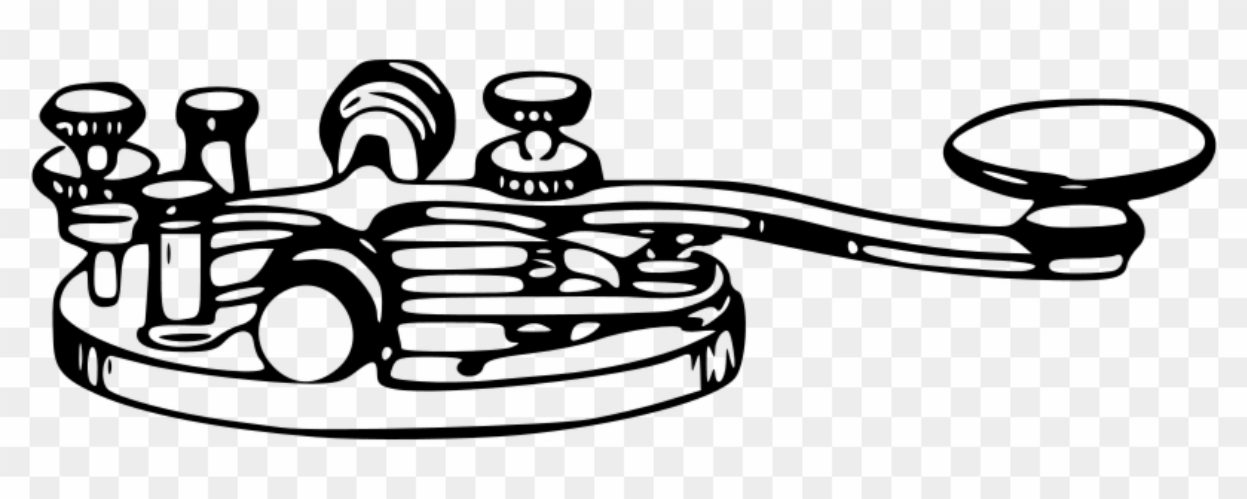
QSA-5

Marin Amateur Radio Society Monthly Newsletter

Established 1933 **August 2025**



When all else fails, you can count on Amateur Radio

From Our President:

It has been a busy summer for MARS our Public Service team has been active with 5 events completed so far. We a very successful Field Day about which I will go into more detail in a future issue of QSA-5. There have also been many upgrades to our club station specifically new antennas and cabling. I first have to confess that the bulk of my electronic work has been within the audio spectrum and not radio frequencies. That said when someone asks me what components are the most important in an audio system the answer is easy. They are the endpoints or interfaces. The microphones, the phono cartridges, and the speakers. Those are the places that the electronics interacts with the real world. This is also true in radio frequencies. You can be an experienced operator, have the best radio, maximum output power, and still not make a contact with someone that you cannot hear or the other party can't hear you. Antennas are crucial to making contacts. Our clubhouse has for years not a good stable set of antennas. That is in the process of being changed with most of the changes completed.

I would like to give a shout out to Gerald McCarthy W6NOV for creating a plan to upgrade the clubhouse antenna systems and their connections to the radios in the radio room and at the repair workbench. The work is impressive, and I urge you to drop by the clubhouse and check out what has been done. As resourceful as Gerald is, he did do this alone. He marshaled together a crew of folks who gave up many hours of their lives to making this project come to fruition. Group projects like this are a huge benefit to the club as the club has more to offer to its members. Those who participate in a project like this benefit even more. They get to improve their own knowledge of the craft by learning from others. They get to know other members of the club better, something that is increasingly hard to do in this online world. Let us not forget that actually physically building something is just a lot of fun.

I want to call out some of the folks who worked on the project and I apologize to anyone I left out, that is down to my oversite and not any intentional omission. The list incluces Marc Bruvry KF6VNT, Milt Hyams KM6ASI, Jerry Foster WA6BXV, Andrew Civin K6CE, Dan Sobel N6HLZ, Jim Saltzgaber KM6WWY, Ann Ivan KM6QIW, and Scott Pasternak KN6ZDM. Thank you all1

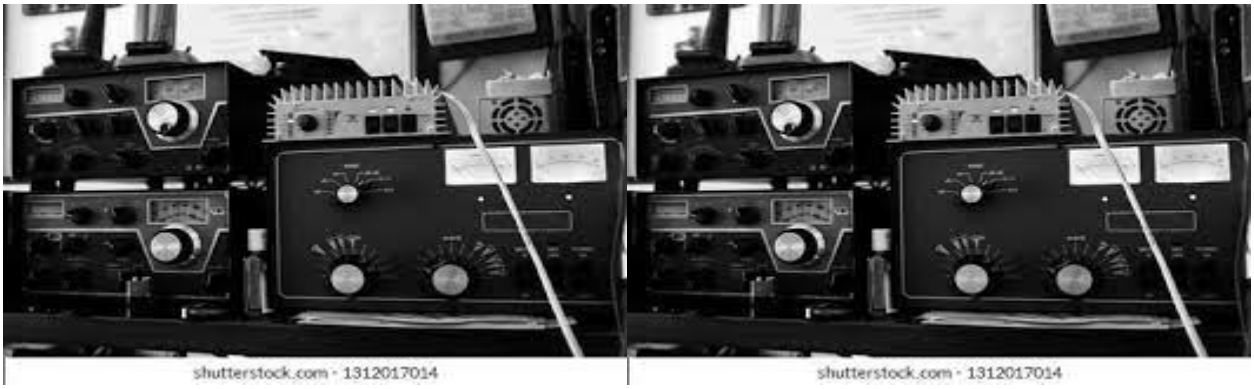
73 de wa6uds

From the Editor:

Summer is coming to an end and Fall looms on the not-so-distant horizon. The Marin Amateur Radio Society has had an active summer and its future looks bright! We were well represented during the Field Day 2025 event and our VE team brought in some new blood to this hobby we love so much. As always, our Critical Mass team and RCV members are supporting events and preparing emergency communications for time of disaster. Continuing with our series on HF for beginners, I've written an article on antenna wire. The article covers some basic concepts readers should know regarding choosing the right wire for a do-it-yourself antenna.

There isn't much more to report. A big thanks goes out to Curtiss Kim and the usual suspects for their contributions. As always, send in an thoughts, suggestions, etc and we'll include them in upcoming issues of the QSA-5. Have a great month!

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 7/10/2025

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 to adopt agenda as presented without objection.

Approve minutes of 12 June board meeting as published in July 2025 QSA-5. MSC without objection.

Secretary's Report/Communications Jim KM6WWY - Nothing new to report.

Treasurer's Report Bruce N6VLB –June 2025 Balance Sheet published in July 2025 issue of QSA-5. We have approx. $10K in PayPal account. He will bring the balance down to $2K in preparation for opening a new account.

Members present: Skip Fedanzo KJ6ARL, Scott Pasternak KN6ZDM, Dan Sobel N6HLZ, Mark Klein KM6AOW, Rob Rolands NZ6J, Kathy Spicher KM6URP, Charlie Benet AI6TT, Michael Ham WA6LCN, Curtiss Kim KM6GUY.

Committee and other Reports:

1. **Membership** Curtis WA6UDS- Current membership is 157. This is 95% (88% last June) of this time last year.
2. **Facilities** Skip KJ6ARL- He was at the clubhouse today. Things are in good order, outdoors in back is in good order. Our tenant reported that there was no disruption to her due to our new antenna installation. It has been reported that the water pressure tends to fluctuate. We will have the plumber check the pressure next time he is called out for a problem.
3. **VOAD/RCV** Skip KJ6ARL- RCV and VOAD is still in place. Community Action Marin has moved to Novato. A new CBO profile is being produced. Radio Communications will be tested from the new site. They also have need for emergency radio communications with their 9 childcare centers throughout the county. Additional communications testing will be done to see if RCV is able to support this need.
4. **Technical** Milt KM6ASI- Not present
5. **Public Service** Scott KN6ZDM- Public Service is going well. Interference with Stinson Beach's lifeguard Marine radio CH-16 was found to be a problem with their Uniden mobile radio. Public Service will use a cross-band repeater to preclude future problems at that site.
6. **VE Testing** Jim KM6WWY – Next VE Session is July 12, 2025, 1:00 pm at the clubhouse. We currently have 3 applicants. I will not be available, Ken Brownfield AB6JR will be the lead VE.
7. **Comm Truck** Charlie AI6TT- Nothing to report.

8. **NBAM** Bruce N6VLB- Kathy KM6URP – June was a busy month. Helped set up uhf array for cube-sat program. She was successful in getting permission to set up an NBAM node at Sonoma State. This will be a key location for connection to various EOC's. Mark did Marin RACES/RCV

class on AREDN Winlink communication. Jonathon, Rob and Kathy went out to Dillon Beach and replaced some equipment on the water tank. Mark Rob and Kathy had an NBAM/AREDN demonstration station that was very popular on Field Day. We have a very interested teenager who will be getting his license soon as a result. Sonoma County is working to get access for NBAM on several sites. Sonoma County Grand jury identified problems with their evacuation planning, and lack of communications for evacuation. NBAM will be offering AREDN technology to them as a possible technology for neighborhood communication. Bruce noted that the Marin Civil Grand Jury is starting their year and is looking for topics. NBAM will propose emergency communication to them.

9. **Picnic** Steve KB6HOH- Picnic will be on September 13th at Stafford Lake, reservation for Group Area 1 is in place. Curtis WA6UDS – we will have to explore having a charge for the catered food. He will do a membership survey of food preferences. Initial Picnic Committee meeting will be on July 23rd, 7:00pm.

Old Business:

1. **Donations Committee Charter -**
2. **New Google environment – Online storage of club records –** Bruce N6VLB the system is ready when we are to begin moving records.

New Business:

1. **KWMR (Attachment A.)** Curtis KM6GUY – He proposed a public radio show hosted by MARS to discuss HAM radio as emergency communication. After discussion, it was decided that Curtiss will discuss this with some of the West Marin GMRS network people and report back.
2. **StarLink Station** - Michael Ham WA6LCN is offering a Starlink station if the club picks up the $10 per month fee. It was decided to investigate the actual cost to the club, including data and traffic charges, if any. The estimate is $120/year for backup data services. Rob NZ6J will check this out and report back.
3. **Club "Business Cards"** Curtis WA6UDS- He made short runs of generic MARS business cards for public service and for Field Day with logo and QR code to additional information. He will check the cost of printing MARS business cards via VISTA Print, or another commercial printer, that points to a MARS web page. Scott KN6ZDM suggested that the QR code point to an informational page with a form for collecting contact information. Various options were discussed.

Good of the Order Nothing noted

Executive Session Board Adjourned to Executive Session for discussion of the clubhouse at 2037 by Curtis Ardourel WA6UDS. Returned from Executive Session at 2103.

Adjourn MSC to adjourn at 2103.

Next Regular Meeting 1 August 2025

Next Board Meeting 7 August 2025

KWMR (Attachment A.)

Curtis...if you think the Board will go along with the idea I would approach KWMR and see what we could set up. I'm with you, a monthly or may a bi-monthly but that would be our commitment. I'm thinking if they want a regular host, maybe Brian Cooley or Rob Rowlands. (he has an appealing voice and knowledge) We would use Gerald MCarthy as well. Topics would be everything from the west county's GMRS net to RCV to MARS to west county

resources. Maybe call-ins and some product reviews. I would treat it like our Critical Mass meetings. We would set up the topic and invite the guest. I know somewhat how a low power FM station works with volunteers and working in such an environment. I think it would help make MARS more visable. It could be live (prefered) but if pre-recorded someone at KWMR would have to be responsible for playback. A survey of members might be a good idea. 73 Curtiss

On 03/29/2025 1:18 PM PDT W6SG <wa6uds@w6sg.net> wrote:

Greetings

As a concept I love it. I don't expect we would have any trouble selling it to the board. My concerns echo yours. How do we staff it and provide content.

It is not clear to me from the website what they are looking for. I don't think we have enough content for a daily show, and even a weekly show is a lot to produce.

I wonder if they would be interested in a monthly show. I think we could bring that off.

Although most of us have spent more time talking into a microphone than the average citizen, you well know that rag chewing and broadcast media are hardly the same thing.

Could we find a regular host, which I expect is what they would want and probably a hypothetical audience would prefer.. Alternatively, could we find a group that would be willing to fill the time?

Would the show be live or could it be pre-recorded?

I think before we run it by the board, we would need to answer those questions and probably more as well.

I wonder if I should do an email survey to see if anyone would be interested in Hosting, programming, listening?

73 DE WA6UDS

Curtis Ardourel

President and Membership Chair Marin Amateur Radio Society

On Mar 28, 2025, at 11:19, CURTISS KIM <curtskim@comcast.net> wrote:

Curtis,

RCV recently conducted an exercise to test our communication capabilities in the west county. I was wondering what you thought about a regular radio show on amateur radio on KWMR.

KWMR (90.5 FM) is a community radio station licensed to Point Reyes Station, California, that broadcasts to West Marin, including Bolinas and Lagunitas, and is a vital resource for the community.

Location:

It is licensed to Point Reyes Station, California and broadcasts from Bolinas and Lagunitas, with two translators.

- **Non-Profit:**

KWMR is a 501(c)3 nonprofit organization, meaning it relies on community support and listener donations to operate.

KWMR (Attachment A.) Pg. 2

- **Programming:**

KWMR offers a variety of programming, including local news, information, and entertainment, with a focus on issues relevant to West Marin.

I'm proposing we provide the host to run the program.

https://kwmr.org/be-a-radio-host

This would be a big commitment since we would have to have operators who would be willing to host a show and talk to guests about ham radio, west county coverage and related topics. We certainly have the talent available. Not sure if KWMR is already doing a program like this. This would have to be club sanctioned. I'm not worried about the initial start...it's down the road, months later. Can we keep a program like this going and provide needed programming material over a sustained period? We could promote the club, maybe do a giveaway or two and provide updated info about communication during an emergency.

Just wondering your thoughts,

Curtiss, KM6GUY

Marin Amateur Radio Club

Balance Sheet Comparison

As of July 29, 2025

	TOTAL	
	AS OF JUL 29, 2025	AS OF JUL 29, 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	81,462.40	69,426.14
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
Total Bank Accounts	**$82,978.80**	**$74,311.04**
Other Current Assets		
Uncategorized Asset	0.00	385.00
Total Other Current Assets	**$0.00**	**$385.00**
Total Current Assets	**$82,978.80**	**$74,696.04**
Fixed Assets		
club house- 27 Shell Rd. MV	58,983.00	58,983.00
Total Fixed Assets	**$58,983.00**	**$58,983.00**
TOTAL ASSETS	**$141,961.80**	**$133,679.04**
LIABILITIES AND EQUITY		
Liabilities		
Total Liabilities		
Equity		
Opening Balance Net Assets	124,400.00	124,400.00
Retained Earnings	15,577.46	13,748.91
Net Income	1,984.34	-4,469.87
Total Equity	**$141,961.80**	**$133,679.04**
TOTAL LIABILITIES AND EQUITY	**$141,961.80**	**$133,679.04**

Marin Amateur Radio Club

Profit and Loss

January 1 - July 29, 2025

	TOTAL	
	JAN 1 - JUL 29, 2025	JAN 1 - JUL 29, 2024 (PY)
Income		
Christmas Party Income		640.00
Donations	5,342.00 2	2,000.51
Dues	2,880.00	270.00
Public Service Refund		168.15
Rent	19,035.00	21,000.00
Unapplied Cash Payment Income		385.00
Total Income	**$27,257.00**	**$44,463.66**
GROSS PROFIT	**$27,257.00**	**$44,463.66**
Expenses		
Accounting	1,845.00	1,420.00
Awards	400.00	
Car & Truck	354.94	2,224.89
Car & Truck Gas	34.89	88.02
Total Car & Truck	**389.83**	**2,312.91**
Christmas Party		2,970.23
Contractors		21,109.00
Equipment < $2,500	431.48	
Field day	341.91	854.66
Food	934.76	76.89
Garbage	370.66	349.74
Housekeeping		839.85
Insurance	2,288.66	2,265.50
Comm Van Insurance	2,234.25	2,169.68
Total Insurance	**4,522.91**	**4,435.18**
Meals	70.77	76.86
Office Supplies & Software	91.00	18.00
Other Business Expenses	575.32	

Picnic	35.00	
Public Service Expense	3,295.57	4,009.18
Reimbursable Expenses		20.00
Repair & Maintenance	1,521.63	320.06
Repeater		2,138.67
Station Upgrades & Maintenance	1,894.69	
Taxes & Licenses	4,164.36	4,099.67
Utilities	2,833.19	2,588.06
Water	456.58	757.84
Web Services Expenses	0.00	
Total Expenses	**$24,139.66**	**$48,431.80**
NET OPERATING INCOME	**$3,117.34**	**$ -3,968.14**
Other Expenses		
MESH Grant Disbursement	1,133.00	501.73
Total Other Expenses	$1,133.00	$501.73
NET OTHER INCOME	$ -1,133.00	$ -501.73
NET INCOME	$1,984.34	$ -4,469.87

LIFE IS SIMPLE

MARS Club News

Silent Key Lives On

by Curtiss Kim , KM6GUY

When Sheila Adams-Sapper was growing up as a kid she used to marvel at her father toying with his amateur radio gear. John Wehren , N6XN was an active member of the Silverado Amateur Radio Club in Napa. Wehren used to take his

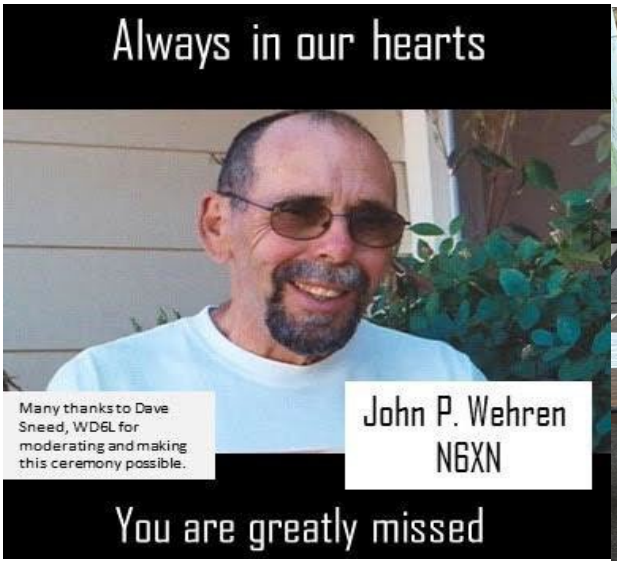
daughter on public service events and let her sit in his shack as he worked CW making contacts. Wehren's boyhood friend going back to elementary school in the 5th and 6th grade was David Sneed who also was enamored with radio. Wehren became an "Elmer" to Sneed and together the two would work together on various projects whether it was a D Star repeater or setting up an Echo Link system. Wehren served the amateur radio community in Napa County wearing many hats including his membership in the Northern Amateur Relay Council of Northern California. He was part of the Northern California Net, an affiliate to the National Traffic System and a volunteer ARRL License Examiner. N6XN served as the Emergency Coordinator of the American Relay Service Group in Napa County. When Wehren passed in June of 2022, it was Sneed , WD6L, who officiated with the Silent Key Ceremony. It was at that time Adams-Sapper decided she wanted to follow in her father's footsteps. Sneed became her "Elmer" and together they worked to keep Wehren's silent key from going quiet. Now, Adams-Sapper will get that chance. Having passed the test for Amateur Extra in the latest MARS VE exam, the daughter will apply through the vanity licensing process to assume her father's call sign of N6XN. Adams-Sapper whose current call sign is KO6HYX is a relatively new member of MARS and has joined the RCV group. Like father, like daughter.

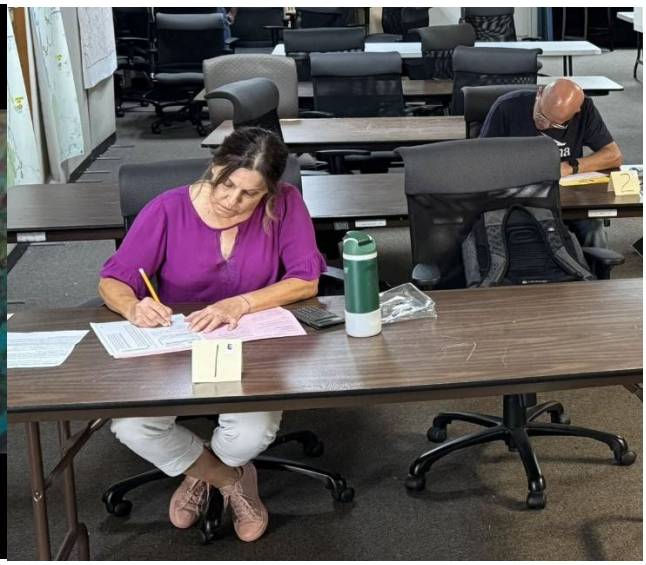
(During the same VE session, Esequiel Ornedlas, (Burlingame) and Steven Joffe (Sonoma) both passed their Technician license.)

John P. Wehren, N6XN, Silent Key Ceremony

(https://www.youtube.com/watch?v=r6Bdmvt_QrU)

(1st picture) John Wehren, N6NX, (2nd picture)Sheila Adams-Sapper taking VE exam for her Amateur Extra license (3rd picture) David Sneed, WD6L and Sheila Adams-Sapper displaying her father's call sign she will apply for.





Volunteer Examiner News

Dates remaining on our 2025 schedule will be Jul 12th, and Oct 11th. Please mark your calendars. The next session is coming up in a week.

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
August 17th (third Sunday) Michael
September 21st (third Sunday James
October 26th (fourth Sunday; third is Pacificon) Milt
November 16th (third Sunday) Rob
December 14th (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.

The monthly meeting of the North Bay Critical Mass group met on Sunday, July 20th at the usual place, the Jury parking lot at the Marin Civic Center. The meeting went from 10:00am until 12:00pm.

They discussed various methods of improving the intelligibility and quality of their voice transmissions! Participants were asked to bring their hand-held radios. They were shown a simple trick to enhance voice fidelity when transmitting during the gathering.

They also reviewed setting up sound card devices for using their radios for data transmissions such as WinLink, etc.

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!			
https://docs.google.com/spreadsheets/d/1siMlQr4cHAUCq6ybSt6XVpAQWRdJHEwQ_M6ZBMQpAnw/edit?				
Marin County and other repeaters				
Install ***Repeaterbook*** on your phone: https://www.repeaterbook.com/index.php/en/. 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 Overlook	+5MHz
Tiburon fire station 9	442.125	146.2	Strawberry	+5MHz
North Marin Simplex	147.585	n/a		
Central Marin Simplex	147.510	n/a		
South Marin Simplex "Nickels"	147.555	n/a		
West Marin Simplex	147.465	n/a		
			Wolfback	

Wolfback Ridge DMR	442.525	CC2, TS1 Norca	Ridge, Sausalito	+5MHz
Bolinas DMR	440.138	CC3, TS1	Commonweal	+5MHz
Novato KG6MZV	440.500	CC1, TZ1	Novato	+5MHz
San Francisco repeaters				
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
East Bay Repeaters				
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		
Sonoma County Repeaters				
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

San Francisco's 2 Meter Critical Mass June 2025

San Francisco has an ongoing Critical Mass Group that meets monthly. Here is a breakdown of what they do by **Michael Fisher K6MLF:**

Join Us for our June Practice

More Emergency Communications Practice!

We had a lot of success with last month's practice.

A great group of radio operators participated in our practice, where everyone took turns properly formatting messages and passing over the radio.

We'll keep practicing with emcomm messages for this month.

Please consider joining us for a fun Saturday Morning!

→ Get on the air. Make the contact. Build the skill.

Featured Again: The 2MCM Travel Net

Date: Saturday, June 14th
Time: 0900–1000 hours
Repeater: W6PW
Frequency: 145.150 MHz
Offset: –600 kHz
DCS: 664

The **2MCM Travel Net** is back for another focused hour of practice designed for mobile and transit-based operators. Whether you're calling in from your car or checking in from a bus bench, this is your moment to practice situational awareness, effective brevity, and real-world radio handling.

Quick tips for Travel Net ops:

- Use a handheld mic if operating from a vehicle.
- Be courteous if you're in a shared public space.
- Only transmit when it's absolutely safe.
- Share observations or relevant info with Net Control — your voice matters!

 **The 2MCM Radio Practice Meetup**

What: Two Meter Critical Mass Radio Practice
When: Saturday, June 14th, 10:00 AM – 12:00 PM
Where: Spreckels Lake, 122 Spreckels Lake Drive, San Francisco

Come out and get some fresh air while we practice 2-meter simplex comms. This is a relaxed, supportive environment where new operators are encouraged and experienced hams can brush up and mentor.

What to bring:

- A fully charged 2-meter radio
- Your user manual (physical or digital)
- **Clipboard + pen/pencil**
- A filled water bottle
- Layers — it's San Francisco, after all

Please stay home if you:

- Are feeling unwell
- Have flu-like symptoms
- Have tested positive for COVID in the past five days

Frequencies we'll use (simplex):

- **Channel Alpha:** 146.475 PL 100
- **Channel Bravo:** 147.585 PL 100
- **Channel Charlie:** 146.445 PL 100

- **Channel Delta:** 147.525 PL 100

Got the NERT Band Plan programmed into your radio? Then you're already good to go!

Questions? Need programming help? Just want to say hi?
Drop us a line anytime: 2MCMv2.0@gmail.com

See you on the air and at the lake!

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

From Hugh KN6KNB

Antenna Wire

The majority of DIY (do-it-yourself) antennas use wire as their primary element. While almost any wire will allow you to transmit and receive radio signals, some wire is better than others. When building an antenna, you want to maximize the antenna's ability to transmit and receive signals. This short article is an introduction to antenna wire.

For amateur radio enthusiasts, selecting the right wire for an antenna is a crucial first step in building an effective station. The primary considerations revolve around the wire's conductivity, strength, and resistance to environmental factors. Copper is the most common choice due to its excellent electrical conductivity, which minimizes signal loss. However, a pure copper wire is often too soft for long-term outdoor use, making it prone to stretching and breaking under tension. Therefore, many hams opt for copper-clad steel (CCS) or copper-clad aluminum

(CCA) wires. These composites combine the superior conductivity of copper with the strength of steel or the lighter weight of aluminum, offering a practical balance for most antenna applications.

The physical diameter of the wire, or its gauge, is another significant factor. Antennas for lower frequencies, such as those used for 80 and 160 meters, often require thicker wire to handle the higher current and provide sufficient strength for longer spans. A common choice is 14-gauge or 12-gauge wire. Thicker wires have lower resistance, which is desirable, but they are also heavier and more difficult to work with. For higher frequencies, such as those for 10 and 20 meters, where antennas are shorter and currents are lower, a thinner wire like 18-gauge or 20-gauge may be sufficient. The key is to select a gauge that can withstand the physical stresses of installation and weather while minimizing electrical losses. Beyond the core material and gauge, the wire's insulation also plays a vital role. While many antennas, particularly dipoles and verticals, are designed to use bare wire, insulated wire is often used to prevent short circuits and to protect the wire from corrosion. Common insulation materials include polyethylene and PVC. Insulated wire is especially useful in situations where the antenna needs to be routed near other conductors or objects. However, it's important to note that the insulation can slightly alter the electrical length of the antenna, requiring a small adjustment in the cut length compared to a bare wire antenna of the same design. For more specialized applications, such as stealth antennas or those needing extreme strength, other materials come into play. Kevlar-reinforced wires, for example, are incredibly strong and lightweight, making them ideal for portable operations or for supporting long wire antennas in challenging environments. Similarly, some hams use stainless steel wire, which is highly resistant to corrosion but has lower conductivity than copper. In these cases, the trade-off is made in favor of durability and longevity over marginal improvements in electrical performance. These specialty wires are often more expensive but can be a worthwhile investment for specific projects.

Another type of wire to consider is braided or stranded wire versus a solid core. Stranded wire, which is composed of many thin wires twisted together, is far more flexible and less prone to breaking from repeated flexing than a solid core wire of the same gauge. This flexibility makes it easier to handle during installation and more resilient to wind-induced movements. While some debate exists about the electrical performance differences at radio frequencies, for most practical

amateur radio applications, the mechanical advantages of stranded wire outweigh any minor theoretical disadvantages.

In certain antenna designs, such as multi-band antennas or those with traps, the choice of wire becomes even more critical. These antennas often involve precise lengths of wire and specific spacings, where the physical properties of the wire can significantly affect performance. Using wire with a consistent diameter and known electrical characteristics is essential to ensure the antenna tunes correctly and radiates efficiently. For these more complex builds, it is often best to follow the wire recommendations provided in the antenna's design documentation to avoid performance issues.

Ultimately, the best wire for an amateur radio antenna is a balance of electrical performance, mechanical strength, and cost. A simple, well-made dipole for 40 meters might work perfectly well with 14-gauge copper-clad steel wire, while a portable, multi-band antenna might benefit from the lighter, stronger qualities of Kevlar-reinforced wire. The amateur radio community offers a wealth of information and experience, and many hams find that experimenting with different wire types is part of the fun of the hobby, leading to a deeper understanding of antenna theory and practical construction.

Stranded Versus Solid Copper Wire

When building a wire antenna for amateur radio, the choice between stranded and solid copper wire is a common point of discussion. The most significant practical difference between the two lies in their mechanical properties. Solid core wire, as its name suggests, is a single, stiff conductor. This rigidity makes it less flexible and more prone to work-hardening and breaking when subjected to repeated bending or constant movement from wind and weather. For permanent, well-supported antenna installations where the wire is not frequently handled or moved, solid wire can be a viable and cost-effective option. However, its lack of flexibility can make it more difficult to install and terminate, especially when making sharp bends or connecting to insulators.

Stranded wire, in contrast, is composed of numerous small-gauge wires twisted together to form a larger conductor. This construction makes it highly flexible and

far more resistant to the fatigue and breakage caused by flexing and vibration. For antennas that are frequently deployed and taken down, such as those used for portable or field operations, the durability and ease of handling of stranded wire are significant advantages. It is also an excellent choice for long-span antennas, such as dipoles or long wires, that are exposed to wind and other environmental movements, as the flexibility helps to prevent the wire from snapping.

While some electrical theory suggests that solid wire might have a slight advantage in terms of lower resistance and less attenuation, particularly at higher frequencies, these differences are generally considered negligible for the vast majority of amateur radio antenna applications. The "skin effect," where RF current travels primarily on the outer surface of a conductor, is a factor, but for typical HF bands and wire sizes, the performance difference between solid and stranded wire of the same gauge is not significant enough to be a deciding factor for most hams. Therefore, the choice between solid and stranded copper wire for an antenna often comes down to the intended use, durability requirements, and ease of installation, with stranded wire being the more popular and versatile choice for most amateur radio operators.

Wire Length Versus Thickness

The relationship between the length of an amateur radio wire antenna and its thickness is primarily a matter of mechanical strength and electrical performance. For longer antennas, particularly those for the lower HF bands like 80 or 160 meters, the wire must be thick enough to support its own weight and withstand environmental stresses. A long, thin wire will stretch and eventually break under the tension required to keep it from sagging excessively, especially when factoring in wind, ice, and snow loads. A thicker wire, typically 12 or 14 American Wire Gauge (AWG), provides the necessary tensile strength for these long spans, ensuring the antenna maintains its physical integrity and resonant frequency over time.

While mechanical durability is the most immediate concern, wire thickness also has a subtle but important effect on the antenna's electrical characteristics. A thicker wire has a larger surface area, and due to a phenomenon called the "skin effect," radio frequency (RF) currents tend to travel along the outer surface of a conductor. This increased surface area leads to a lower resistance, which in turn

results in a lower Q factor for the antenna. A lower Q factor broadens the antenna's bandwidth, allowing it to operate efficiently over a wider range of frequencies without requiring significant retuning. This effect is more pronounced on higher frequencies, where the antenna's length-to-diameter ratio becomes a more significant factor.

However, for most common amateur radio setups and power levels, the performance difference between a moderately thick wire (e.g., 14 AWG) and a very thick one (e.g., 10 AWG) is often negligible in terms of overall efficiency. The primary constraint becomes the practicalities of installation. A heavier, thicker wire requires more robust support structures, which can be more expensive and difficult to install. Therefore, the choice of wire thickness for a given antenna length is a careful balance between ensuring the antenna is strong enough to last, achieving a desirable bandwidth, and maintaining a manageable weight and cost for the overall antenna system.

This was a quick look at antenna wire. I order wire from Amazon.com because they have a huge variety of it, pricing is great, and they can get it to me in 1 to 2 days. However, Read the description of the wire and product specs carefully. The best inexpensive choice is the speaker wire since you can easily split or separate it, giving you double the length. I use the aluminum core which is really cost effective and works fine.

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 Canadian Geographic on the world of amateur radio:

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-23

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/