



Great Falls Area Amateur Radio Club Newsletter

March
2025

Presidents Corner:

Well, we are facing a Montana Spring. A spring that is just tempting us to get outside and enjoy the weather before it throws us another cold one. As we bounce between somewhat warm and definitely colder weather, I think about the things I need to do to get my Antenna up and running and my Ham shack in order. How are you doing with the winter/spring temperatures? Do any of you have plans for Antenna work or Ham Shack organizing?

I hope you all have started to go through your treasures and are getting ready for our 10th annual Spring Thaw on Saturday May 3 at the DES Facility. This year the Great Falls Masonic Amateur Radio Club will be joining us to make this a Great Falls Community event. The theme will be geared towards the “Makers” of our hobby. With refreshments, prizes and demonstrations, the event will start at 9am and run until 2pm. See you there!

I am itching to get out on some of our clubs Activities this summer and we have a lot planned. With the Spring Thaw, POTA, Lewis n Clark on The Air

being just a few of the activities planned for the summer, I am expecting a very fun and eventful summer.

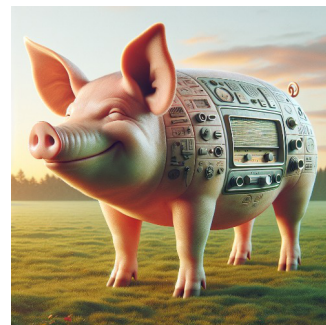
Please remember, in our effort to be more effective in our community, we will be transitioning our general meetings more toward, but not limited to, presentations, activities and pertinent information, leaving the board meeting to conduct the club business. The Board meetings are now being held at the same time and place but have moved to the 3rd Monday of the month. General meetings are open to all members and the public, whereas the Board meetings are open to Officers and Board members and also the general membership. Members are always invited and encouraged to attend.

Hope to hear you on the air waves and see you at the next meeting.

de Gigi, KD7GG

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GFAARC Officers & Directors

President	Gigi Armstrong	KD7GG	Annual
Vice President	Joe Kuhn	KJ7ROZ	Annual
Secretary	Bill Reid	AE7IQ	Annual
Treasurer	Cyndi McMullen	YL of WA6JIX	Annual
Director	Cam Smith	N7NBB	2026
Director	David Kelley	KI7QQC	2026
Director	Gary Szabo	K7SOF	2028
Director	Jim McMullen	WA6JIX	2028
Director	Rex Coldren	N7RAC	2028

Next Club Meeting: 7 April 2025 Next Board Meeting: 21 April 2025
Zoom credentials are included in the email this document is attached to.

Awards

This is the first in a series of articles about awards, both national and local, that Amateur Radio Operators can earn.

Worked All States (WAS) Award

The Worked All States (WAS) award is one of the most sought-after, and perhaps easiest, honors to earn in amateur radio. To earn this award, operators must make confirmed contacts with all 50 U.S. states. This challenge not only tests your skills but also encourages you to explore different bands and modes, enhancing your overall experience in the hobby.

To get started, it's essential to familiarize yourself with the rules and guidelines set forth by the ARRL. You'll need to keep accurate logs of your contacts and submit them for verification. Many operators find that using digital modes, such as FT8 or PSK31, can help them make contacts more efficiently, especially when conditions are less than ideal.

As you work towards your WAS award, consider joining online forums where you can share tips and strategies with other operators. Engaging with the community can provide valuable insights and motivate you to reach your goals. Plus, you might even discover new friends along the way who share your enthusiasm for amateur radio.

Emergency Communications

This is the first part of a series about both ARES and emergency/disaster communications in general.

Amateur Radio Emergency Service (ARES)

by Bruce Clark KA2ODP

The Amateur Radio Emergency Service (ARES) is a function of the American Radio Relay League (ARRL), a nationwide organization of licensed Amateur Radio operators founded in 1914. The ARRL is a non-commercial organization of radio amateurs. That numbers within its ranks the vast majority of active radio amateurs in the nation and has a proud history of achievement as the standard-bearer in Amateur Radio affairs. The ARRL works with the U.S. Congress and the FCC to advocate for our access to various frequency bands across the entire radio spectrum.

The ARES program consists of licensed amateurs who have voluntarily registered their qualifications and equipment, with their local ARES leadership, for communications duty in the public service when disaster strikes. For more information, please visit: <http://www.arrl.org/ares>

At the local level here in Cascade County, Montana, the ARES program works with the Cascade County Disaster and Emergency Services (DES) office.



meeting, please arrange to have someone else takeover for you or send an email to KD7GG@arrl.net. April's cookie monster is Joe Kuhn, KJ7ROZ

What's Happening

12 April 1000 - 1100
Planning session at DES

13 April 0900 - 1400
Army Reserve Center south of the base. We will be providing comm support to a dog handler group simulating a Search & Rescue type event.

3 May 0900 - 1400
Our annual Spring Thaw is back at DES. Come find new treasure and join in a class or two.

31 May - 15 June
Lewis & Clark On the Air. Have fun with this event as we commemorate this historic journey.

28 - 29 June 1200 - 1200
Field Day is a fun time where we set up and simulate communications in a emergency or disaster scenario. Come out and help make this event great.

18 - 20 July
Glacier Waterton Hamfest . Come spend a fun 3 days and be a part of the oldest Hamfest in the world.

Cookie Monster or should I say Treat Monster List:

Cookie Monsters should bring some sort of treat, sweet or healthy. If for some reason, you cannot make the

Working Split Operation DX

By Don Baldwin, W7VHW

I realize that nobody asked this question, but I want to offer some advice for those of you who want to work DX on the HF bands. Lately I've been hearing a lot of US stations who seem unaware of how to do "split" operation. I have concluded that there are simply a lot of new US hams who have never been taught how to do this. It is not part of the license exam – it is something you need to learn from other hams. So here goes.... Apologies to those who already know this.

Have you been frustrated because you have tried and tried to work a DX station, but he (or she) never seems to hear you, even when he has a good signal? It might be because he is operating split and not listening on his transmit frequency for calls. If you tune around a bit (usually up), you will hear a crazy pileup of stations all calling the DX. That is where the DX station is listening. He will never hear you calling on his frequency.

When a DX station shows up on the band, especially if it is a "rare" country or a DXpedition, hundreds of hams crowd on top of each other hoping to work the DX station. Not surprisingly, this is called a "pileup" You can imagine the tremendous amount of QRM this generates on the frequency – dozens, sometimes hundreds of stations all calling the DX at once on the same frequency. The

biggest part of the problem is, all those stations can completely cover up the DX, and nobody can hear him!

The solution to the problem is split operation. The idea is this: The DX station gets his own clear frequency, and no one else transmits on that frequency except the DX station. Those who want to work the DX transmit a few kHz away from the DX, so they don't cover him up. In a way, this is kind of like duplex operation for a repeater. The DX station still has to sort through all the stations calling him, but at least all the dozens of stations chasing him can hear the DX when he responds to somebody.

The problem that commonly occurs is when the "chasers" call the DX on what is supposed to be his clear transmit frequency. Sometimes this happens accidentally, but I often hear stations who call the DX over and over on his frequency, causing QRM for the rest of the crowd. The offending caller seems unaware that the DX station is listening elsewhere for calls.

If you want to chase DX, you need to learn how to do split operation with your rig. Most modern rigs have "dual VFO's" or something similar. It takes a little learning to figure out how to make your rig do this – the owner's manual will explain it. You will be much more successful at working DX once you learn this trick!

This article was originally published in the Friendly Amateur Radio Elmers Facebook group. Don has graciously given us permission to reprint it in our newsletter. Don is an Amateur Extra Class operator and avid DX'er out of Durango, CO.

Earth-Moon-Earth EME

Gigi KD7GG

What is EME, or Earth-Moon-Earth communication?

EME, also referred to as moon bounce, is a fascinating method used by ham radio operators to communicate over long distances by bouncing radio signals off the moon.

The history EME communication dates back to the early days of radio experimentation. The first successful EME contact was made in 1960 by a group of amateur radio operators who utilized the Moon as a reflector for their signals. This groundbreaking achievement opened up new possibilities for long-distance communication and demonstrated the potential of radio waves to traverse the vastness of space.

Since then, EME has evolved significantly, with advancements in technology enabling more operators to participate in this unique form of communication. The significance of EME in amateur radio lies not only in its technical challenges but also in its ability to foster a sense of community among operators. EME enthusiasts often share their experiences, techniques, and successes, creating a collaborative environment that encourages learning and innovation.

As a result, EME has become a hallmark of achievement within the amateur radio community, inspiring new generations of

(Continued on page 4)

operators to explore the wonders of radio communication. The process begins when a radio operator sends a signal from their station on Earth toward the moon. This signal travels through space, reaching the moon's surface, where it reflects back toward Earth.

The challenge of EME communication lies in the vast distance involved, as the moon is approximately 238,855 miles away. Because of this distance, signals can weaken significantly, making it essential for operators to use powerful transmitters and large antennas to ensure their signals are strong enough to make the journey. Additionally, operators often need to carefully time their transmissions to coincide with when the moon is in the right position for optimal signal reflection.

Receiving the bounced signal requires another operator to have their equipment set up correctly to catch the returning signal. This can involve using sensitive receivers and precise tuning to pick up the faint signals that come

back from the moon. Successful EME contacts can be quite rewarding, as they demonstrate the technical skills and patience of the operators involved.

Overall, EME is not just a unique way to communicate; it also represents a blend of science, technology, and amateur radio enthusiasm. Showcasing the technical skills of amateur radio operators while highlighting the innovative spirit of the community in exploring the boundaries of radio communication.

Many ham radio operators enjoy the challenge of making EME contacts, as it allows them to connect with fellow enthusiasts around the world in a truly extraordinary way.

SKYWARN

SKYWARN is a volunteer program established by the National Weather Service (NWS) that trains individuals to observe and report severe weather conditions. The primary purpose of SKYWARN is to enhance public safety by providing timely and accurate weather information to the NWS. Volunteers, known as weather spotters, are trained to identify and report various severe weather phenomena, including tornadoes, severe thunderstorms, hail, and flooding.

The program operates on the principle that local observations can significantly improve the accuracy of weather forecasts and warnings. While radar technology has advanced considerably, it cannot capture all weather events, especially in rural or remote areas. SKYWARN spotters fill this gap by providing real-time reports that help meteorologists assess the severity and impact of weather conditions.

The SKYWARN program was initiated in the 1970s in response to the need for more accurate and timely weather warnings. The program began as a grassroots effort, with local volunteers reporting severe weather to the NWS. Over the years, it has evolved into a nationwide network of trained spotters who work closely with meteorologists to improve weather safety.



MONTH	BOARD MTG.	GENERAL MTG.	VE TESTING	MT SECTION MTG.	REMARKS
JANUARY	1/27/2025	1/6/2025	1/7/2025	1/14/2025	Winter Social replaces general meeting
FEBURARY	2/24/2025	2/3/2025	2/4/2025	2/11/2025	
MARCH	3/17/2025	3/3/2025	3/4/2025	3/11/2025	
APRIL	4/21/2025	4/7/2025	4/8/2025	4/8/2025	
MAY	5/19/2025	5/5/2025	5/6/2025	5/13/2025	
JUNE	6/16/2025	6/2/2025	6/3/2025	6/10/2025	Testing held at Glacier-Waterton Hamfest
JULY	7/21/2025	7/7/2025	7/8/2025	7/19/2025	
AUGUST	8/18/2025	8/4/2025	8/5/2025	8/12/2025	
SEPTEMBER	9/15/2025	9/8/2025	9/2/2025	9/9/2025	General Meeting changed for Labor Day
OCTOBER	10/20/2025	10/6/2025	10/7/2025	10/14/2025	MT Section Meeting on Veteran's Day
NOVEMBER	11/17/2025	11/3/2025	11/4/2025		
DECEMBER	12/15/2025	12/1/2025	12/2/2025	12/9/2025	

What's In The Box?

Most of us go into the shack, get comfortable, flip the power switch on, spin the VFO and then go chasing contacts. But how often do we think about what makes it all tick? This series will have a look at all of the working blocks in our transceivers so lets have some fun with this.

Understanding the Input Stage in Modern Transmitters

The input stage of a modern transmitter is a fundamental component that plays a critical role in preparing signals for transmission. This stage is responsible for accepting various types of input signals, which can include audio, digital data, and other forms of modulation. For amateur radio operators, understanding the input stage is essential for effective communication, as it directly influences the quality and clarity of the transmitted signal. By mastering this stage, operators can ensure that their transmissions are clear and intelligible, regardless of the mode they choose to operate in.

In the context of amateur radio, the most common input signals are audio and digital data. Audio signals typically originate from a microphone, where operators convert their voice into an electrical signal. This signal is then processed by the transmitter to modulate the carrier wave for transmission. In contrast, digital data signals are generated by

computers or other digital devices, which encode information in a format suitable for transmission. Modes such as FT8, PSK32, and RTTY rely on these digital signals, which require specific encoding and modulation techniques to ensure accurate transmission. Understanding the nature of these input signals is crucial for operators, as it affects the choice of equipment and settings used during operation.

Another important aspect of the input stage is mode selection, which allows the user to choose the operating mode that best suits their communication needs. Modern transmitters are equipped with user-friendly interfaces that enable operators to switch between various modes, including Continuous Wave (CW), Phone, Single Sideband (SSB), FT8, PSK32, and RTTY. Each mode has its unique characteristics and applications, making it essential for operators to understand the differences. For example, CW is a highly efficient mode that transmits information using on-off keying, while SSB is commonly used for voice communications, providing better bandwidth efficiency compared to traditional amplitude modulation (AM).

The selection of operating mode is typically accomplished through a combination of hardware controls and software interfaces. Many modern transmitters feature a digital display and a set of buttons or knobs that allow users to navigate through the available modes. Additionally, software-defined radios (SDRs) offer even greater flexibility, enabling operators to select modes through graphical user interfaces on their computers. This ease of mode selection empowers amateur radio operators to adapt to different communication scenarios, whether they are participating in casual conversations, contesting, or engaging in digital modes.

In conclusion, the input stage of a modern transmitter is a vital component that prepares various input signals for transmission. By understanding the nature of these signals, including audio and digital data, as well as the importance of mode selection, amateur radio operators can enhance their communication capabilities. Mastering the input stage not only improves the quality of transmissions but also enriches the overall experience in the amateur radio hobby. As technology continues to advance, staying informed about the capabilities of modern transmitters will enable operators to make the most of their equipment and enjoy the diverse world of radio communications.

SKYWARN Training

Al Simons (WA1TYB), the Montana Section ARES Emergency Coordinator, sent out a notice of a Storm Spotter training course that will be available via Zoom.

Date: 10 April 2025 (Thursday)
Time: 7:00 PM

Zoom Link: [https://zoom.us/j/99165237786?](https://zoom.us/j/99165237786?pwd=kbszWfKJ1KICPERITgdDtf)
[pwd=kbszWfKJ1KICPERITgdDtf](#)



**Great Falls Area Amateur Radio Club
Board of Directors Meeting
March 17, 2025**

The meeting was called to order at 7:10 pm with the following individuals in attendance: Cyndi McMullen, Gary (K7SOF), Jim (WA6JIX), Joe (KJ7ROZ), Gigi (KD7GG), Rex (N7RAC), Bill (AE7IQ) and club members Bruce (KA2ODP), David (KG6JOL on Zoom).

The Pledge was led by Gary.

Minutes: The minutes were presented, and a spelling correction was noted. Discussion was held concerning the moving of the BOD meeting. The original move was to have the BOD meeting moved 1 week earlier but some individuals understood that it was to be on the 3rd Monday of the month. The motion to accept the minutes as corrected was made by Jim with the second by Joe. The motion passed.

Treasurer's Report: Cyndi presented the Treasurer's Report. It was reported that there are currently 31 club members for 2025 and 4 club members for 2026. Rex had a question concerning family and associate members and their voting and dues. It was explained that family members are individuals living the same household but do not have voting rights and associate members are other individuals with an interest in the club and they also do not have voting rights and the cost for each is \$10.00 per year. The motion to accept the report was made by Jim with the second by Gary. The motion passed.

Dave (KG6JOL) presented an event that the club could possibly take part in on Apr 12th and 13th. This is a Search and Rescue (S&R) training exercise with Central Montana Canine and Civil Air Patrol (CAP). The event is scheduled to take place at Giant Springs State Park. It would be training for CAP in S&R operations. It is currently intended to be somewhat informal and an ice-breaker type of event. The club could operate a VHF net for the S&R portion and possibly a POTA activation as a club event. Dave has also contacted CERT but they have their own training scheduled for same time period. Gary also provided the CERT senior coordinator contact information to Dave. This will be discussed at the General Meeting with the club membership. It was also mentioned that flyers for the Spring Thaw could be passed out.

Repeaters: The repeaters all appear to be working normally.

Education: No report.

VE Testing: The listing on the ARRL website needs correcting to reflect the area rather than just the city.

Awards and Silent Key: Cam (N7NBB) is aware of the passing of Donnie Fort and will make arrangements for the Silent Key plaque. No other awards noted.

Sky Warn: No report.

ARES: Bruce reported that CERT is having the practical testing on Apr 12th. There is online course work that needs to be completed before the testing and these are listed on the club forum.

Activities: Jim is planning for 3 activities at the next club meeting. The first is a survey of what the members would like to see for up coming activities. Then have a round table discussion and then a short program.

Upcoming Events: Upcoming events were reviewed. The first is the upcoming Spring Thaw in May and Rod (AE7JJ) would still like some more assistance. Then is the Lewis and Clark Trails on the Air, Field Day on Jun 27th an 28th needs to get organized. Then the Glacier Waterton Hamfest in July.

Old Business: The status of the Post Office Box was reviewed. The information on the box is very old and out of date. There is currently only 1 key for the box. Discussion was help concerning adding additional people to the access listing and getting an additional key at the cost of \$17.00. The motion was made by Gigi to update the listing and have the President, Secretary and Treasurer listed on the box and obtain a second key. The second was made by Jim. The motion passed.

New Business: Discussion was held on the newsletter. For the current time the newsletter will be every other month and might be increased depending on the interest and information that is provided. The due date for the material is based on the time required to format and have the newsletter out in time for the membership to receive and review before the General Meeting. Discussion was held on the timing of the BOD meeting either moving it up one week or having it on the 3rd Monday of the month. The consensus was the 3rd Monday was the better choice since that is a consist time and easier to remember.

Cookie Monster:

Program:

The meeting was adjourned at 8:30 pm.

Submitted,
Bill Reid, AE7IQ
Secretary

GREAT FALLS AMATEUR RADIO CLUB GENERAL MEETING

March 3, 2025

The meeting was called to order at 7:00 pm by Gigi (KD7GG). With 12 members and 2 guests in attendance.

The pledge was led by Gary (K7SOF).

Minutes: The BOD minutes were reviewed with a correction to Doug's call sign noted, should be W7MEX. The motion to accept was made by Gary (K7SOF) and the second by Jim (WA6JIX). The motion passed.

Treasurer's Report: The report was presented by Cyndi McMullen. Cyndi noted the reports will start reflecting the balance at the end of the month to match the bank statement. At that time there were 37 club members for 2024 and 18 club members for 2025. Cyndi noted that the PayPal amount would be transferred to the savings account. The motion to accept was made by Rod (AE7JJ) and seconded by Gary (K7SOF). The motion passed.

Repeaters: Gary (K7SOF) and Jim (N7YO) reported the repeaters were working and no known problems.

Education: Cam (N7NBB) reported there are no plans at this time for a class but said that one after the Spring Thaw event there might be one.

VE Testing: Gigi (KD7GG) reported that testing would be happening normally. Jim (WA6JIX) reported that he is getting the tablets online and working to determine if the tablets could be used with the ARRL system or only the W5YI testing system. The tablets will generate all the required for the W5YI system. The license for the tablets can be gotten in 2 to 3 days.

Awards: No report.

ARES: No report.

Skywarn: No Report.

Winer Field Day: Winter Field Day was held in conjunction with the Masonic Radio Club at the DES facility. In addition Civil Air Patrol (CAP) and the K9 were in attendance. The CAP brought their HF equipment and the K9 did a demonstration during the event. This was pushed as a community event as opposed to just a radio event.

WEB Page: Doug (W7MEX) and Dave (KI7QQC) are working on getting the information, calendars, and other information current. They are planning on consolidating all the information together. They are also working on a club page for the QRZ system.

Spring Thaw: Rod (AE7JJ) reported that this year's Spring Thaw will be on May 3, 2025 from 9:00 am to 1:00 pm in conjunction and with help from the Masonic Radio Club. He has a Lainson with that club and would like a volunteer from our club. It is planned as a community event with the theme of "Makers". Rod is looking for presentations for the event. Rod also reported that he has a large number of components that would be available for "cheap".

Glacier Waterton Hamfest: Rex (N7RAC) reported that the Hamfest will be on Jul 18 --20, 2025 at Glacier Meadows Campground. The registration is open and people are reminded that the campsite reservations are a separate reservation from the Hamfest and need to be made and confirmed with the campground. Rex noted that there are 2 places for donations, on the HamFest registration, but the only one that goes to the Hamfest is on the checkout page. The other goes to the reservation supplier.

Lewis and Clark Trails on the Air: Bill (AE7IQ) reported that the event is scheduled for May 31 – Jun15, 2025 which is a week earlier than in the past. The special event call sign has been updated to reflect this change.

Other: It was reported that John Greer's (AG7AD) wife has passed away.

Old Business:

None

New Business:

Programs: Jim (WA7JIX) announced that he is looking for short (approximately 15 – 20 minute) programs to be presented after the meetings. The programs can be about any aspect of ham radio and do not need to be professionally polished.

Elections: Elections for the 1 year Board of Directors (BOD) were conducted. There are 3 positions that are open and 2 are carrying over until 2026. The carrying over are Cam (N7NBB) and Dave (KI7QQC). The directors that are up for election are Jim (N7YO), who is stepping down, Dee (W7DDL), who is stepping down, and Bruce (KA2ODP), who is running for reelection. Nominations from the floor were: Gary (K7SOF), Jim (WA6JIX) and Rex (N7RAC). The results of the election resulted in Gary, Jim and Rex being elected.

March Program: Jim (WA7JIX) Organic Map application

Cookie Monster: Bill (AE7IQ)

Submitted,

Bill (AE7IQ),

Secretary