>	<b>\$547.86</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 (hopefully we'll get a few new questions in soon):

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



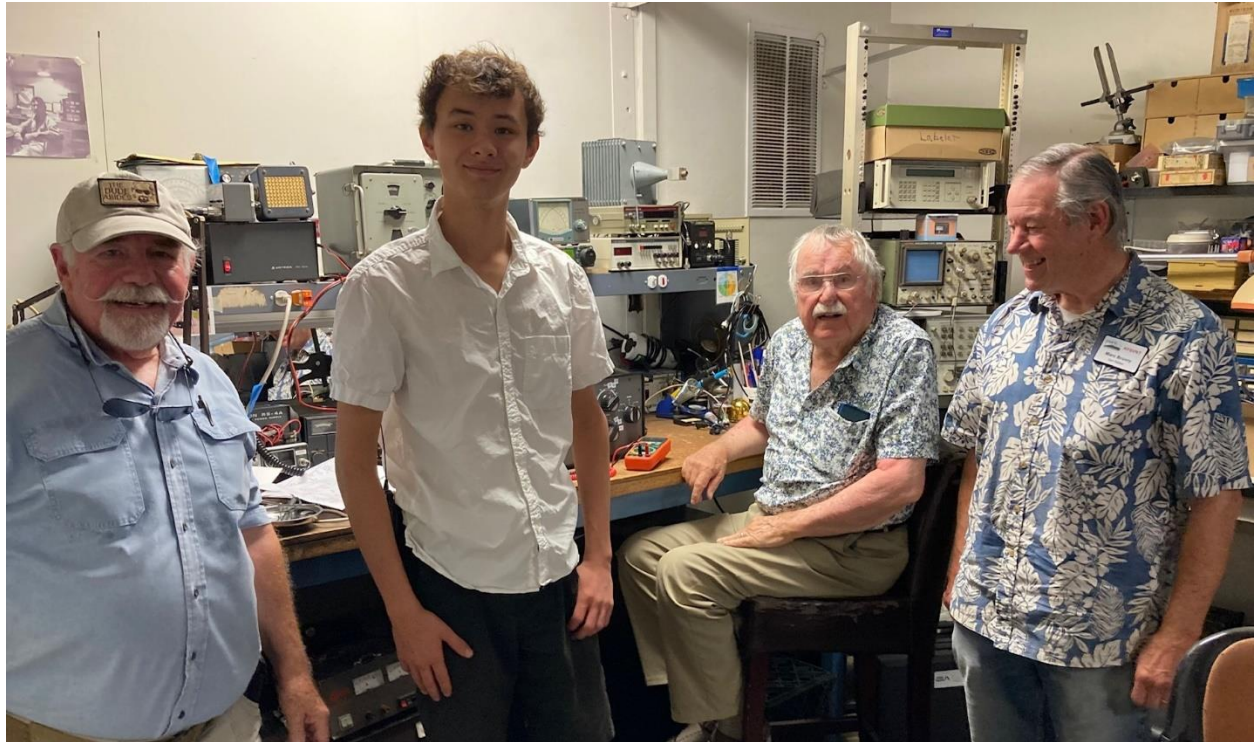


## Marin Amateur Radio Society News

### Clubhouse Cleanup Event

During the Pandemic, a large amount of equipment had been deposited within the clubhouse. With equipment that's sophisticated in nature, club members had to carefully sort through it, determining what was working and what was not, as well as determining the equipment's value. Last weekend, a band of volunteers continued this process. Here are some photographs from this event:









## MCBC Event

One of the many events the Marin Amateur Radio Society assists with are bicycle races. Here's a report from Michael Fischer about the September event:

We had an incident free event as far as I can tell. Some riders got lost and ended up behind the sweeps. I don't think anyone was sagged.

Good job to the net-control team, particularly surviving the destruction of the pop up by the wind. They retrieved the monitor, which prior to that had been displaying video from the course.

The Jackery power center, donated by Brian, was tested for the first time to its full solar charging capability, ending the event 100% full. At times the 4 solar panels delivered over 300 W, 3 times the load.

Michael hiked the gnarly San Geronimo ridge and counted the Spicy riders. Brian

in his first foray as a biker impressed riders with his skinny wheels. MCBC put on a great feast at start-finish. Here are some photographs from the event:











## RCV News

Another function of amateur radio is to provide lines of communication during a disaster. Here is some exciting news from Skip Fedanzo:

This is to let you know that the Marin County Board of Supervisors approved RCV as an official Marin County Program. We're not a pilot project any longer. There will be additional news about this change of status that I'll pass along as it develops.

Please accept my sincere appreciation and gratitude to all of you who joined RCV. Together we've accomplished a great deal by proving we can and will provide radio communications for Community Based Organizations in case all else fails. It couldn't have happened without you.

Stay safe & 73,  
Skip

## 2022 MARS Picnic



### Picnic details

Our 2021 picnic was combined with the Public Service Luncheon and although the 2022 Public Service event included a catered meal at the Marin Rod and Gun Club, we wanted to have the picnic as a separate event. For the previous few years, the club provided burgers and dogs as well as the usual condiments, asking attendees to bring side dishes or desserts. In the years



before that the club supplied a hot grill and condiments but attendees were asked to bring their own protean.

This year as with so many public gatherings during the plague we are trying something new. As some of us are sensitive about germs we will be supplying box lunches as we did at the Public Service Luncheon while at the same time, we will have the grill available for those want their protean hot off the barbi. The picnic won't have a fee, but box lunches do cost more than burgers and dogs, so if you are inclined there will be a jar for you to contribute to the cost. Your contribution is optional. You are also encouraged to bring salads and or desserts.

Miwok Park has a small parking area however members who live in the area tell me that parking on the street around the park is available. I am excited about another face-to-face meeting and about bringing back this fun event. I would also encourage those of you who have go box stations to set up at the park and see if we can make some contacts.

I hope to see you there. If you have questions let me know at [WA6UDS@W6SG.NET](mailto:WA6UDS@W6SG.NET) and remember to rsvp at [rsvp@w6sg.net](mailto:rsvp@w6sg.net)

Curtis WA6UDS

## Clean Up Party

One of the many good things amateur radio operators do is help each other. When a Ham needs assistance, there are always plenty of other Hams willing to roll up their sleeves and get busy working! Don Engler had a rather large antenna and mast he needed removing and our Critical Mass colleagues Tom Jordan and Dan Sobel for volunteered to help remove Don Engler's antenna and sturdy mast! It took an hour and a half to get it done, leaving Don relieved and his wife very happy. Thank you Michael Fischer **K6MLF** for providing the information and photograph.



# Radio Field Event

On Sunday, August 21<sup>st</sup>, an HF field event was held. Here's a write up of the event from Steve Wilson:

the past 5 years the Sun has gone through the minimum phase of its 11-year sunspot cycle. Hams lost interest in HF radio, mostly because it didn't work. This year the Sun has come back to life, with lots of sunspot activity, nearly 2 years ahead of predictions. The increased solar radiation on the earth's ionosphere has made High Frequency radio propagation possible again.

Even during the worst of the low sunspot cycle the Marin RACES hams were still able to communicate using NVIS technology on the HF bands.

NVIS stands for Near Vertical Incident Skywave, a technique widely used by the military around the world and a perfect match for emergency communication in mountainous terrain like Marin County. It is a technique of directing signals, of the right frequency, straight up 200 miles to be reflected back to earth and cover a radius of 300 to 500 miles.

The Marin RACES group has maintained a NVIS network for the past 15+ years as backup communication in case the VHF-UHF repeaters fail and as means of establishing portable field communications anywhere in Marin on short notice. RACES members have built "**Go Boxes**", grab-and-go radio stations that can be taken anywhere in the County that are able to talk around the County, the Bay Area, and the State. These kits include a radio, power AC and DC power supplies and antennas as well as operator necessities. You seldom get a chance to see **go boxes** in the field, normally they don't exist until deployed, and then they would all be in different places.

This event will pull together a group of operators with their go kits and it is your chance to see all the different creative solutions to putting together a field radio station.

If you are considering getting into HF radio for fun or emergency communication, the new miniature radio transceivers, that are now available, make it possible to put a full radio station in your pack and hit the trail for POTA ("Parks On The Air"), SOTA ("Summits On the Air"), BOTA - ("Boats on the Air"), DX expeditions or emergency communication for activities in the wild.

We will be setting up several field stations, with the target frequencies of 7.228 LSB, 3.895 LSB and other bands.

Construction will begin at 9:00 AM with a target of 10:00 to be on the air.



Everyone is welcome, if you have a Go Kit or Field Radio, bring it along to share, We will be talking about making and setting up antennas for field use. If you would like to join us over the air from home or afar look for us on 7.228, 3.895.













## September Critical Mass Event

Despite the chilly and windy conditions, the Marin Amateur Radio Society's Critical Mass event was held on September 18<sup>th</sup>. Attendees met in the jury parking lot at the Marin Civic Center at 10:00 AM. The event was scheduled to end at 12:00 PM. The topics being discussed included an important concept to all radio transmission, VSWR (Voltage Standing Wave Ratio) and Return Loss. Attendees learned what this is, what it means to them as radio operators and how to measure and control it. This discussion also touched on impedance, the Smith Chart and using NanoVNA or other network analyzers for measuring these parameters. A big thanks to James Renney for hosting the event. The next Critical Mass event will be on Sunday, October 16. Rob NZ6J will be our host. Here are some photographs from the September event:









## 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.

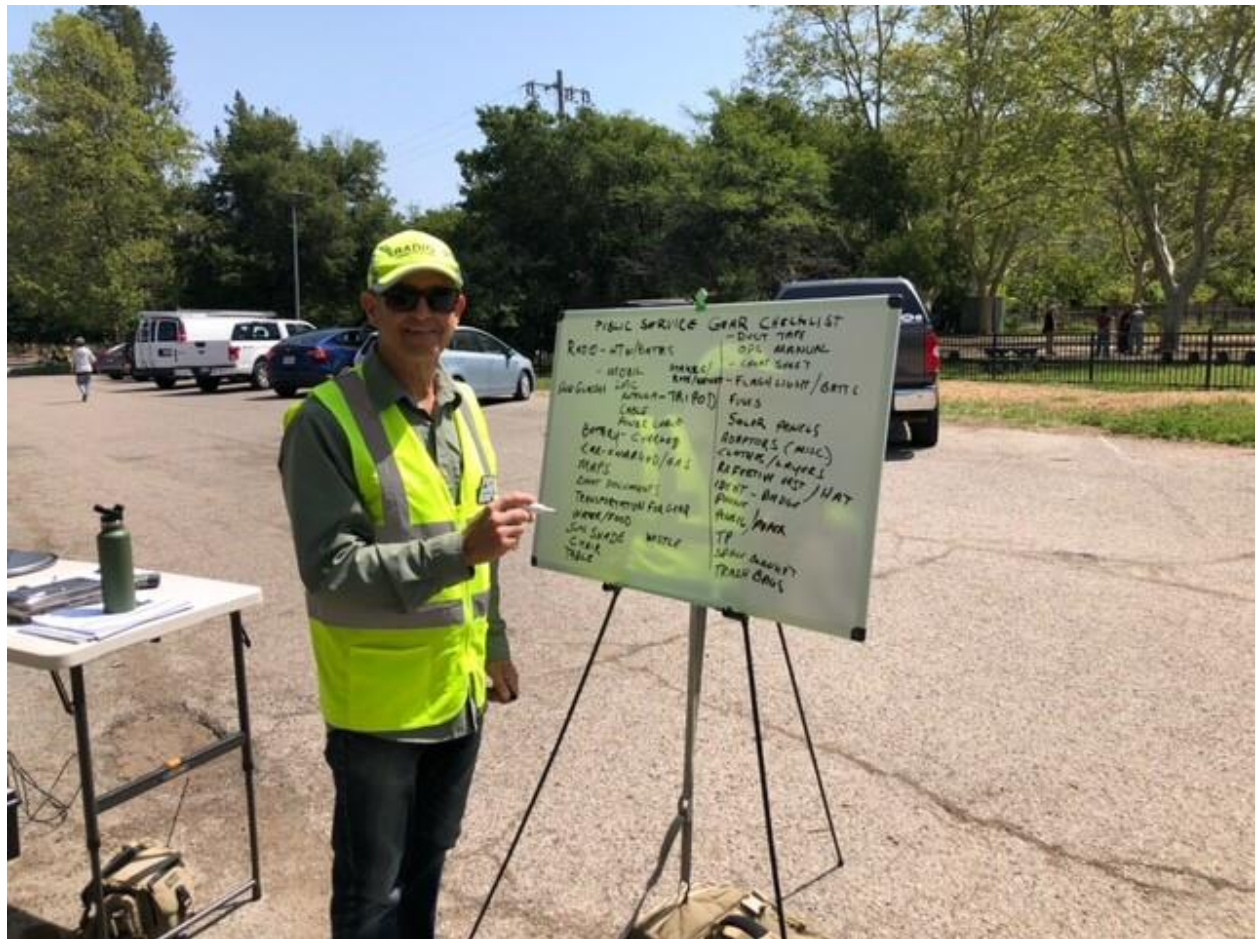
I learned a lot that day. Exactly what I had wanted. Since then, when we meet, we

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.***









## **Dillon Beach to Barnabe Mesh Expansion**

Our MESH network is being further expanded, thanks to a dedicated team of Marin Amateur Radio Society club members. Here are some photographs of the 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:











## July 9th, 2022, VE Test Session Report

The Marin Amateur Radio Society held another Volunteer Examination session on July 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. Here is the final report from Ken regarding the July 9<sup>th</sup> testing session:

Hello All,

Thank you all for being on the MARS VE team. We had a good VE session and one individual hit the trifecta, passing all three class exams.

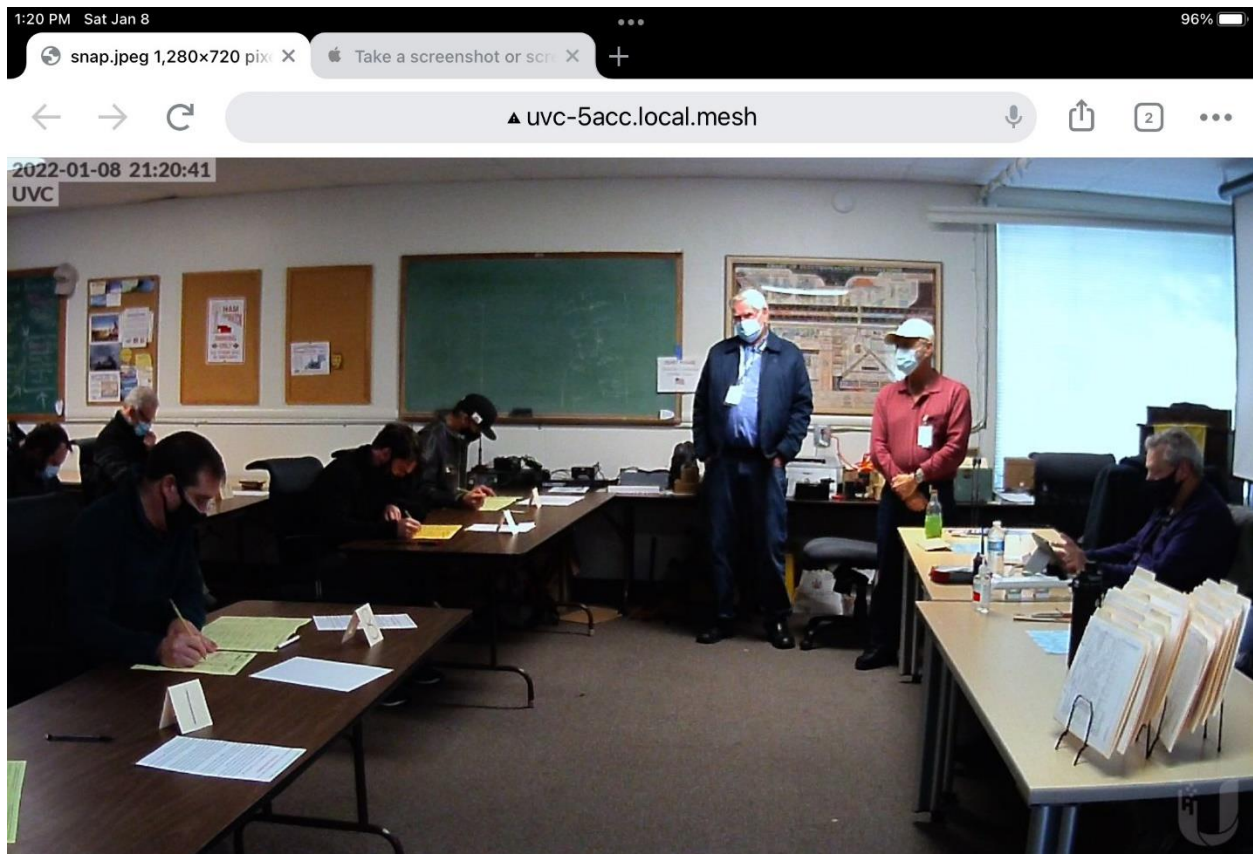
At one time we had 8 applicants that was reduced to 5 due to cancellations. Our applicant pool was distributed to one each from San Francisco, Salinas, Santa Rosa, Alameda, and Mill Valley. The "trifecta winner" was from Alameda. Santa Rosa Has a new General, Salinas has a new Extra, San Francisco has a new Tech and Mill Valley has a new Tech.

The paperwork was uploaded to the ARRL which will be passed on to the FCC Monday morning. The FCC will process the upgrades by close of business Monday. The new Tech licenses will depend on how fast the FCC receives payment from the new Hams. Experience so far says it takes two to three days.

The Next scheduled exam will be 10-8-22.

73

Ken



Here's a photograph of our 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:





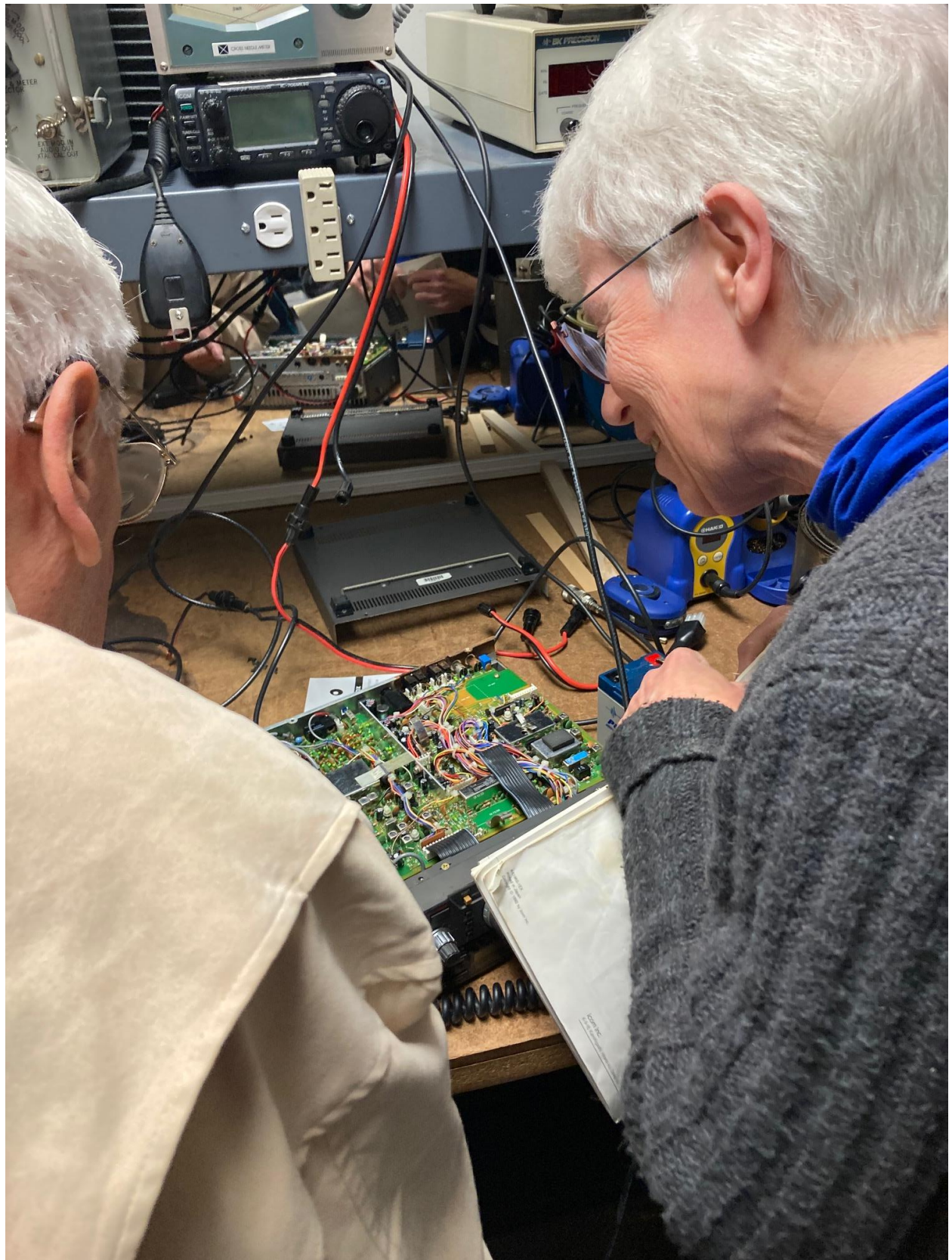












# **NBAM North Bay Area Mesh**

## **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 regionwide 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](#)

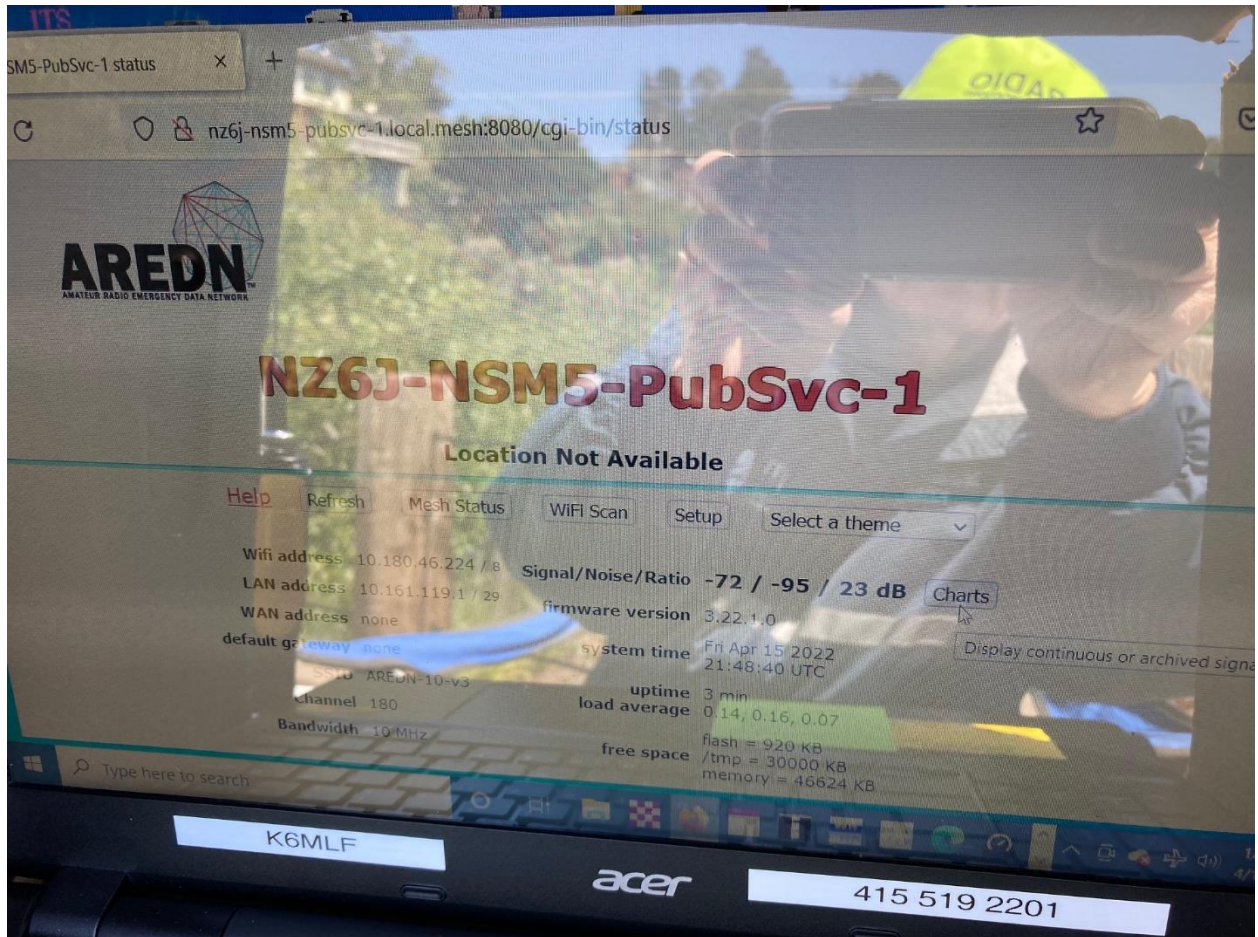
[Setup / LAN](#)

[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			













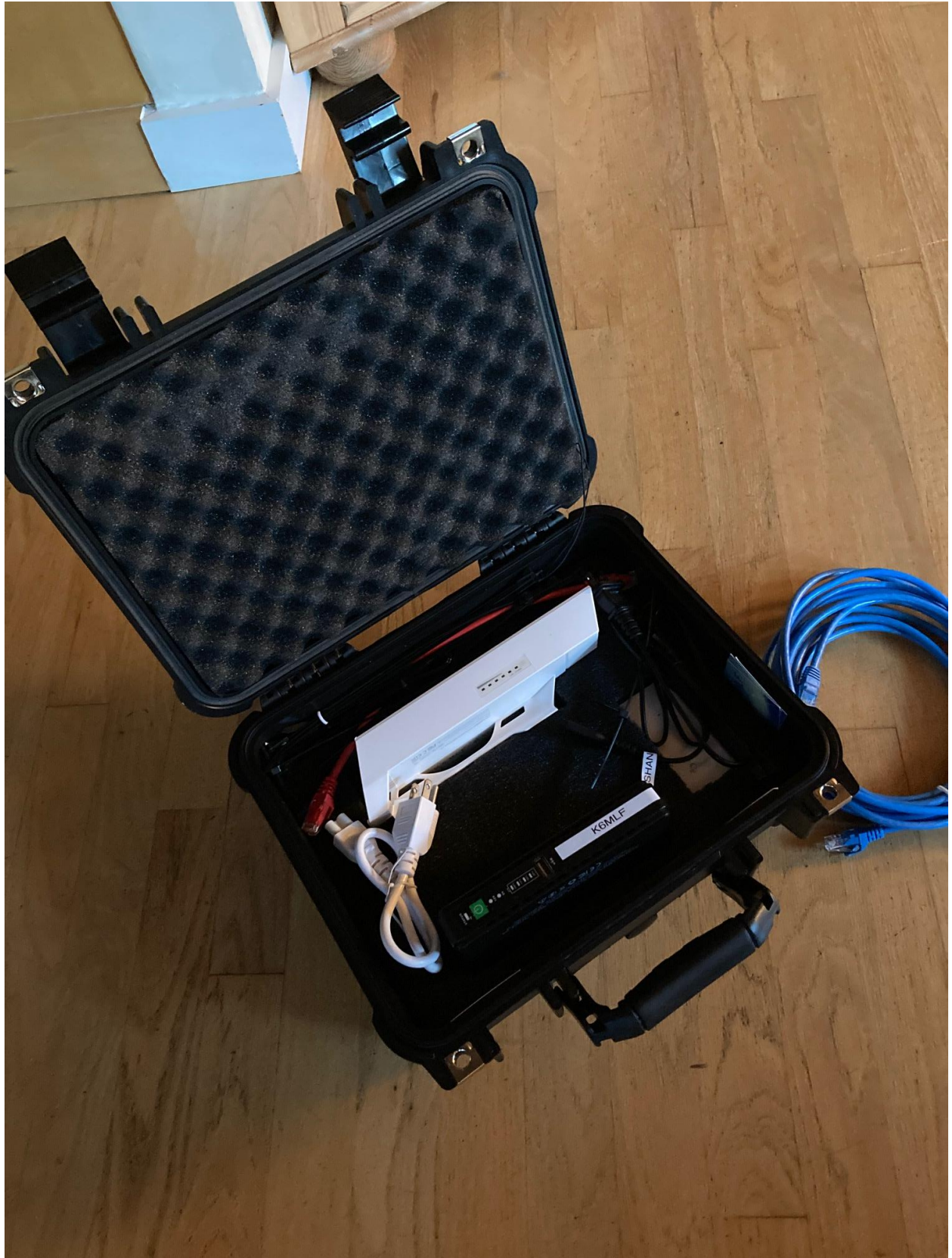


## Portable MESH Unit

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 Amateur Radio operators assisting with the devastation caused by Hurricane Ian:

**Amateur Radio Operators Continue Response to Hurricane Ian:** One of the most important aspects of amateur radio is assisting when disaster strikes. Here's a piece from the ARRL about the role amateur radio has played during this devastating event.

<http://www.arrl.org/news/amateur-radio-operators-continue-response-to-ian>

**Local ham radio operators providing help as Hurricane Ian sweeps across Florida:** This comes from TV Station WTVA (TUPELO, Mississippi). This piece covers how amateur radio operators connect family members with loved ones in the path of the hurricane.

[https://www.wtva.com/news/local-ham-radio-operators-providing-help-as-hurricane-ian-sweeps-across-florida/article\\_f2fda4e8-3f6c-11ed-bd5f-97a1bad70dad.html](https://www.wtva.com/news/local-ham-radio-operators-providing-help-as-hurricane-ian-sweeps-across-florida/article_f2fda4e8-3f6c-11ed-bd5f-97a1bad70dad.html)

**Ham radio operators: A long-lasting technology:** A nice blog piece on the longevity of amateur radio.

<https://www.winknews.com/2022/06/24/ham-radio-operators-a-long-lasting-technology/>

**Ham radio operators practice for emergency:** This comes from the Times online and is a decent article.

<https://www.tnonline.com/20220627/ham-radio-operators-practice-for-emergency/>

**GE Ham News:** This is a great site I found by accident. It was published by General Electric to help sell their vacuum tubes. As an electronics nerd, I am fascinated by these downloadable PDF issues. The dates of publication range from 1938 to 1968.

[https://worldradiohistory.com/GE\\_Ham\\_News.htm](https://worldradiohistory.com/GE_Ham_News.htm)

**Nuclear Power Plant Exercise Includes Amateur Radio Emergency Service:** A Nuclear Power Plant is now bringing amateur radio operators in to help during an emergency:

<http://www.arrl.org/news/nuclear-power-plant-exercise-includes-amateur-radio-emergency-service>

**QST Now Offering a Column for Radio Clubs:** This should be of interest to all radio clubs:

<https://www.arrl.org/news/qst-now-offering-a-column-for-radio-clubs>

**Why is it called Ham Radio?** This one comes from our own Anthony Fedanzo:

<https://fieldradio.org/why-is-it-called-ham-radio/>

**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>

**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/>

*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\\_baof](https://www.reddit.com/r/ukraine/comments/t2mj0i/they_really_are_using_baof)



[eng\\_radios/](#)

**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 Grants an ARRL Emergency Request to Permit Higher Data Rate Transmissions for Hurricane Relief Communications:** The FCC has granted an [ARRL](#) emergency request for a 60-day temporary waiver intended to facilitate amateur radio emergency communications for hurricane relief.

<https://www.arrl.org/news/fcc-grants-an-arrrl-emergency-request-to-permit-higher-data-rate-transmissions-for-hurricane-relief-c>

**FCC Hiring for High Frequency Direction Finding Center:** Just in case you're looking for a career change:

<http://www.arrl.org/news/fcc-hiring-for-high-frequency-direction-finding-center>

**FCC Legacy CORES System to be Retired:** It seems that the FCC is retiring their CORES system:

<https://www.arrl.org/news/fcc-legacy-cores-system-to-be-retired>

**FCC Proposes Record \$34,000 Fine for Alleged Interference and Unauthorized Transmissions During Idaho Wildfire:** The FCC takes using unauthorized frequencies very seriously.

<http://www.arrl.org/news/fcc-proposes-record-34-000-fine-for-alleged-interference-and-unauthorized-transmissions-during-idaho>

**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>

**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-748>

**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/>