

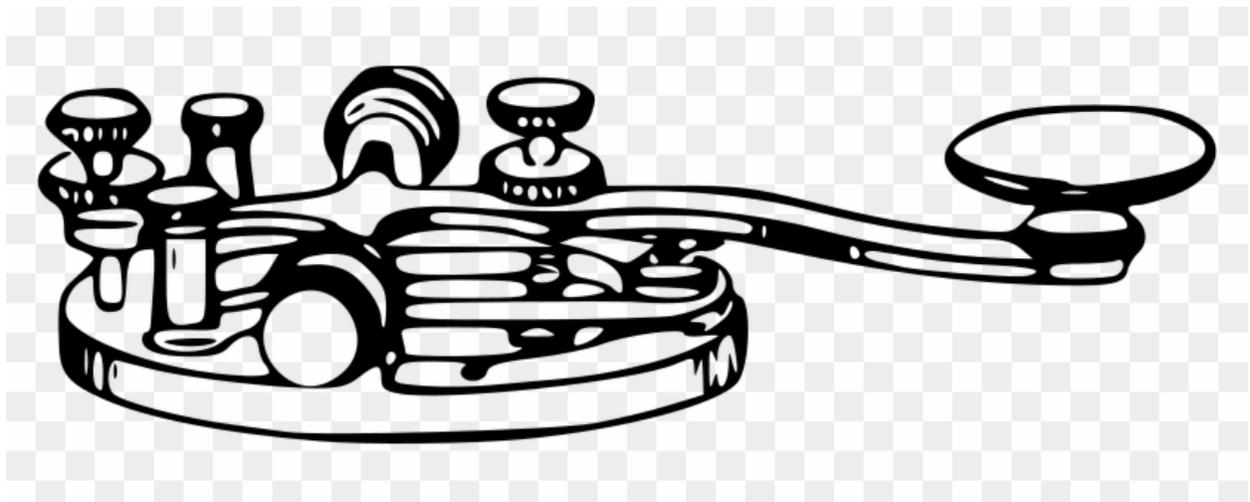


# QSA-5

## Marin Amateur Radio Society Monthly Newsletter

Established 1933

September 2025



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

## From Our President:

Labor Day has come and gone. All my white linen suits have been packed away. We can now get down to having BBQ at the club picnic. Saturday 13 September at 11:00 am at Stafford Lake Park in Novato. We will be at Area 1, the same place as last year's picnic and Field Day. If you are planning to attend please let us know by emailing [RSVP@W6SG.NET](mailto:RSVP@W6SG.NET). This year we are charging \$30 per person. If you cannot afford that some scholarships are available, email me at [WA6UDS@W6SG.NET](mailto:WA6UDS@W6SG.NET). You can get more information, pay online, and make your reservation at [https://w6sg.net/picnic\\_2025.php](https://w6sg.net/picnic_2025.php) You can also pay at the picnic but that will cost \$35. Please wear your badge if you have one. I will be making name tags you can pick up there.

On a more somber note, I have sat on making this announcement because it is hard for me to process. On August 8, 2025, Jan Leja WB6SPX became a silent key. Jan joined the club in 2016 and, for years, donated his time, money, knowledge, and wit to the betterment of our club. He volunteered for public services, donated money, helped people repair their radios on Sunday mornings and entertained us all with his stories. In 2017 and 2019 he was awarded the John Butler "Elmer" Award for mentoring. It was for me a pleasure to watch him walk someone through the repair of their radio, explaining what he was doing in words the other person could understand. That kind of respect for others and generosity with time is getting increasingly rare.

I consider myself a descent storyteller but Jan clearly rose to the level of raconteur. His tales were always funny, containing all sorts of relevant details, and always had a point as well. During the Fun with Ham Radio section of the meetings, I would always look forward to his contributions and you all got more wisdom from him than from listening to me blathering. Jan was also a master diagnostician. He continued to impress me with ability to get right to the issue. My life was made better by knowing him, and I know many of you feel the same.



73 de wa6uds

## **From the Editor:**

Greetings everyone! It's September and Summer is now in the rearview mirror. Costco is already putting up Christmas items (I can't be the only one who finds this dreadful)! Fall, and chilly weather, is in our future, although you wouldn't know it based on the heatwave we've recently experienced. Seasons change, year after year. However, one thing remains constant, amateur radio operators are always ready to step up in time of disaster.

The Marin Amateur Radio Society has had a full and active summer and will assist our community and neighboring communities with various events throughout the remains of the year. Getting your amateur radio license means more than just talking on the radio. It puts the license holder in a position to provide a source of communication during emergencies when

the most used communication devices, cellphones and the internet, may not function. Thankfully, amateur radio operators are happy to use their skills when all else fails. People who become amateur radio operators seem to come into our hobby with a built-in desire to help others. Considering the huge number of wildfires we're having in California, it's good to know that there are plenty of amateurs ready to help.

Thanks to Curtiss Kim and the usual suspects for their contributions. As always, if you want to see something within the pages of the QSA-5, contact me and I'll get it published. I'd like to see more suggestions from readers so we can make this publication better. After all, this is your publication! I just cut and paste, occasionally tapping the rudder to keep our course true. Have a great September everyone!

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



### **New Members:**

Eduardo Rodriguez KK6UVD – Vallejo

Ed Shelden KO6IDJ - Richmond

Vojin Oklobdzija WF1A – Berkeley

Steve Lochner N6UP - San Francisco



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

**Marin Amateur Radio Society Board of Directors Meeting 8/7/2025**



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

**President:** Curtis Ardourel WA6UDS

**Vice President:** Ken Brownfield AB6JR

**Secretary:** James Saltzgaber KM6WWY

**Treasurer:** Bruce Bartel N6VLB

**Director:** Richard Cochran AG6QR

**Director:** Steve Toquinto KB6HOH

**Director:** Ed Essick K6ELE

**Trustee W6SG:** Marc Bruvry KF6VNT

**Trustee K6GWE:** Brian Cooley K6EZX

**Adopt agenda** – MSC without objection to adopt agenda as amended: “Next Regular Meeting 5 September and Next Board Meeting 11 September”.

**Approve minutes of 10 July board meeting** MSC to approve minutes as published in August 2025 QSA-5

**Secretary’s Report/Communications-** Jim KM6WWY – Nothing to report

**Treasurer’s Report-** Bruce N6VLB- No Report

**Members Present:** Milt Hyams KM6ASI, Dan Sobel N6HLZ, Michael Ham WA6LCN, Scott Pasternak KN6ZDM, Doug Kaye K6DRK, Kathy Spiicher KM6URP

**Committee and other Reports:**

1. **Membership** -- Curtis WA6UDS Present membership =157 This is 95% of this time last year. (88%)

2. **Facilities** Skip – Not Present
3. **VOAD/RCV** Skip – Not Present
4. **Technical** Milt – Repeaters worked well for Marin Century event, no complaints. Radio Room upgrade is now approx. 90% complete.
5. **Public Service** Scott KN6ZDM – Marin Century event was very successful, repeaters worked great. There will be a dinner for participants on Thursday 8/14 to de-brief and look for opportunities to improve. Next event is Double Dipsea 8/23, with 4 more events this year. Milt KM6ASI- APRS worked VERY well on this event. Thanks to Doug Kaye for his work on the APRS system.
6. **VE Testing** Jim KM6WWY – Last session was July 12th, Ken AB6JR presided. 2 new technicians and one Extra upgrade. Curtis reminded us that new technician licensees are eligible for free first year MARS club membership. Next session is October 11th at the clubhouse, 1:00 pm. No applicants currently. Permission was requested to post 2026 VE schedule on ARRL website using same schedule format with the modification of October changed to 1st Saturday due to conflict with Pacificon event. MSC to approve posting of 2026 schedule on ARRL website.

7. **Comm Truck** Charlie AI6TT – Not Present Milt KM6ASI – Comm Truck performed well at Marin Century event. Jim KM6WWY- Milt KM6ASI and Dan N6HLZ installed new wiring, outside receptacle, power cord and cord reel for the van shore power. Cable is no longer on the ground.
8. **NBAM** Kathy KM6URP – Summertime vacations have put some projects on hold. Bodega Bay is actively working on their installation project. Sonoma County Radio Amateurs had a tech class and Kathy set up Winlink via Telnet AREDN demonstration for the new Hams. Kathy attended the new Petaluma Public Safety Building proposal meeting and presented the need for AREDN infrastructure in the new building during planning stages. Mesh demo station may be set up at MARS picnic, this will be discussed at next MBAM meeting. Young Eagles and girls in aviation event is in September at Santa Rosa Airport. NBAM will set up a demo at the event.
9. **Picnic** Steve KB6HOH- Stafford Lake Park September 13th. Steve has contacted Forest Fire BBQ but has not received an answer. If he is not available, we will fall back to Hamburgers and hot dogs. Cost is estimated to be \$30/person. Curtis put out a survey on charging for the picnic and how much. All respondents were in favor of charging for the food. Curtis will put out an RSVP letter tomorrow (8/8/2025). Motion was made to charge for picnic with BBQ catered lunch at \$30, with a lesser amount if we do Burgers and dogs, Seconded and Carried without objection. Steve- Final Picnic Committee meeting will be on September 10th. Jim KM6WWY will submit the Special Use Permit application for Stafford Lake Park.

### **Old Business:**

1. Donations Committee Charter – Curtis WA6UDS is still working on the details of the charter.
2. New Google environment – Online storage of club records Bruce N6VLB– Things are ready to move files to the new drive. Permissions need to be set up accordingly. Curtis noted that we have had some accidental file deletions that he has restored. We have access to Google meets for meetings. It was tested and we encountered problems. Continuing work will be done to work out the issues.
3. Michael Ham WA6LCN is offering a Starlink station if the club picks up the \$10 per month fee. Following discussion, there were questions regarding the resulting actual data rates, how it is billed for non-use periods, and what the roaming portability permissions were. It was suggested that we try it for 1 year and evaluate its cost and usefulness. Milt KM6ASI and others agreed this would be a good tool to have available to the club. This item will be further investigated and revisited upon Rob NZ6J's return.

4.

**New Business:**

1. KWMR- Curtiss KM6GUY - Withdrawn
2. Club "Business Cards" – Curtis WA6UDS – has been printing MARS business cards with QR code to a web page. We gave those out at Field Day. Discussion was that we create a multi- topic "Landing Page" or "Referral Page" on our website to make the cards truly multi- functional rather than a specific event page. Curtis will put up a web page to start the system before getting cards printed by Vistaprint. Scott KN6ZDM -Public interest experienced at public service has been from non-hams and people interested in finding out more about ham radio. It would be good to address this interest on the landing page. Curtis will put together a "referral page" for board discussion before having any cards printed.
3. APRS – Doug Kaye K6DRK – This is year 3 of using APRS on public service events. Our position coverage has steadily improved. Proposes to put up a more complete IGATE

system. Presently we have 5 installed, including 3 club-owned units at Barnabe Mt., Pt. Reyes Station, and Scott's KN6ZDM boat in Sausalito. Additional coverage is obtained by putting up guerilla temporary stations for events and taking them down at the completion of the events. It would be nice to have more permanent installations. We could hopefully use our connections in the community to get permanent locations. Michael Ham has donated 2 Meshtastic tracking nodes for testing as well. Curtis – Would like Doug to do a presentation to the general meeting audience. He will do it at the September meeting. Financing issues would have to be taken up with the board. Getting commercial hilltop locations has been extremely difficult. Kathy KM6URP– Sonoma County hams have been putting up Meshtastic nodes and encourages MARS to implement it as well. Giving the club membership a better understanding of how this works would be beneficial. There are a lot of devices available now. Doug showed a homebrew node that is being used for tracking only. An APRS IGate has been installed at the Pt. Reyes Fire Station. Scott KN6ZDN- Not only will this be good for Public Service use, but there is also a lot of other data being passed through the IGates.

**Good of the Order** – Nothing noted

**Executive Session** – Not Required

**Adjourn** - MSC 2103 to adjourn.

**Next Regular Meeting 5 September 2025**

**Next Board Meeting 11 September 2025**

# Marin Amateur Radio Club

## Balance Sheet Comparison

As of August 30, 2025

	TOTAL	
	AS OF AUG 30, 2025	AS OF AUG 30, 2024 (PY)
ASSETS		
Current Assets		
Bank Accounts		
B of A Facilities Account - 8795	1,516.40	4,884.90
B of A General account - 4328	83,196.64	79,093.71
CD	0.00	0.00
Money Market	0.00	0.00
VE Session Cash	0.00	0.00
VE Session Cash Received	0.00	0.00
<b>Total Bank Accounts</b>	<b>\$84,713.04</b>	<b>\$83,978.61</b>
Other Current Assets		
Uncategorized Asset	0.00	385.00
<b>Total Other Current Assets</b>	<b>\$0.00</b>	<b>\$385.00</b>
<b>Total Current Assets</b>	<b>\$84,713.04</b>	<b>\$84,363.61</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>\$143,696.04</b>	<b>\$143,346.61</b>
LIABILITIES AND EQUITY		
Liabilities		
<b>Total Liabilities</b>		
Equity		
Opening Balance Net Assets	124,400.00	124,400.00
Retained Earnings	15,577.46	13,748.91
Net Income	3,718.58	5,197.70
<b>Total Equity</b>	<b>\$143,696.04</b>	<b>\$143,346.61</b>
<b>TOTAL LIABILITIES AND EQUITY</b>	<b>\$143,696.04</b>	<b>\$143,346.61</b>

# Marin Amateur Radio Club

## Profit and Loss

January 1 - August 30, 2025

### TOTAL

JAN 1 - AUG 30, 2025      JAN 1 - AUG 30, 2024 (PY)

Income		
Christmas Party Income		640.00
Donations	7,017.65	32,020.51
Dues	2,880.00	270.00
Public Service Refund		168.15
Rent	21,870.00	23,700.00
Unapplied Cash Payment Income		385.00
<b>Total Income</b>	<b>\$31,767.65</b>	<b>\$57,183.66</b>
<b>GROSS PROFIT</b>	<b>\$31,767.65</b>	<b>\$57,183.66</b>
Expenses		
Accounting	1,996.61	1,480.00
Awards	400.00	
Car & Truck	354.94	2,224.89
Car & Truck Gas	34.89	88.02
<b>Total Car &amp; Truck</b>	<b>389.83</b>	<b>2,312.91</b>
Christmas Party		2,970.23
Contractors		21,109.00
Equipment < \$2,500	431.48	
Field day	341.91	854.66
Food	1,100.12	76.89
Garbage	424.88	402.48
Housekeeping		839.85
Insurance	4,010.29	2,832.50
Comm Van Insurance	2,308.84	2,241.52
<b>Total Insurance</b>	<b>6,319.13</b>	<b>5,074.02</b>
Meals	70.77	235.24
Office Supplies & Software	104.00	18.00
Other Business Expenses	575.32	

Picnic		387.80
Public Service Expense	3,295.57	4,009.18
Reimbursable Expenses		20.00
Repair & Maintenance	1,521.63	967.06
Repeater		2,138.67
Station Upgrades & Maintenance	1,894.69	
Taxes & Licenses	4,164.36	4,099.67
Utilities	3,292.32	2,957.90
Water	593.45	1,330.79
Web Services Expenses	0.00	
<b>Total Expenses</b>	<b>\$26,916.07</b>	<b>\$51,284.35</b>
<b>NET OPERATING INCOME</b>	<b>\$4,851.58</b>	<b>\$5,899.31</b>
Other Expenses		
MESH Grant Disbursement	1,133.00	701.61
<b>Total Other Expenses</b>	<b>\$1,133.00</b>	<b>\$701.61</b>
<b>NET OTHER INCOME</b>	<b>\$ -1,133.00</b>	<b>\$ -701.61</b>
<b>NET INCOME</b>	<b>\$3,718.58</b>	<b>\$5,197.70</b>

# LIFE IS SIMPLE



# MARS Club News

## MARS Club Picnic

Saturday September 13 2025 at Noon



The MARS Club Picnic for 2025 will be taking place on Saturday September 13 starting at 11:00 Am with food to be served at Noon. We will be using the same Barbecue company that catered last years picnic and we will be at the same location: Area 1 at Stafford Lake Park in Novato. There is a lot of planning and preparation we need to do before the date so we are looking for a few volunteers to join the Picnic Planning Committee. The committee will meet on zoom on 7/23, 8/27, and 9/10 at 8:00 PM. If you are interested in helping out please let Steve KB6HOH know by emailing to [rsvp@w6sg.net](mailto:rsvp@w6sg.net)

73 de wa6uds and kb6hoh

## **Hey, Hey, Hey, a Pic-a-nic is Coming**

by Curtiss Kim KM6GUY

Remember Yogi Bear's famous line about a picnic? "Hey, Boo-Boo, let's go get us a pic-a-nic basket!". Well MARS is having a pic-a-nic and you're invited. If you're smarter than the av-er-age bear you'll take advantage of the opportunity to get together and share some food, fun and fricassée. Actually it's BBQ from Firehouse. The menu is the same as in the past, pork ribs, chicken, baked beans, cole slaw, potato salad, mac & cheese, and cob corn. Of course there'll be drinks and dessert. You'll have to get yourself down to Jellystone Park (Stafford Lake Park in Novato) for the shindig on Saturday, September 13th starting at high noon. There is a "Boo Boo" this year. MARS has been "dode'd" by the world's richest man forcing Ranger Smith to collect for the vittles. \$30 per person (or bear) for all you can eat. Don't be a Snagglepuss. For reservations you can go to [RSVP@W6SG.NET](mailto:RSVP@W6SG.NET).



## **APRS Speaking at September MARS Meeting**

Greetings

For our September 5th meeting we will have a speaker. Doug Kaye K6DRK will talk about APRS and how we use it for public service. Doug has spent the last couple of Public Service seasons making APRS an increasingly more useful tool for our team to track folks involved in the event. We will look at hardware and

software tools working together. If you intend to come in person please let me know at [RSVP@w6sg.net](mailto:RSVP@w6sg.net) so I can make sure there is enough pizza.

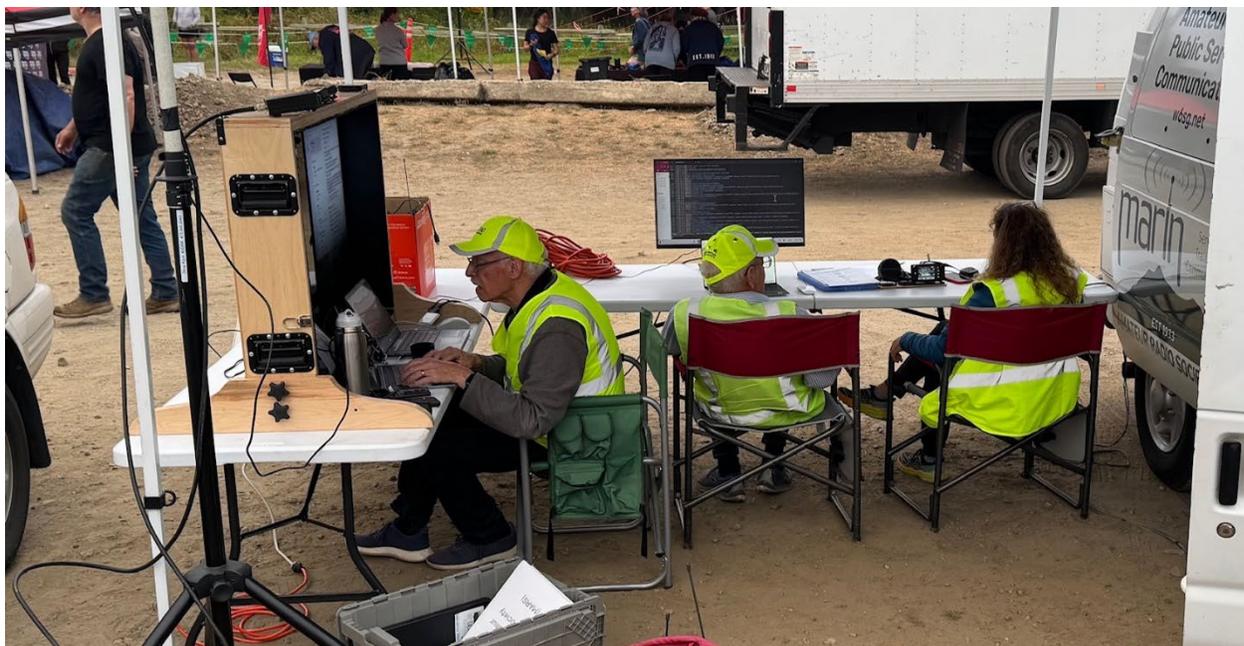
73 DE WA6UDS

Curtis Ardourel

President and Membership Chair

Marin Amateur Radio Society

[WA6UDS@W6SG.NET](mailto:WA6UDS@W6SG.NET)



## Volunteer Examiner News

**Dates remaining on our 2025 schedule are Oct 11<sup>th</sup>.** As always, testing starts at 1:00pm, however, applicants should plan on getting there 30 minutes early. Testing takes place at the clubhouse at 27 Shell Road, Mill Valley. Applicants should make sure they have the FRN number with them.

The ARRL Volunteer Examiner's (VE) program has played a pivotal role in the licensing of amateur radio operators in the United States since its inception in 1984.

Prior to the establishment of the VE program, amateur radio licensing exams were administered exclusively by the Federal Communications Commission (FCC). This process was often cumbersome, requiring candidates to travel to FCC offices, which were not always conveniently located. The introduction of the VE program decentralized the examination process, making it more accessible to aspiring operators. Under this program, qualified volunteers, themselves licensed amateur radio operators, were authorized to administer exams, significantly streamlining the licensing process and encouraging greater participation in the hobby.

The VE program is a cornerstone of the amateur radio community, reflecting its ethos of self-regulation and mutual support. By empowering experienced operators to oversee the licensing process, the program fosters a sense of responsibility and mentorship within the community. Volunteer Examiners are required to meet stringent qualifications, ensuring that they possess the knowledge and integrity necessary to uphold the standards of the amateur radio service. This peer-driven approach not only maintains the credibility of the licensing process but also strengthens the bonds within the amateur radio community, as new operators are welcomed and guided by those who share their passion for the hobby.

The importance of the VE program extends beyond its practical function of administering exams. It has been instrumental in promoting the growth and diversity of amateur radio. By making the licensing process more accessible, the program has lowered barriers to entry, enabling individuals from all walks of life to become licensed operators. This inclusivity has helped amateur radio remain relevant in an era of rapid technological change, attracting new generations of operators who bring fresh perspectives and innovations to the field. The VE program has thus played a crucial role in ensuring the continued vitality of amateur radio as a dynamic and evolving pursuit.

Moreover, the VE program has had a profound impact on emergency communications and public service. Amateur radio operators are often called upon to provide critical communication support during disasters and emergencies, when traditional communication infrastructure may be compromised. By facilitating the licensing of new operators, the VE program helps to expand the pool of skilled individuals who can contribute to these efforts. The program's emphasis on

rigorous testing ensures that licensed operators are well-prepared to handle the technical and operational challenges of emergency communication, thereby enhancing the overall resilience of the amateur radio service.

In summary, the ARRL Volunteer Examiner's program has been a transformative force in the world of amateur radio. By decentralizing the licensing process, fostering community engagement, and promoting inclusivity, the program has made amateur radio more accessible and vibrant. Its role in supporting emergency communications further underscores its significance, as it equips new operators with the skills needed to serve their communities in times of crisis. The VE program stands as a testament to the enduring spirit of amateur radio, embodying its values of innovation, collaboration, and public service.





## 2025 North Bay 2-Meter Critical Mass Calendar

### 2025

September 21<sup>st</sup> (third Sunday) James

October 26<sup>th</sup> (fourth Sunday; third is Pacificon) Milt

November 16<sup>th</sup> (third Sunday) Rob

December 14<sup>th</sup> (second Sunday; third is too close to Christmas) Michael

## North Bay Critical Mass Report

---

The North Bay Critical Mass Radio Group, affiliated with the Marin Amateur Radio Society (MARS), focuses on practicing and maintaining amateur radio communication skills for potential use during emergencies and public service events.

Here's a breakdown of what they do:

- **Monthly Practice Sessions:** They meet each month to practice various communication skills using 2-meter band radios, including getting on the air, setting up equipment, and contacting other stations. These practice sessions help participants familiarize themselves with radio procedures and troubleshoot potential issues.
- **Emergency Preparedness:** The group contributes to local emergency preparedness by ensuring their members are ready to provide communication support in the event of a disaster. This includes

collaborating with organizations like RACES (Radio Amateur Civil Emergency Service) and CERT (Community Emergency Response Team).

- Public Service Events: They also participate in public service events, using their radio communication skills to assist with logistics and communication needs.
- Skill Development: The group provides an environment for members to learn and refine their amateur radio skills, including using the phonetic alphabet, operating on different frequencies, and maintaining their radios.
- Community Engagement: While the core focus is on radio skills, the group fosters a sense of community among amateur radio enthusiasts in the North Bay.

## August Meeting Highlights

Here's a break-down of the August meeting: They at the jury parking lot next to the lagoon behind the Frank Lloyd Civic Center in San Rafael

They practiced hands-on radio communication, simulating a reprise of the 2025 Dipsea footrace radio comms.

The group practiced best practices radio protocol and assigned several operators to take a turn at net control (all three positions). In addition to the most-frequently-used voice traffic, event leaders also asked each team to send a brief piece of written traffic.

In preparation for this main part of the gathering, participants were asked to re-review the 6-minute video that our friend Brian Cooley K6EZX produced several years ago: <https://www.youtube.com/watch?v=HHxNOMGSwAI>

For the last 30-35 minutes of our session, Jay Hamilton-Roth KO6FIR led the group in a further discussion of why—and how best—to use their radios when they found themselves traveling away from home. Below is an outline of Jay's thoughts for radio-travelers.

This session was to be geared to the new (or relatively) newly-licensed hams—that means that they would REALLY like to see a bunch of Elmers to assist.

North Bay Critical Mass gathers at 10am every third Sunday (unless there's a good reason to postpone a week, like Fathers' Day or Christmas) and have a "hard

stop” at noon. Doughnuts often somehow magically materialize, but ya gotta bring your own coffee. Bring your dog, bring a friend, bring your good humor!

## **North Bay 2 Meter Critical Mass: Traveling with your Radio**

August 17, 2025

- Why?
  - Practice Skills (incl. troubleshooting)
  - Stay in touch with people at home
  - Learn from the locals
  
- Equipment
  - A go-box is self-contained, but weighs around 10# and cannot be in checked luggage. Probably better to bring HT (or 2).
  - Manual for radio, battery charger/USB-C
  
- Frequencies
  - 146.52 - National Calling frequency (Simplex) - do you monitor this?
  - Repeaterbook [bicycling & repeater exercise]
  - Ask local ham clubs in the area for “good” frequencies
  - Reach out to the ARRL section manager of the division for info
  - Learn the topology & naming of the area landmarks
  - Preprogram your equipment (but be willing to adapt)
  
- Cold Calling
  - Unless you’re trying to contact a club’s check in, you’ll need a reason to call (other than a radio check). Be open to a give-and-take chat:
    - What information do you need? Ham-related info? Club events? Travel info?
    - What information can you share? How “we” do things (nets, technology, events, etc.)
  - Better to reach out on a club/group’s repeater (more people likely monitoring) rather than a private/closed repeater. Not all repeaters are actively monitored/in-use.
  - Monitor the frequency first to learn how people communicate. [e.g., difference in MARS & Hamilton Wireless Association net protocols]
  - If you can’t reach a repeater, consider contacting the repeater’s trustee to learn more – especially if you’re planning on returning to the area.

- Calling Friends
  - If using digital radio (DMR, DSTAR, etc.) make sure you're both on the same network (Brandmeister vs. TRBO), using the same talkgroup, and you both have access to the talkgroup on the correct channel of the repeater.
  - Hot spots

Here's a list of Marin County and other Important Repeaters held over from last month for any new club members:

Note: Printed 2/22/2025 on Waterproof Paper!				
<a href="https://docs.google.com/spreadsheets/d/1siMIQr4cHAUCq6ybSt6XVpAQWRdJHEwQ_M6ZBMQpAnw/edit?">https://docs.google.com/spreadsheets/d/1siMIQr4cHAUCq6ybSt6XVpAQWRdJHEwQ_M6ZBMQpAnw/edit?</a>				
<b>Marin County and other repeaters</b>				
Install <b>Repeaterbook</b> on your phone: <a href="https://www.repeaterbook.com/index.php/en/">https://www.repeaterbook.com/index.php/en/</a> . Not the ARRL book!				
Repeater	Your receive Frequency (MHz)	PL tone (Hz)	Location	Offset
Simulcast Bahia	146.700	203.5	Novato	-600kHz
Simulcast Mt Tam	146.700	179.9	Middle peak	-600kHz
Simulcast Barnabe	146.700	167.9	Mt Barnabe	-600kHz
Simulcast West Peak	146.700	192.8	West peak	-600kHz
Tam West	147.330	192.8	West peak	+600kHz
Mt Tam UHF (damaged feed lin	443.250	179.9	Middle peak	+5MHz
Big Rock UHF	447.175	156.7	Big Rock Ridge	-5MHz non standard
Dollar Hill UHF	440.925	162.2	San Rafael	+5MHz
Barnabe UHF	444.125	151.4	Mt Barnabe	+5MHz
Muir beach	442.225	141.3	Muir Beach	+5MHz
Tiburon fire station 9	442.125	146.2	Overlook	+5MHz
North Marin Simplex	147.585	n/a	Strawberry	+5MHz
Central Marin Simplex	147.510	n/a		
South Marin Simplex "Nickels"	147.555	n/a		
West Marin Simplex	147.465	n/a		
Wolfback Ridge DMR	442.525	CC2, TS1 Norca	Wolfback Ridge, Sausalito	+5MHz
Bolinas DMR	440.138	CC3, TS1	Commonweal	+5MHz
Novato KG6MZV	440.500	CC1, TZ1	Novato	+5MHz
<b>San Francisco repeaters</b>				

Sutro tower W6PW	145.150	DCS664	Sutro Tower, SF	
SFACS WA6GG	442.050	127.3		+5MHz
Sutro DMR	444.225	CC1, TS1	Sutro Tower	+5MHz
<b>East Bay Repeaters</b>				
Mt Diablo	147.060	100	Mt Diablo	+600kHz
San Leandro	147.240	107.2	San Leandro	+600kHz
W6CX DMR	145.000	CC1, TS1	Mt Diablo	+2.5MHz
Carla Orinda DMR	443.500	CC1, TS1	Orinda	+5MHz
Grizzly	145.290	131.8		
<b>Sonoma County Repeaters</b>				
Sonoma Mountain	146.910	88.5	Petaluma	-600kHz
English Hill	147.315	88.5	Sebastapol	+600kHz
English Hill DMR	443.100	CC1, TS1	Sebastapol	+5MHz

# ACS/RCV Mission Statement

**Mission:** During national, regional, or local emergencies provide effective backup radiocommunications in support of the EOC/VOAD and Community Based Organizations (CBOs) or other non-public safety agencies within the Marin County OA when requested by competent authority.

**Capabilities:** Proven ability to establish and maintain radio communications between OA EOC/VOAD and CBOs during exercises including the three annual Golden Eagle and two Great Shakeout exercises. Ability to deploy and operate portable stations as needed to establish reliable communications in areas that are otherwise out of touch with the EOC/VOAD.

**Resources:** Develop and maintain the resources that may be needed to support the overall mission:

1. Operators – A corps of trusted radio operators with: (1) basic skills and a commitment to establishing radio communications when needed; (2) ongoing participation, training, and practice in accurately passing message traffic using a variety of basic analog and specialized digital means.
2. Mobile stations – Individual operators routinely test and maintain their own radio transceivers and related equipment including power supplies, which can be deployed to locations otherwise lacking reliable communications with the EOC/VOAD or between two or more CBOs.
3. Relationships – Establish on-going relationships of familiarity and trust between RCV operators and with key staff of served agencies, including EOC and VOAD.

# HF Radio 101

## Homemade Rybakov Antenna

From Hugh KN6KNB

### Understanding the Rybakov Antenna

The Rybakov Antenna described here is for use with the 10-, 12-, and 15-meter bands. I've gotten the 20- and 40-meter bands with this antenna; however, it works best with the 10-to-15-meter bands. I've kept the instructions very basic because there isn't much to it. It's a pole, wire, and Unun, and that's its brilliance.

The Rybakov antenna is a unique and effective design, particularly popular among amateur radio operators for portable and field operations. At its core, it's a vertical antenna that operates as an **end-fed half-wave** on its fundamental frequency, but it also functions as a **non-resonant** radiator on a wide range of other frequencies. This multi-band capability is one of its most attractive features, allowing a single antenna to be used across multiple amateur radio bands without needing a separate tuner for each one. Unlike a traditional dipole or vertical, which are typically cut to a specific resonant length, the Rybakov's length is chosen to be non-critical, making it a highly adaptable antenna. Its performance on various bands is a result of a careful balance between the antenna's length, the feed point impedance, and the use of a simple matching unit at the base.

The core principle behind its operation is that it's essentially a long wire vertical, where the length isn't tuned to a specific frequency. Instead, a **transformer** or **matching unit** at the feed point steps up the impedance from the typical 50-ohm output of a radio to the high impedance of the end-fed wire. This allows the antenna to radiate efficiently even when it's not at resonance. Because it's not a true resonant antenna, the feed point impedance changes significantly with frequency, but the matching unit is designed to handle this wide range. A good ground connection or a series of radials is essential for proper operation, as the antenna needs a counterpoise to function effectively.

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## Materials and Construction

Building a portable Rybakov antenna is a straightforward project that requires a few key materials. The most important component is the wire itself. **Enamel-coated magnet wire**, typically 18 to 22 gauge, is an excellent choice. It's lightweight, flexible, and easy to wind onto a support structure. The length of the wire can vary, but a common length is around 21 feet (7.6 meters), as this works well on many HF bands.

You'll also need a support mast, such as a **fiberglass kite pole**, which is an ideal choice due to its light weight and telescoping sections. These poles are inexpensive and can extend to heights of up to 30 feet, which is perfect for getting the antenna elevated.

The heart of the antenna is the **matching unit**, which is a transformer that matches the high impedance of the antenna to the low impedance of your radio. These are more commonly known as Baluns and Ununs. A common and highly effective design uses a **ferrite toroid core**, such as a Type 43 mix, which is well-suited for broadband applications. A common ratio is a 4:1 unun (unbalanced to unbalanced). The transformer is enclosed in a small, weather-resistant project box with a **SO-239 connector** for easy connection to your coaxial cable.

Using an Unun is crucial for this antenna because you need to match the impedance of your transceiver to that of your antenna for maximum results. While I build my own, it requires some delicate work winding the toroid with wire, it's easier to order one from a ham radio supplier.

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## Assembly and Deployment

Once you have all your materials, the assembly process is quite simple. To deploy the antenna, you'll need to attach the end of your long wire to the tip of your fiberglass mast. Using a small eyelet or tape, secure the wire to the mast and then extend the mast to its full height. The matching unit is attached to the base of the mast, and the other end of the wire is connected to the matching unit. You can use a short length of coaxial cable (such as RG-58) to connect your radio to the SO-239 connector on the matching unit.

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## Grounding and Performance

For the Rybakov antenna to work correctly, it needs a **counterpoise**, which acts as the other half of the antenna. This can be as simple as a single wire laid out on the ground, or a more effective solution is to use a few short radials. A single radial of about 15 to 20 feet is often sufficient for portable operation. Simply connect one end of the radial to the ground lug on your Unun and lay the wire out on the ground in a direction away from the antenna's base. For the best results, try to lay the radial in the direction of the state or country you wish to contact.

One of the great advantages of the Rybakov antenna is its ease of use. Once deployed, you can use a radio's built-in tuner to make fine adjustments for the lowest SWR on your desired band. While the antenna is non-resonant, a good tuner can match the antenna's impedance to the radio, ensuring maximum power transfer. Because the Rybakov is so adaptable, it's an excellent choice for **Summits on the Air (SOTA)** or other field day activities where quick and reliable setup is crucial.

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## Advantages and Disadvantages

The Rybakov antenna is prized for its simplicity and multi-band capability. It's **lightweight, easy to deploy, and requires minimal parts**, making it perfect for portable use where weight and space are at a premium. The single wire design eliminates the need for complex traps or tuning elements, and the simple matching unit is robust and reliable. Its non-resonant nature means you don't have to cut the antenna to an exact length for each band, providing a great deal of flexibility.

However, the antenna does have some trade-offs. Because it's a non-resonant design, its efficiency can be slightly lower than a perfectly tuned, resonant antenna, and it requires a tuner to achieve a low SWR on every band. It's also more susceptible to local noise, as it's a vertical antenna, which can sometimes be an issue in urban environments. But for the portable operator looking for a simple, effective, and multi-band antenna, the Rybakov is an excellent choice that balances performance with convenience.

Next month, we're going to look at building Baluns and Ununs for portable antennas. While you can purchase completed Baluns and Ununs, you often get a better quality product doing it yourself.

## 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 article comes from the ARRL regarding National Preparedness Month 2025:

**Resilience Through Amateur Radio for National Preparedness Month 2025:** A nice piece on the role amateur radio plays on being ready for anything.

<https://www.arrl.org/news/resilience-through-amateur-radio-for-national-preparedness-month-2025>

**Ham radio and the world of amateur radio operators:** A nice piece regarding amateur radio.

<https://canadiangeographic.ca/articles/ham-radio-and-the-world-of-amateur-radio-operators/>

**Local, County, and State Governments Proclaim Value of Amateur Radio:** A great article on the importance of amateur radio.

<https://www.arrl.org/news/local-county-and-state-governments-proclaim-value-of-amateur-radio>

**Ham radio operators provided critical communications help:** A nice article reminding us of the important role amateur radio plays when all else fails.

<https://www.tribtoday.com/news/local-news/2025/05/ham-radio-operators-provided-critical-communications-help/>

**Ham Radio Operators Assemble Ahead of Hurricane Milton:** A nice piece regarding disaster preparedness.

<https://www.radioworld.com/news-and-business/headlines/ham-radio-operators-assemble-ahead-of-hurricane-milton>

**Ham Radio Call Signs Discovered During Clayton UC Renovation Revive Memories of Lehigh's Amateur Radio Society:** This is an interesting read regarding amateur radio's rich history.

<https://news.lehigh.edu/ham-radio-call-signs-discovered-during-clayton-uc-renovation-revive-memories-of-lehighs-amateur>

**WKHS Makes International Contact with Amateur Radio:** A nice look at introducing amateur radio to youth.

<https://www.radioworld.com/tech-and-gear/wkhs-makes-international-contact-with-amateur-radio>

**Local Club Connecting Amateur Radio Enthusiasts:** From the Weirton Daily Times.

<https://www.weirtondailytimes.com/news/local-news/2024/12/local-club-connecting-amateur-radio-enthusiasts/>

**The Rich History of Ham Radio Culture:** A really nice piece looking at the history of our beloved hobby (really a passion).

<https://thereader.mitpress.mit.edu/the-rich-history-of-ham-radio-culture/>

**Ham Radio In the Internet Age:** An interesting article that looks at how amateur

radio has changed with the times.

<https://hackaday.com/2024/10/25/ham-radio-in-the-internet-age/>

## 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. Still, nothing new from the FCC this month:

**FCC Initiates Broad Inquiry on Rules to Delete or Amend:** This is of importance to everyone who has an FCC license.

<https://www.arrl.org/news/fcc-initiates-broad-inquiry-on-rules-to-delete-or-amend>

**FCC Upholds Record \$34,000 Forfeiture Against Amateur Licensee:** The story started a few years back but finally came to a sticky financial end for the offender.

<https://www.arrl.org/news/fcc-upholds-record-34-000-forfeiture-against-amateur-licensee>

**FCC Seeks Comments on Tribal FM Allotment in Wyoming:** This is an interesting read about an area of radio outside the norm.

<https://www.radioworld.com/news-and-business/business-and-law/fcc-seeks-comments-on-tribal-fm-allotment-in-wyoming>

**Solar Activity Significantly Affecting Ionosphere, FCC Opens Docket for Comments on Impact:** The impact of solar activity has been driven the FCC to solicit comments regarding it's impact:

<https://www.arrl.org/news/solar-activity-significantly-affecting-ionosphere-fcc-opens-docket-for-comments-on-impact>

**FCC to Require Two Factor Authentication for CORES Users:** It seems that the powers that run the big show have found yet another fee to tack on to the amateur radio operators ability to operate:

<https://www.arrl.org/news/fcc-to-require-two-factor-authentication-for-cores-users>

**FCC To Vote on Removing Symbol Rate Restrictions:** From the ARRL regarding the digital modes.

<https://www.arrl.org/news/fcc-to-vote-on-removing-symbol-rate-restrictions>

## Propagation News

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

**The ARRL Solar Report:** This is the ARRL solar update, which is updated regularly:

<https://www.arrl.org/news/the-arrl-solar-report-28>

**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.

**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/>