

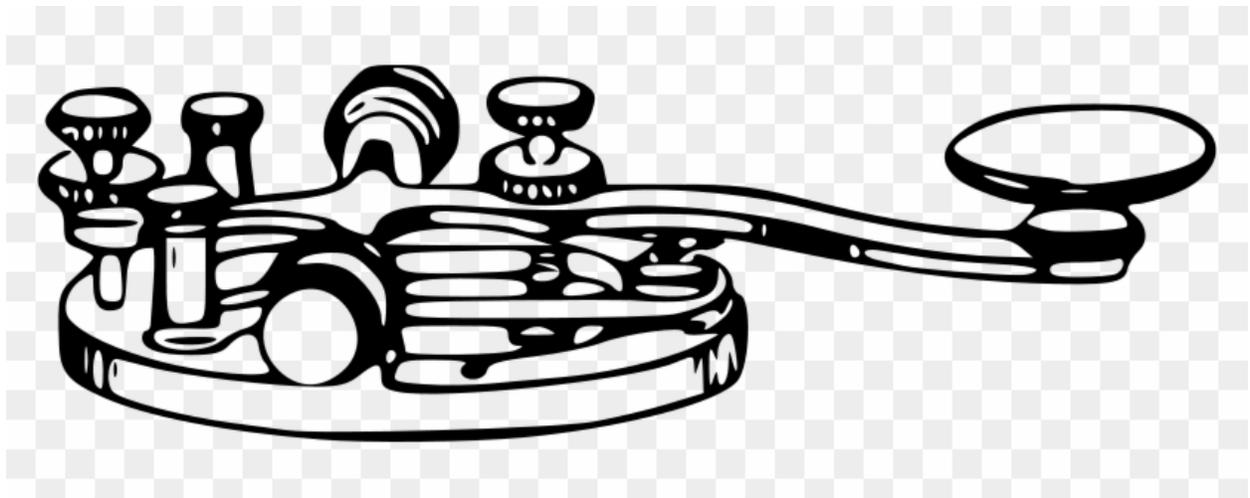


QSA-5

Marin Amateur Radio Society Monthly Newsletter

Established 1933

March 2025



When all else fails, you can count on Amateur Radio

From Our President:

At the last board meeting I was party to a decision I would rather not have made. That decision was to approve a budget that was not balanced. The 2025 budget forecasts a \$9,553.84 loss for 2025. The complete budget is included in this issue of QSA-5 in the board minutes section. That is a pretty big number no matter how you slice it. We are not nearly as bad off as that number suggests. Last year we netted \$22,148.35 in income. So the lights will stay on in the clubhouse and we will be participating in all the activities we have planned. However, that 22K includes \$10K from Randy Jenkins KA6BQF and 10K from Alan Bowker WA6DNR, both silent keys. We cannot assume that we will receive anything close to that in donations this year.

We as a board have to work in 2025 to bring our costs down and bring our income up. As far as I am concerned everything is on the table. Some items that come quickly to mind might include increasing dues. The last time we raised dues was 2018. As a member of several clubs around the bay, other club's dues range from \$20 to \$35. Increasing rent for the apartment upstairs, although the county limits how much we can raise that. We can look at some of our activities as opportunities for income. Our Holiday Celebration last year after your payments cost us \$1,662. Markedly less than in prior years. Should we charge more than the basic cost of the meals? Other clubs in the area charge between \$35 and \$60 for their holiday celebrations? For the last several years the club Picnic was provided as a gift to members. This has not always been the case. The club used to only provide the site and a fire to cook your own food. Should we move back to that model or continue to cater it but ask you to contribute to the cost? Enough doom and gloom. As the board looks at managing our income and expenses I will be soliciting your input on questions like the ones posed above before we make any major changes.

We had a great Public Service Kickoff which is not called the Randy Jenkins KA6BQF Public Service Kickoff. In part because Randy was one of the instigators of the kickoff and in part because Randy was a driving force behind making our Public Service Team so well respected in the bay area. We also awarded the first Annual Randy Jenkins Public Service Award to Victor Denisov N6DVS. This award is given by the Public Service Committee to new a Public Service Volunteer for

exemplary service. We were also graced at the kickoff by the presence of Rita Brenden KC6WPN Randy's life partner, MARS member, MARS board member, long time public volunteer, major donor to our club, and someone it has been my great pleasure to know.

73 de wa6uds

From the Editor:

March has arrived and we're getting closer to spring and better weather, although we've had a few spring-like days recently (in between freezing temperatures and rain). The HF bands have been generally strong with a few up and down noise level days. I'd like to remind new club members with their technician's license that you can get onto the 10-meter band (28.300-28.500 MHz) and experience HF, making contacts around the world. Eventually, this solar cycle will wind down and the 10-meter band will become a ghost town. Get in on the action now!

I'm going to include a section on antenna building in next month's issue, presenting easy to build HF antennas that have been thoroughly tested. I just built a 15-meter band vertical antenna that had an SWR of 1:1 on the first test! This antenna worked well on 10 through 40 as well. That will be the first antenna we look at.

As always, I'd like to thank Curtiss Kim and the usual suspects for their contributions. If you would like to contribute to our publication, please let us know and we'll include your submission in the next issue of the QSA-5. Also, if you have any topics you'd like to see within the pages of the QSA-5, email us. Have a great month!

QSA-5Editor@w6sg.net



New Members:

Donn Davy KO6HCM – Novato

Andrew Civin K6CE - Corte Madera

Rich Newton KD6ZZL - Novato

Paul Gusciora WA1NMT - San Rafael

Sheila Adams-Sapper KO6HYX - Novato

Barry Lifland KN6GSG - Moss Beach

Thomas Vogl KN6GKG - San Rafael





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

Marin Amateur Radio Society

Board of Directors Meeting

02/13/2025



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 as presented

Approve minutes: of 9 January board meeting – MSC to approve the minutes as presented in February QSA-5.

Secretary's Report/Communications: Renewed the Marin Amateur Radio Society Fictitious Business Name statement with the Marin County Recorder. Received 2025-26 Business and Auto Insurance renewals from our insurance agent and forwarded to the President. Sent proposed COI renewals list to NBAM committee for review.

Treasurer's Report: Bruce N6VLB – Published in February QSA-5

Members' Present: Skip Fedanzo KJ6ARL, Kathy Spicher KM6URP, Milt Hyams KM6ASI, Scott Asternack KN6ZDM, Dan Sobel N6HLZ, Charlie Benet AI6TT, Gerald McCarthy W6NOV, Jay Hamilton Roth KO6FIR

Committee and other Reports:

1. Membership: Curtis WA6UDS- 92 members. This is 56% of the membership at this time last year.

2. Facilities: Skip KJ6ARL- We still have a brush pile that was supposed to have been removed by the gardener. He will contact the gardener to remove them. Dan N6HLZ has been monitoring the drainage during the rainstorms.

3. VOAD/RCV: Skip KJ6ARL- Adriana Rabkin VOAD director was in LA and spent 6 days there during the LA fires doing VOAD co-ordination with the community-based organizations (CBO). Skip will go over her notes and compare them with RCV's plans. Good physical security is a big issue during an emergency, including security staff/guards and ability to do crowd control. RCV has an ICS forms review exercise and scenarios workshop on the 21st of February. March 1st an exercise using the west Marin UHF repeaters to determine how the comms work there with repeaters to connect to east Marin.

4. Technical Milt KM6ASI: New OCF dipole antenna has been suggested to trim the wire to move the sweet spot into the center of the bands. Mark B. suggested that we fold the wire back. 60 meters seemed to be poor until the middle of the Sunday net, then improved. The Sunday net may be tested at 40 and 80. ICOM pro internal tuner is tuning it well. An amplifier may be able to be used with this antenna, possibly an additional 200W, but additional RF exposure level Computations need to be done. Milt – Gerald McCarthy has provided a proposal for upgrading the radio room. This will be refined and presented at a future

meeting. We are looking at the prospect of going back to Big Rock for the simulcast system – details to come later.

5. Public Service Scott: KN6ZSM- Curtis got the event sign-up and kick off RSVP email on the website. MCBC has decided to do the Adventure Revival this season 9/20, this will be the 10th event. Moved & seconded, approved without objection to add the Adventure Revival as a 10th event of the 2025 public service station. Ed Essick asked if there was a way to request specific operator locations on the website when signing up. Scott replied that the individual event captain would work that out closer to the event. Scott asked if we would be interested in supporting the Sequoia 2025 Bike Ride, an event to the south of us, between Half Moon Bay and Big Basin. After discussion, it was decided club will not officially support but members will be made aware of it if they wish to participate as an individual. There will be one more PS committee meeting before the kickoff luncheon, February 22nd.

6. VE Testing: Jim KM6WWY- We had one successful candidate for Extra Class on January 11. 8 VE's were present, including a new volunteer VE from Sonoma County. Next VE session will be Saturday April 12, 1:00pm at the clubhouse.

7. Comm Truck: Jim KM6WWY- Cal Anber and Charlie Benet have volunteered to help do the monthly maintenance check list. I will go over the procedure with them in February.

8. NBAM: Bruce N6VLB, Kathy Spicher KM6URP – NBAM held a planning meeting for 2025 at the clubhouse Jan 18th, also in attendance was Adam McLaughlin and Bob Magnani (they are partners in ownership of the English Hill and Castle Rock repeater sites) and received permission to place a node or two on English Hill. Mark and Kathy have a March 4th meeting on zoom with Johanas Hovertsz, Director of Sonoma County Infrastructure for next steps for agreement for 4 sites in Sonoma County, Bay Hill, Mt. Barham, Sears Point and Mt Burdell, and possibly Sonoma Mountain and a tunnel at Sonoma County Public Infrastructure building. She and Jonathan did a repair and replacement on the Dillon Beach water department. Waiting for drier weather to complete that work. NBAM is still working with Ed Witts. He has a new WinLink gateway up and running at Fire Station #10 at Bodega Bay, we are starting to work on the demo site with him again, and he is happy to be able to send Winlink via AREDN. Met with one of the

Sonoma County COAD directors Nathan Gilfenbaum and 2 other COAD leadership members February 4th about LoRa, GMRS, and AREDN. She will be speaking to their group (75 different organizations) in May to find groups to best place AREDN infrastructure. Considering having two nodes at Salvation Army. AREDN was included in Winter Field Day in Sonoma County. Rob Rolands assisted with that demo. Johnathan Brown AK6VB scoping out various Public Service events in anticipation of AREDN use at one or two of those. May 31st is Disaster Preparedness Exercise at SoCo Fairgrounds, NBAM will participate. >>>> Skip asked if the Salvation Army site was in Petaluma - Yes, that was one of the original demo sites. Scott – MARS would like to try MeshTastic at a couple of Public Service events. Through North Sonoma County CERT, March 1st a training at SoCo Public Infrastructure for GMRS and LoRa. Rob Rolands and Kathy will be demonstrating the NBAM portable backpack units at the March 7th MARS general meeting.

9. Field Day: Steve KB6HOH – Curtis, we need to schedule a Field Day Committee meeting to kick off the planning for field day. Will be 3/12 at 7:00pm zoom meeting. Steve will be announcing at all nets for prospective committee members and volunteers.

10. Picnic: Steve KB6HOH Picnic committee will be discussed at the kickoff meeting of the Field Day committee.

Old Business:

1. Donations Committee Charter – Curtis has a bit more work to do on this one.

2. New Google environment – Online storage of club records – Bruce – Nothing new to report currently.

3. Website Issues – Curtis- Club website infrastructure is old, and he is migrating our website to a new version of WordPress. Membership application and name badge ordering are on the new software.

4. Budget – Curtis WA6UDS- 2024 actual budget/expenditures and a 2025 proforma budget were presented. 2024 ended with a \$22,148 surplus due to

several substantial cash donations to the club. All line items were reviewed and actual vs. budgeted amounts were discussed, along with changes that were needed. Money was budgeted for the upgrade of the clubhouse radio room. The proposed budget represented a shortfall of \$11,153.94. Items were reviewed with an eye to closing, or better yet eliminating, the shortfall. The final budget had a \$9,533.94 shortfall and \$55,204 total expenses. It was moved, seconded, and approved by a show of hands to accept the budget. Expenditures will be reviewed and approved during the year, as well as donations solicited to the club's various funds, with the intention of further reducing the shortfall. Approved 2025 budget included as attachment to these minutes.

New Business:

1. Insurance – Insurance renewal premiums, and associated increases, were approved as a function of the 2025 Budget.
2. Keeping public meetings fun- Continued to March 13, 2025, meeting.
3. How we publish our repeater info- Continued to March 13, 2025, meeting.
4. MCBC Adventure Revival 9/20-See Public Service report, above.
5. Club Badges - Continued to March 13, 2025, meeting.

Good of the Order: N/A

Executive Session: Not required.

Adjourn: MSC to adjourn at 2157 hours (9:57 PM)

Next Regular Meeting 7 March 2025

Next Board Meeting 13 March 2025

Attachment: Marin Amateur Radio Society Approved 2025 Calendar Year Budget

Marin Amateur Radio Society Budget

2024 Budget	2024 Actual	2025 Budget	Change	Notes
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Income					
Rent	31,900.00	31,900.00	33,100.00	1,200.00	Assumed rent
increased by \$100 per month from June					
Membership Dues	4,440.00	4,100.00	4,300.00	(140.00)	
General Donations	4,918.00	23,170.00	4,000.00	(918.00)	
Paint the Clubhouse	6,750.00	9,960.00	0.00	(6,750.00)	
Holiday Celebration	2,475.00	1,665.00	2,400.00	(75.00)	37 in 2024
Assuming 40 people at \$50					
Picnic	0.00	0.00	500.00	500.00	
Services to NBAM	0.00	0.00	250.00	250.00	
Income Total	50,483.00	70,795.00	44,550.00	(5,933.00)	
Expenses					
Utilites					
PG&E	3,979.00	3,621.00	3,983.10	4.10	
Phones/Internet	1,186.15	1,137.82	1,251.60	65.45	
MMWD	1,098.96	1,583.40	1,741.74	642.78	
Mill Valley Refuse	613.24	613.44	644.11	30.87	
Utilities total	6,877.35	6,955.66	7,620.55	743.20	
Rents					
Field Day Site Rental	34.00	34.00	34.00	0.00	
Web Site	0.00	677.49	25.00	25.00	Billed once every 3 years
P.O. Box	230.00	236.00	242.00	12.00	
Rents Total	264.00	947.49	301.00	37.00	
Taxes & Fees					
Property Tax	4,500.00	8,172.03	9,397.83	4,897.83	Last year I missed february payment. Increase by 15%
Franchise Tax	10.00	0.00	10.00	0.00	
Secretery of State	20.00	50.00	50.00	30.00	
Attorney General	25.00	0.00	25.00	0.00	
Total Taxes & Fees	4,555.00	8,222.03	9,482.83	4,927.83	
Insurance					
Insurance	8,419.00	8,735.84	10,381.80	1,645.96	
Insurance Total	8,419.00	8,735.84	10,381.80	1,645.96	
Professional Services					
Tax Preperation	1,000.00	1,000.00	1,000.00	0.00	Due to NBAM Grant
Legal Services	500.00	0.00	100.00	(400.00)	Last budget was \$500
Election Buddy	0.00	99.00	99.00	99.00	
Total Prof Services	1,500.00	1,099.00	1,199.00	(301.00)	
Broker quotes \$9438 but that is before the LA fires, so I am adding 10% for the assessment					
Maintenance					
Building Maintenance	14,000.00	4,621.06	4,500.00	(121.06)	
Com Truck	1,500.00	2,477.57	1,500.00	977.57	
Repeaters	1,000.00	2,158.67	2,000.00	1,158.67	

Club Radio Room	1,000.00	0.00	2,500.00	1,500.00
Maintenance Totals	17,500.00	9,257.30	10,500.00	3,515.18
Postage, Printing & Office Supplies				
Postage	64.00	0.00	50.00	(14.00)
Supplies	75.00	0.00	50.00	(25.00)
Printing	0.00	0.00	0.00	0.00
Quickbooks	745.00	730.00	790.00	60.00
Mailchimp	0.00	156.00	163.80	7.80
Total Office Expenses	884.00	886.00	1,053.80	28.80
Club Activities				
Awards	300.00	100.00	300.00	0.00
Swag	1,000.00	621.97	1,000.00	0.00
Zoom	150.00	0.00	0.00	(150.00)
Public Service	3,900.00	3,538.80	3,824.95	(75.05)
- Food	1,375.00	1,375.00	1,650.00	275.00 55 meals @ \$25
- Beverages	100.00	0.00	100.00	0.00
- Swag	850.00	953.08	924.95	74.95
- Office Supplies	75.00	0.00	0.00	(75.00)
- Training Materials	150.00	132.00	150.00	0.00
- Gold stars	100.00	0.00	100.00	0.00
- Caps and vests	750.00	905.53	400.00	(350.00)
- Breakage	0.00	173.19	0.00	0.00
- APRS/LoRa	500.00	0.00	500.00	0.00
Meeting Food/Sodas	250.00	959.29	2,040.00	709.29
Field Day	1,300.00	845.66	1,000.00	(300.00)
Picnic	2,000.00	1,705.10	2,000.00	0.00
Donations Committee	0.00	2,066.51	1,000.00	(,066.51)
Holiday Party	3,500.00	2,706.00	2,400.00	(1,100.00)
Total Club Activites	12,400.00	12,543.33	13,564.95	(1,982.27)
Total Expenses	52,399.35	48,646.65	54,103.94	8,614.71
Total Income	50,483.00	70,795.00	44,550.00	(5,933.00)
Net	(1,916.35)	22,148.35	(9,553.94)	(14,547.71)

Marin Amateur Radio Club

Balance Sheet Comparison

As of February 28, 2025

TOTAL

AS OF FEB 28, 2025

AS OF FEB 29, 2024 (PY)

ASSETS

Current Assets

Bank Accounts

B of A Facilities Account - 8795	2,078.40	5,385.61
B of A General account - 4328	76,905.63	61,951.95
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	\$78,984.03	\$67,337.56

Other Current Assets

Uncategorized Asset	0.00	385.00
Total Other Current Assets	\$0.00	\$385.00
Total Current Assets	\$78,984.03	\$67,722.56

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	\$137,967.03	\$126,705.56

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	-2,010.43	-11,443.35
Total Equity	\$137,967.03	\$126,705.56
TOTAL LIABILITIES AND EQUITY	\$137,967.03	\$126,705.56

Marin Amateur Radio Club

Profit and Loss

January - February, 2025

TOTAL

JAN - FEB, 2025 JAN - FEB, 2024 (PY)

Income		
Christmas Party Income		640.00
Donations	904.00	200.00
Dues	90.00	145.00
Rent	5,400.00	7,800.00
Unapplied Cash Payment Income		385.00
Total Income	\$6,394.00	\$9,170.00
GROSS PROFIT	\$6,394.00	\$9,170.00
Expenses		
Accounting	130.00	120.00
Awards	400.00	
Christmas Party		2,970.23
Contractors		11,000.00
Equipment < \$2,500	431.48	
Food	330.72	
Garbage	105.48	99.00
Insurance	567.00	
Comm Van Insurance	143.66	138.50
Total Insurance	710.66	138.50
Office Supplies & Software	26.00	
Public Service Expense	28.35	
Reimbursable Expenses	154.09	20.00
Repair & Maintenance	922.50	
Repeater		1,246.67
Taxes & Licenses	4,164.36	4,049.67
Utilities	537.43	739.74
Water	214.85	79.54
Web Services Expenses	0.00	
Total Expenses	\$8,155.92	\$20,463.35
NET OPERATING INCOME	\$ -1,761.92	\$ -11,293.35
Other Expenses		
MESH Grant Disbursement	248.51	150.00
Total Other Expenses	\$248.51	\$150.00

NET OTHER INCOME
NET INCOME

\$ -248.51
\$ -2,010.43

\$ -150.00
\$ -11,443.35

LIFE IS SIMPLE



MARS Club News

The PACE Method in Action

From Curtis Ardourel WA6UDS

Gentlemen,

Twenty-four individuals demonstrated a high level of interest in the hands-on exercise and dedicated their Sunday morning to learning from you. I extend my

gratitude to you and recognize your efforts to teach, encourage, and most importantly inspire Amateur Operators both new and seasoned.

Jerry's "McInnes" team (pictured below) exemplified the principle of "One is none and two is one," emphasizing the importance of having backups for essential items or plans to work through a radio failure and completing the training plan. This was nearly the case in the jury parking lot when a single misstep led to one of Milt's radios challenging the Law of Universal Gravitation. Thankfully, a quick radio reset by Rob kept the primary radio inservice and transmitting.

When I was assigned to large-scale emergencies outside of Marin County, I was routinely challenged to develop and implement a PACE plan. PACE stands for **P**rimary, **A**lternate, **C**ontingency, and **E**mergency, a methodology used to construct a communication plan. In my previous occupation, I found myself in the middle of the Rogue River–Siskiyou National Forest with a critically ill civilian whom failed to evacuate, without normal incident based COMMS (I was well outside repeater range). Knowing there was a National Guard rotor-winged aircraft assigned to my division, I hailed the aircraft on the emergency GUARD frequency as identified in the IAP and requested urgent MEDEVAC. The guard ship relayed my urgent request to INCIDENT COMMS and MEDIVAC was initiated. All in a day's work and all within the PACE plan established that operational period. Today, the PACE plan challenged you to attempt communications with NET CONTROL and subsequently determine, if feasible, a redundant form of communication to achieve the objective without each of you actually knowing you were exercising the PACE plan. In Jerry's case, this entailed activating the backup radio. In Jim's case, he attempted COMMS with a handheld rubber ducky antenna but switch to an Ed Fong suspended from an elevated position. In Milt's case it was resetting the radio. My point is that each of you, at some point, attempted your Primary COMM Plan but adjusted in some manner and implemented your Alternative plan to establish contact with NET CONTROL and thereby unknowingly used part of the PACE plan.



Cheers you for making today successful and most importantly inspire twenty four Amatuer Operators to engage in the hobby.

Best,

Gerald

Mondo Fondo



NORTH BAY 2-METER CRITICAL MASS PRESENTS

"MONDO FONDO"

A MARS PUBLIC SERVICE EVENT TRAINING EXERCISE
IN THE FORMAT OF A COURSEMARKER/GIMMICK CAR RALLYE

SUNDAY, APRIL 27, 2025 From 10:00am – 12:00pm

AT THE MARIN CIVIC CENTER JUROR'S PARKING LOT

(Civic Center Drive at Matthew Hymel Drive)



The theme of this event is based on the MARS Public Service Best Practices video on the MARS website (<https://w6sg.net/mvid.html>) and will serve to reinforce those practices while driving on a simulated public service event route. The objective is to learn and have fun at the same time.

This type of car rallye is not based on speed or time and no special vehicle is needed to participate. This event will take around an hour to complete and is run on nearby residential roads. Attached is a description of this type of rallye and what (few) items you will need to run it. There will also be a brief "rallye school" and a chance to ask questions on the morning of the rallye. After the rallye is over, we will meet at the Black Bear Diner in Terra Linda to hand out awards and have fun.

Please sign up for this event in advance at RSVP@W6SG.NET and we will

send you a set of instructions to review before the rallye.

MONDO FONDO (A CRITICAL MASS RALLYE)

Car Rallye History

Today's event is based on Coursemarker (CM)/Gimmick car rallies that were popular on the West Coast in the 1960's and 1970's. In fact, during the 70's, two rallies per month were held in Marin County. Other locations were in Oakland, Concord, Palo Alto, and Mountain View. CM-type rallies were an alternative to Time and Distance rallies in which you had to navigate between multiple locations on city streets at precise times and speeds. They often required expensive sports cars, sophisticated timing equipment, and the ability to make split-second decisions under time pressure. They were technically challenging and hardly a relaxing day spent in a car.

CM rallies do not require special cars or equipment and do not involve speed or time. You will need to drive below the speed limit in order to be able to locate and read signs along the route and you will often need to pull over and stop to interpret situations you encounter. Please be courteous to others that are not participating in the rallye by pulling off the road at safe places to let them by and not using driveways to make U-turns, etc.

A CM/Gimmick Rallye is full of puzzles and tricks. Your score is based on information you record on your score sheet, which shows how well you solved the puzzles and avoided being tricked. No speed or time is involved, other than a deadline to be at the finish location and nothing will trick you into disobeying any laws.

At the start of a gimmick rallye, you are given several sets of instructions. The General Instructions are the ground rules for the event, containing definitions, priorities, and other information. The Route Instructions direct you along a course from the start location to the finish location. You will not get lost if you simply follow the Route Instructions in the

obvious manner, ignoring any gimmicks. Other types of instructions can interact in various ways with the General Instructions, with the Route Instructions, and with each other. At the finish, you receive an answer sheet (the "Critique") that explains all the gimmicks.

Here's an example of an easy gimmick: a misspelled street name. Let's say that your current Route Instruction is "Turn right at Smith" when you come to Smyth Street. According to the General Instructions, the word "Smith" must appear on a sign where you do this Route Instruction, but the word "Smith" does not appear on the "Smyth Street" sign. If you continue straight (still looking for "Smith"), then you would get credit by recording a Coursemarker. A Coursemarker is usually a paper card on which is written a letter(s) and a number and is affixed to a telephone or utility pole. The number on the CM corresponds to another set of instructions that will get you back on course and working on the next instructions.

EQUIPMENT YOU WILL NEED

1. Vehicle (can be a bicycle)
2. Driver and Navigator (you can run solo, but it is easier and more fun with two or more people)
3. Pencil and Clip board
4. A licensed ham radio operator
5. 2 Meter Ham Radio capable of being tuned to Simplex frequencies 146.520 and 147.555. A 5-watt HT will suffice.
6. It is highly recommended that you view the "Best Practices Video Produced by Brian Cooley (K6EZX)" on the MARS website or directly from <https://w6sg.net/mvid.html>.

This rallye will be based on concepts discussed in this video.

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You are receiving this email because you opted in via our website.

Our mailing address is:

Marin Amateur Radio Society
PO Box 6423

San Rafael, CA 94903-0423

[Add us to your address book](#)

LAWMAKERS RECONSIDER MEASURE TO PROTECT ANTENNAS IN HOAS

While this isn't club news, it affects all amateur radio operators living under the rules of HOAs (Homeowner Associations). From Rob Rowlands

SKEETER/ANCHOR: The US Congress has also returned to considering a measure giving hams the right to install antennas that, until now, have been banned or restricted by homeowner associations. We have more on that from Paul Braun WD9GCO.

PAUL: A proposed law has been reintroduced in Washington, D.C. to restrict the power that homeowner associations, or HOAs, have to prevent ham radio operators from installing antennas outside their residences.

This is the latest version of the Amateur Radio Emergency Preparedness Act, which has been considered by US lawmakers over the past several years without taking any action.

The measure prohibits HOAs from writing rules that ban amateur radio antennas, which are recognized as part of an essential disaster communications system for public safety. The act also provides hams with a means of resolving disputes that arise in connection with their antennas.

The sponsors are US Senators Roger Wicker, a Mississippi Republican, and Richard Blumenthal a Connecticut Democrat. Opponents of the measure in previous years have raised concerns that large antennas spoil the aesthetics of a community. Many of the measure's supporters have countered that ham radio antennas should be given the same consideration as satellite dishes and TV antennas, which

many HOAs permit.

This is Paul Braun WD9GCO.

You can download the entire transcript from

here: <https://www.arnewsline.org/s/nsln2468.txt>

Or the audio from here: <https://www.arnewsline.org/s/Report2468.mp3>

ARRL also made a bulletin about this measure (they were broadcasting it on HF a few weeks ago)

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ARRL Bulletin 2 ARLB002

From ARRL Headquarters

Newington CT February 7, 2025

To all radio amateurs

SB QST ARL ARLB002

ARLB002 Amateur Radio Emergency Preparedness Act Re-Introduced

Legislation Will Increase Communication Options During Natural Disasters

WASHINGTON - U.S. Senators Roger Wicker, R-Miss., and Richard Blumenthal, D-Conn., and Representatives August Pfluger, R-Tex., and Joe Courtney, D-Conn. announced their joint re-introduction of legislation in the Senate and House to restore the right to Amateur Radio operators to install the antennas necessary to serve their communities.

Homeowner association rules often prevent Amateur Radio operators from installing antennas at their homes even though Amateur Radio has proven to be essential in emergencies and natural disasters such as hurricanes when other means of communication fail.

"Mississippians should have access to every possible means of

warning for natural disasters, including amateur radio operators. In an emergency, those warnings can mean the difference between life and death," Senator Wicker said. "The Amateur Radio Emergency Preparedness Act would remove unnecessary roadblocks that could help keep communities safe during emergencies like tornadoes, hurricanes, and fires."

"When disaster strikes, amateur radio operators provide vital, often life-saving information, which shouldn't be hindered by prohibitive rules or confusing approval processes. The Amateur Radio Emergency Preparedness Act eliminates obstacles for ham radio enthusiasts, allowing them to continue their communications and serve their communities in the face of emergencies," said Senator Blumenthal.

"Natural disasters and other emergency situations that hinder our regular lines of communication are unfortunately unavoidable, which is why we must bolster our emergency preparedness by removing the barriers amateur radio operators often run into when installing antennas. Amateur radio plays a vital role in public safety by delivering critical information to people at all times. My district is home to dozens of amateur radio operators ready to volunteer in the event of an emergency, and I am proud to lead this legislation," said Congressman August Pfluger.

"As we know from recent natural disasters, amateur radio operators in Connecticut can be a critical component of disaster response and emergency management. It is in our communities' best interest that we give them the capabilities to operate at the highest level, and with the re-introduction of this bill, we've taken a strong step in that direction," said Congressman Courtney.

Background:

The Amateur Radio Emergency Preparedness Act of 2025 (H.R. 1094 and S. 459) would require homeowner associations to accommodate the needs of FCC-licensed Amateur Radio operators by prohibiting the enforcement of private land use restrictions that ban, prevent, or

require the approval of the installation or use of Amateur Radio station antennas. Homeowner associations have often prevented installation and use of such antennas through private land use restrictions. This has hindered voluntary training for emergency situations and blocked access to necessary communications when disaster strikes.

Among other provisions, this legislation would:

- * Prohibit homeowner association rules that would prevent or ban Amateur Radio antennas
- * Specify an approval process for installing Amateur Radio antennas
- * Provide a Federal private right of action to Amateur Radio operators in disputed cases

On behalf of America's Amateur Radio licensees, Rick Roderick, the President of The American Radio Relay League, re-confirmed the ARRL's full support for the passage of the Amateur Radio Emergency Preparedness Act of 2025 and extended his thanks and appreciation to Senators Wicker and Blumenthal and Congressmen Pfluger and Courtney for their unflagging leadership of the bi-partisan effort to support and protect the rights of all Amateur Radio Operators.

The text of the House version can be found in PDF format at, <https://www.arrl.org/files/file/Advocacy/HR1094%20House%20Private%20Land%20Use%20Bill.pdf>

Public Service Radio Opportunities

From: Michael Fischer K6MLF

Hello, fellow radio operators—

The 2025 Marin Amateur Radio Society's public service season is underway—the first event is March 8.

Please check out this link for the schedule and to sign up for one or more events:

https://docs.google.com/document/d/1C_3zT2Y4TBbjeBe15Kn4_LVukXO178NUT0oCyAmORiE/edit?tab=t.0#heading=h.y80yqtdaykqw

If the link does not work for you, go to the MARS (K6GWE) homepage and click on it from there.

See you soon,

Michael K6MLF

2025 Public Service Season Signup List

From: Michael Fischer K6MLF

We had a great turnout of 55 amateur radio operators in the clubhouse last Saturday, most of whom are pictured here. Sorry we missed some of you North Bay 2-Meter Critical Mass and Southern Marin Fire radio team folks, but we hope to see you on one or more of the events coming up soon!



Takeaways from the LA Fire

By Curtiss Kim, KM6GUY

Trying to determine the impact of amateur radio in the devastating Los Angeles fires is somewhat hard to assess since many of those involved have yet to be debriefed. Since 1951 Southern California local law enforcement has been aided by a group of amateurs called The Los Angeles County Disaster Communications Service. Nearly 300 amateur radio operators are scattered throughout 88 cities in LA County providing back up communication services to law enforcement. The group boasts they have radio rooms in twenty Sheriff's substations plus three other county locations. I reached out to the agency for any insights into their impact but have not heard back. Job one for the Disaster Communication Services is facilitating communications between the county and other agencies when all else fails. Members receive training and are vetted before engaging in any activities. One of the stories emerging is the ham radio repeater that was installed six months ago by

the Ronald Reagan Post 283 of the American Legion. Their little “communication center” in the Pacific Palisades neighborhood proved invaluable when cell service was lost. Volunteers kept residents informed on exit routes and the fire’s progress mostly on handie talkies. The repeater was in constant use thanks to a backup battery and generator that was also installed. It was in use up to the very moment the building it was housed in burned to the ground. As soon as legion members were allowed back into the charred area they quickly replaced the repeater. The volunteers were quick to add that their communications saved lives.

Already shortcomings are starting to emerge from the various fires. When flames erupted around the City of Altadena, residents on the east side received evacuation orders but it was eight hours later when the cell alerts went out to residents on the west side of town. Of the 17 people confirmed dead in the Eaton fire, all were on the town’s west side. Then there was the software glitch that led to a county wide order to evacuate when it was meant only for homeowners around the Hurst Fire. Which brings up another concern. As the cell towers went down it delayed evacuation orders from reaching residents. Likewise, when cell service was restored, old evacuation orders that were stored were rebroadcast causing confusion. A friend of mine, State Senator Mike McGuire, the Democrat from Healdsburg was quoted as saying, “Having a functional cell phone isn’t about checking the latest Facebook status, it’s literally about life or death. For local emergency alert systems, if cell phone technology is not up and running during times of disasters, lives are at risk.” Other major flaws, text alerts referred residents to check certain websites for updated information. But many area residents were without internet. One saving grace proved to be Starlink, Elon Musk’s satellite internet system. It offered many in the affected areas some information. Many of the live tv reports emanating from the fire scenes were also done on Starlink. According to an article posted by ARRL, amateurs were deployed to serve evacuation centers as a means of communications. The bulletin goes to say amateur radio operators should be ready to take care of themselves and their families before needing to deploy. As more information starts to flow about the LA fires it’s become increasingly clear Murphy was right, “anything that can go wrong, will go wrong.”



Volunteer Examiner News

Dates remaining on our 2025 schedule will be Apr 12th, Jul 12th, and Oct 11th. Please mark your calendars.

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

January 19th, (third Sunday) James

February 23rd (fourth Sunday; third is President's Day) Milt

March 16th (third Sunday) Rob

April 27th (fourth Sunday; third is Easter) Michael

May 18th (third Sunday) James

June 22nd (fourth Sunday; third is Fathers' Day) Milt

July 20th (third Sunday) Rob

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 gathering was held on Sunday February 23rd at 10:00 to avoid President's Day Holiday. The February Critical Mass was an extension of November's Show and Tell session. The group focused on practicing deploying and operating some of the equipment introduced in November. Participants met at the usual place in the Marin Civic Center Juror's parking lot. Upon starting, participants broke into teams who were each assigned a different set of radio equipment and were then sent to a relatively near site to set up the station and check in. They had an opportunity to do their phonetic drill over the air on check in. The critical mass organizers provided the remote site equipment with an assigned mentor for each site. However, participants were asked in advance to bring their own HT if they had one. Participants tried different repeaters for this drill: Sonoma Mountain VHF 146.910 (-) PL 88.5 and Big Rock UHF 442.175 (-) PL 156.7. It was suggested that if participants were not confident in programming repeater frequencies into their radios in the field, they program them in

advance. One of the objectives of this exercise was to test communications into Southern Sonoma County, so participants can communicate with their Sonoma colleagues on their own site.

- The schedule for the day's events: 10:00 Arrival and Sign-in; check in with MARS Sunday Net. 10:05 Break into teams and assignment of equipment. 10:05 Break into teams and assignment of equipment. 10:15 Deploy to assigned sites and set up. 10:30 Commence check-in to primary Net Control (on Big Rock). Each station will check in as set up is complete. 10:45 Upon completion of all stations checking in with Net Control, each operator at each site will check in with Net Control giving call sign, name and site location phonetically. 11:15 After completion of individual check-in, each station will change frequencies to the Sonoma Mountain repeater and attempt check in to a different Net Control operating on the Sonoma frequency. 11:30-11:45 Attempt communication with all sites through Big Rock Repeater and after completing check in, break down site and return to main meeting site. 11:45-12:00 Debrief and closing of the session.

As you can see, we will have much to do in a short time. The purpose is to test your proficiency at establishing communications in the field in a minimum amount of time. No lectures this time. It will be your turn to demonstrate.

Thanks, Milt KM6ASI

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.

RCV In Good Form

From: Curtiss Kim KM6GUY: Members of the Radio Communication Volunteers (RCV) are in good form especially after a meeting at the Marin County Sheriff's Department. The group recently practiced completing the forms used in the Incident Command System. (ICS) Particular attention was focused on the ICS forms 201, 213 and 214. The session discussed the differences in each form, what information is expected and what happens once the forms are filled out. As an example, the ICS 201 logs the overall response to an emergency situation. Time, location and visual conditions upon arrival are detailed. The ICS 214 is an activity rundown noting time and resources requested. It also serves as a timetable when requests are made, and actions taken. The actual message passing happens with the ICS 213. It ties the community-based organization and the RCV operator together in a written form. A runner can pass the 213 for action by the radio operator. The entire ICS system was developed after a wildland fire raced through Southern California in the 1970's. The forms help effectively relay information from one response group to another and to update replacement crews. It has morphed into an all-risk, all-hazards system with far greater applications than simply wildland fires. Templates for the forms are available on the internet and programs like Winlink (radio email) use a dropdown menu listing the forms. Taking part in the exercise, the Director of Marin VOAD (Voluntary Organizations Active in Disaster), Adriana Rabkin. The official is tasked with coordinating disaster response and recovery efforts in the event of a major incident in Marin. Rabkin provided insight into what information should be logged into which forms and what should be avoided in filling out the documents. RCV has been active for over 4 years with the goal of providing emergency communications to agencies who serve the community during a major disaster. Some of the organizations taking part in the program include the San Francisco-Marin Food Bank, Canal Alliance, and the San Geronimo Valley Community Center. RCV is part of the Marin County Department of Public Works.

If you would like to find out more about RCV or signup to become a member, the website is MarinRCV.org.

(2nd picture) Adriana Rabkin, Director. Marin County VOAD

(3rd picture) Frt row seated, l to r Charlie Benet, AI6TT, Skip Fedanzo, Lead Operator, RCV, KJ6ARL, Bob Salter, AI6EE, Dirck Brinckerhoff, KM6VKQ, Ann Shores, K6SHO, (Back Row l-r)

Jim Saltzgaber, KM6WWY, Ed Essick, K6ELE, Curtiss Kim, KM6GUY, Dan Greely, KN6PNA, Jerry Foster, WA6BXV, Brian Cooley, K6EZX, Bruce Bartel, N6VLB



HF Radio 101

Baluns, Ununs, and Chokes: Essential Components for HF Radio

Baluns, Ununs, and Chokes are confusing to new amateur radio operators. Knowing which one to use with a specific antenna can be difficult at best unless you have a basic understanding of what they do, their differences, and how they work with your antenna.

Baluns, ununs, and chokes are specialized devices used in HF (High Frequency) radio systems to improve impedance matching, reduce common-mode currents, and enhance overall performance. These components play a crucial role in optimizing the transfer of power between the transmitter or receiver and the antenna.

A balun (balanced-to-unbalanced transformer) is used when one end of the transmission line is balanced (e.g., a dipole antenna) and the other end is unbalanced (e.g., a coaxial cable). It transforms the balanced impedance of the antenna to the unbalanced impedance of the feedline, preventing common-mode currents from flowing on the shield of the coaxial cable. This reduces interference and improves signal quality.

An unun (unbalanced-to-unbalanced transformer) is used when both the antenna and the feedline are unbalanced. It provides impedance matching between these two components, ensuring efficient power transfer. Ununs are often used with vertical antennas that have a ground radial system.

A choke is a type of inductor designed to block high-frequency signals while allowing lower frequencies to pass through. Chokes are often used to isolate the transmitter or receiver from the antenna system, reducing interference and improving stability.

The choice between a balun, unun, or choke depends on the specific antenna configuration and the desired impedance match. In some cases, a combination of these devices may be necessary to achieve optimal performance.

Proper impedance matching is essential for efficient HF radio communication. By using baluns, ununs, and chokes, operators can improve power transfer, reduce standing waves, and enhance the overall performance of their antenna systems.

How Baluns and Ununs Work

Ham radio Baluns, short for "balanced-to-unbalanced," are essential devices used in amateur radio to ensure efficient transmission and reception of signals. They serve as a bridge between balanced antennas, like dipoles, and unbalanced transmission lines, such as coaxial cables. Without a balun, the mismatch between these two types of systems can lead to signal loss, interference, and even damage to equipment. Baluns work by converting the balanced signal from the antenna into an unbalanced signal that can travel smoothly through the coaxial cable, or vice versa. This conversion helps maintain the integrity of the signal and prevents common issues like feed line radiation, which can distort transmissions and reduce performance.

The primary function of a balun is to manage impedance matching and current balance. Impedance matching ensures that the antenna and the transmission line have compatible electrical characteristics, minimizing reflections and maximizing power transfer. Current balance is equally important, as it ensures that the currents flowing through the two sides of a balanced antenna are equal and opposite, which is crucial for proper radiation patterns. When these currents are unbalanced, the coaxial cable can act as part of the antenna, leading to unwanted radiation and interference. Baluns address this by isolating the antenna from the feed line, ensuring that the signal remains clean and efficient.

There are several types of baluns, each designed for specific applications and frequency ranges. Common types include voltage baluns, current baluns, and choke baluns. Voltage baluns focus on maintaining voltage balance between the two sides of the antenna, while current baluns ensure equal current flow. Choke baluns, on the other hand, work by creating a high impedance to common-mode currents, preventing them from flowing back into the feed line. The choice of balun depends on factors such as the antenna design, operating frequency, and power levels. For example, a 1:1 balun is often used with dipole antennas, while a 4:1 balun might be used with folded dipoles or certain types of wire antennas.

Baluns also play a critical role in reducing noise and improving signal clarity. In ham radio operations, noise can come from various sources, including household electronics, power lines, and even the radio equipment itself. By ensuring proper balance and impedance matching, baluns help minimize these noise sources, resulting in clearer and more reliable communication. Additionally, baluns can protect the radio operator and equipment from potential hazards, such as static buildup or lightning-induced surges, by providing a controlled path for electrical currents.

Baluns are indispensable tools for amateur radio operators using wire antennas, enabling efficient and effective communication by managing the transition between balanced and unbalanced systems. They ensure proper impedance matching, maintain current balance, and reduce interference, all of which contribute to optimal antenna performance. Whether operating on HF, VHF, or UHF bands, the use of a balun can significantly enhance the quality of transmissions and receptions.

Ham radio Ununs, short for "unbalanced-to-unbalanced," are specialized devices used in amateur radio to match impedance between different components of an antenna system. Unlike baluns, which convert between balanced and unbalanced systems, ununs are designed to work with unbalanced systems, such as coaxial cables and certain types of antennas. They are particularly useful when connecting antennas with different impedance values to transmission lines, ensuring efficient power transfer and minimizing signal loss. Ununs are commonly used in scenarios where impedance transformation is needed, such as when feeding a high-impedance antenna with a low-impedance coaxial cable or vice versa. By providing this impedance matching, ununs help optimize the performance of the antenna system.

The primary function of an unun is to transform impedance, which is the resistance to the flow of electrical energy in a circuit. In ham radio, impedance mismatches can lead to reflected power, standing waves, and reduced signal strength. Ununs address this by stepping up or stepping down the impedance to match the antenna and transmission line. For example, a 4:1 unun can transform a 200-ohm impedance to 50 ohms, which is the standard impedance for most coaxial cables used in amateur radio. This transformation ensures that the

maximum amount of power is transferred from the transmitter to the antenna, improving overall efficiency and reducing the risk of damage to equipment.

Ununs are often used in conjunction with wire antennas, such as end-fed half-wave (EFHW) antennas or random wire antennas, which typically have high impedance values. These antennas are popular among ham radio operators due to their simplicity and versatility, but they require impedance matching to work effectively with standard 50-ohm coaxial feed lines. An unun placed at the feed point of the antenna performs this matching, allowing the antenna to operate efficiently across a wide range of frequencies. Additionally, ununs can be used in multi-band antenna systems, where they help maintain consistent performance across different frequency bands.

Another important application of ununs is in reducing common-mode currents, which can cause interference and noise in the antenna system. Common-mode currents occur when unwanted signals travel along the outer shield of the coaxial cable, disrupting the desired signal. Ununs, particularly those designed as choke baluns, can suppress these currents by creating a high impedance path, preventing them from affecting the transmission. This not only improves signal clarity but also reduces the risk of interference with nearby electronic devices. In this way, ununs serve a dual purpose: they match impedance and help maintain a clean, efficient signal path.

Ununs are essential tools for ensuring proper impedance matching and efficient signal transfer in unbalanced antenna systems. They are particularly valuable for wire antennas and multi-band setups, where impedance transformation is often required. By matching impedance and suppressing common-mode currents, ununs enhance the performance of the antenna system, leading to clearer transmissions and better reception. Whether used in portable operations, field setups, or permanent installations, ununs play a crucial role in helping amateur radio operators achieve optimal performance from their equipment.

Baluns and Ununs: Balancing the Antenna

Baluns and ununs are devices used in radio frequency (RF) systems to match the impedance of an antenna to the transmission line. This matching is crucial for efficient power transfer and to prevent common-mode currents from flowing on the shield of the coaxial cable.

- **Balun (Balanced-to-Unbalanced Transformer):**
 - A balun is used when one end of the transmission line is balanced (e.g., a dipole antenna) and the other end is unbalanced (e.g., a coaxial cable).
 - It transforms the balanced impedance of the antenna to the unbalanced impedance of the feedline.
 - This prevents common-mode currents from flowing on the coaxial cable's shield, reducing interference and improving signal quality.
-
- **Unun (Unbalanced-to-Unbalanced Transformer):**
 - An unun is used when both the antenna and the feedline are unbalanced.
 - It provides impedance matching between these two components, ensuring efficient power transfer.
 - Ununs are often used with vertical antennas that have a ground radial system.

How they work: Both baluns and ununs use magnetic coupling to achieve impedance transformation. They consist of two or more windings of wire that are magnetically coupled. The turns ratio of these windings determines the impedance transformation. For example, a 1:1 balun has equal numbers of turns on the primary and secondary windings, while a 4:1 balun has four times as many turns on the primary winding.

By carefully selecting the turns ratio and design of the balun or unun, it is possible to achieve the desired impedance match between the antenna and the transmission line. This ensures efficient power transfer and reduces standing waves, leading to improved signal quality and reduced interference.

What does 4:1 or 9:1 Mean for Baluns and Ununs?

The job of a Balun or Unun is to match an antenna to the transceiver it's attached to. Most transceivers have an impedance of 50 Ohms. However, antennas can have an impedance range between 200 and 2450 Ohms. The transceiver and the antenna must have matching impedance to operate correctly. The Unun or Balun does that. This is why they are necessary.

These devices are available in various designs and impedance ratios. The appropriate choice depends on the specific requirements of the antenna and the transmission line. It's important to select a balun, unun, or choke that is rated for the desired frequency and power level.

By understanding the role of baluns, ununs, and chokes and selecting the appropriate devices for their antenna system, ham radio operators can optimize their communication and achieve successful results.

Baluns and Ununs: When to Use Them

- **Balanced antennas:** Dipoles, inverted-V antennas, and slopers are examples of balanced antennas that require baluns.
- **Unbalanced antennas:** Vertical antennas with a ground radial system are examples of unbalanced antennas that often require ununs.
- **Coaxial feedlines:** Both baluns and ununs are commonly used with coaxial feedlines.
- **Impedance mismatches:** If you're experiencing high SWR or other signs of impedance mismatch, a balun or unun may be necessary.
- **Reducing common-mode currents:** Baluns are particularly useful for preventing common-mode currents from flowing on the shield of a coaxial cable.

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 regarding the world of amateur radio:

Ham radio and the world of amateur radio operators: A nice piece on amateur radio operators in Canada.

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

Get Ready for "Ham Radio Open House" on World Amateur Radio Day 2025: For all you DXers, this is a great opportunity to make those hard to get contacts!

<https://www.arrl.org/news/get-ready-for-ham-radio-open-house-on-world-amateur-radio-day-2025>

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/>

Masonic Amateur Radio Club demonstrates ham radio hobby in Great Falls: A nice piece on what all amateur radio clubs should be doing to keep amateur radio alive.

<https://www.krtv.com/news/great-falls-news/masonic-amateur-radio-club-demonstrates-ham-radio-hobby-in-great-falls>

Amateur Radio is Put in A New Light Thanks to Brandon Radio Club: The Brandon Radio Club is getting people interested in amateur radio by getting them on the air at their events.

<https://www.ospreyobserver.com/2024/07/amateur-radio-is-put-in-a-new-light-thanks-to-brandon-radio-club/>

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. We found one new article of interest.

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

<https://www.arrl.org/news/the-arrl-solar-report-2>

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/>