DUTCH FORK AMATEUR RADIO GROUP W4DFG
PALMETTO AMATEUR RADIO CLUB W4MN
LITTLE MOUNTAIN, SC

DFARG Signal

Volume 7, Issue No. 8

September 16, 2025

Once in a blue moon?

Amateur radio has always been a field that combines experimentation, communication, and the pursuit of technical challenges. Among the many operating modes available to radio amateurs, one of the most fascinating and technically demanding is Earth-Moon-Earth (EME) communication, often referred to as "moonbounce." In this activity, radio signals are transmitted from Earth, reflected off the surface of the Moon, and received back on Earth, either by the same station or by a different one located elsewhere. The path traveled is roughly 770,000 kilometers (the round-trip distance to the Moon), making EME one of the longest possible non-satellite communication The concept of bouncing radio waves off the Moon was first proven shortly after World War II. In 1946, the U.S. Army Signal Corps conducted Project Diana, in which radar signals at 111.5 MHz were successfully reflected off the Moon and received back on Earth. This experiment demonstrated not only the feasibility of EME communication but also helped expand scientific understanding of ionospheric behavior and long-distance radio propagation.

Amateur radio operators, inspired by this breakthrough, began experimenting with their own equipment. By the 1950s, the first amateur EME contacts were being made, typically using the 2-meter and 70-centimeter bands. These early pioneers needed very large antennas and powerful transmitters, as the losses over such a long path are immense—on the order of 250 to 300 decibels. Over time, improvements in low-noise receivers, solid-state amplifiers, and digital signal processing made EME more accessible, although it remains one of the more technically challenging aspects of amateur radio. EME relies on the Moon acting as a passive reflector, but because the Moon is not a perfect mirror but a rough and irregular surface, only a small portion of the transmitted energy is reflected coherently in a usable direction. Key technical considerations in EME operations include the enormous free-space path loss over the nearly 800,000 km round trip, Doppler shift caused by the Moon's motion relative to Earth, a time delay of about 2.5 seconds, and polarization effects. Although modern technology has lowered the barrier to entry, EME is still not an activity for the casual operator with only a handheld radio. Traditionally, large directional antennas were require, such as arrays of Yagis on 2 meters or parabolic dishes on 70 cm. Power levels of several hundred watts to a kilowatt have also been typical, as well as tracking systems to account for changes in azimuth and elevation as the Moon moves across the sky. Despite the difficulties, the rewards of EME are substantial. Making a successful moonbounce contact is a thrilling achievement, representing the culmination of technical skill, careful planning, and patience. For many amateurs, it is the pinnacle of their operating careers. EME also contributes to international cooperation and scientific advancement. Operators often work together across continents, scheduling contacts during favorable lunar conditions. The techniques and technologies developed for amateur EME frequently overlap with those used in professional radio astronomy and space communications, providing valuable experimental data.Moreover, EME has a unique appeal in that it connects radio amateurs not just with each other, but also with the cosmos itself. Communicating via the Moon provides a tangible sense of humanity's place in the larger universe, bridging both technical achievement and a sense of wonder. In recent years, EME activity has expanded signifi-

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Important Notice:

DFARG/PARC Swap Meet October 11, Scouts in the shack on October 18.

Volunteer today!

Inside this issue:

Upcoming Regional Hamfests and Conventions

09/19/2025 - 09/20/2025
Gadsden Hamfest 2025
Location: Gadsden, AL
Website: http://k4jmc.com

09/27/2025 - Lexington Hamfest
Location: Lexington, NC
Website: https://www.w4par.org/

10/03/2025 - 10/04/2025
Hamfest Chattanooga 2025
Location: Ringgold , GA
Sponsor: Chattanooga ARC & North Georgia GMRS Network

10/04/2025 - Rock Hill Hamfest, ARRL South Carolina Section Convention
Location: Rock Hill, SC
Website: http://www.ycars.org

10/10/2025 - 10/11/2025
Melbourne Hamfest, ARRL Florida State Convention
Location: Melbourne, FL
Website: https://pcars.org/wp/melbourne-hamfest-2025/

10/10/2025 - 10/11/2025
NOARC Annual Hamfest
Location: Crestview, FL
Website: https://w4aaz.org/noarc/hamfest-2025/

10/11/2025 - Dutch Fork Swap Meet Hamfest
Location: Little Mountain, SC
Website: http://w4dfg.org

10/12/2025 - Maysville Hamfest
Location: Maysville, NC
Website: http://www.maysvillehamfest.org

August Meeting Minutes

There was no July meeting, we held instead. We had a great time and fellowship with great food. Thanks to all that attended.
Officers present for the August meeting, President Rick, VP Charlie, Secretary Smitty. The tech talk for the evening was a discussion given by Charlie of his newly designed SOTA and POTA Digital Station. His primary radio is a Yeasu 818 and a Raspberry Pi 5. He discussed how he solved his battery issues with his radio and monitor. There was plenty of discussion as other members are getting into POTA and possibly SOTA. A round robin introduction was made of the members. Business was discussed. The Treasurer's Report was given by Rick. The club's account was $4721.71 with expenders for gas of $12.84. Giving the account total of $4708.57.
VE Testing update. The next testing date will be August 23, 2025. It was brought up to the membership that we have a busy season ahead, and your help is needed! Below are this month's agenda highlights along with specific volunteer opportunities:
Volunteers Needed for the Swap Meet – October 11, 2025

1. Setup Crew – Arrive early to help with tables, chairs, and signage.
2. Parking & Traffic Control – Direct participants and vendors to their spots.
3. Hospitality Table – Welcome attendees, hand out info, answer questions.
4. Sales/Finance – Assist with ticket sales, raffle, or club table.
5. Cleanup Crew – Stay after to tear down and clean up the site.

The following weekend we are sponsoring the Scouts Jamboree on the Air – October 18, 2025.
Volunteers are needed for the following areas:

Station Operators – Licensed hams to get Scouts on the air.
Mentors – Guide Scouts with procedures, phonetics, and logging contacts.
Setup/Tear-down Crew – Help with antennas, radios, and power.
Hospitality/Check-in – Greet Scout leaders and manage sign-in.
Technical Support – Troubleshoot equipment during the event.

Christmas Dinner - December 13, 2025 (Volunteers are needed) (We recommend that we use the same restaurant for catering that we did last Christmas)

Planning Committee Lead – Coordinate planning and volunteer
Venue Coordinator – Secure a location. (We have been offered an arear to have the gathering. More information to follow)**
Food & Catering – Organize menu, catering, or potluck.
Decorations & Setup – Plan and decorate the venue.
Program/Entertainment – Arrange awards, presentations, or activities.
Cleanup Crew – Pack up and restore the venue.

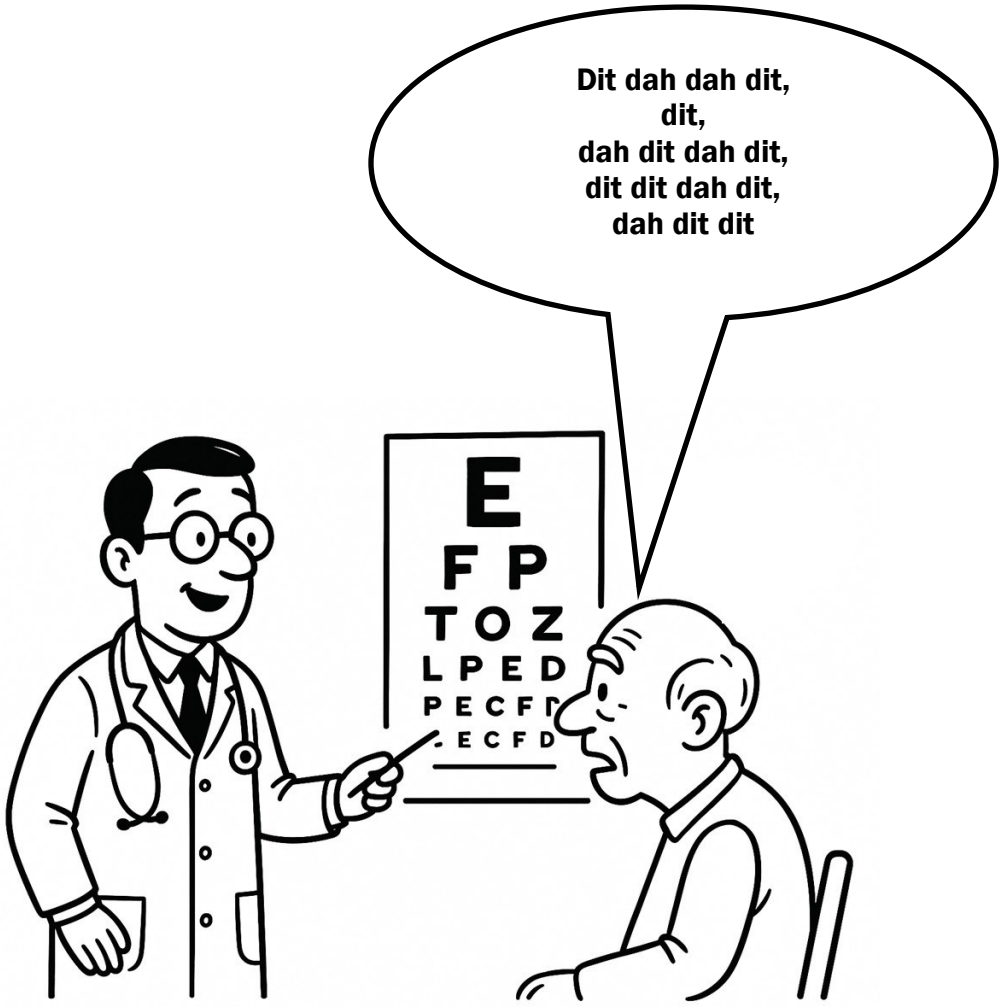
Motion made and passed. Periodically, meetings may be designated as social gatherings with a social hour in place of a tech talk. BYOB and BYOS (Bring your own snacks)
Please start thinking of what you can do for the club. Nominations for 2026 officers will be accepted at the October meeting. Elections will take place at the November meeting.

Upcoming DXpeditions:

Formatting the ADXO for inclusion in Publisher has run into a few snags that I cannot easily overcome. Please go to the following link for the current schedule:

https://www.ng3k.com/Misc/adxo.html

Ham Humor



Upcoming Contests

September		October	
20-21	Scandinavian CW	3	German Telegraphy
	NJ QSO Party	4-5	Collegiate QSO Party
	TX QSO Party		Oceania DX Phone
	IA QSO Party		Worked All Provinces-China
	NH QSO Party		Russian WW Digital
	WA Salmon Run		CA QSO Party
	WI POTA		
27-28	CQ WW RTTY	11-12	NV QSO Party
	YU DX		Oceania DX CW
	ME QSO Party		Scandinavian SSB
			AZ QSO Party
			PA QSO Party
			SD QSO Party

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cantly thanks to digital technology. With the proliferation of digital weak-signal modes, stations with modest equipment—such as a single Yagi antenna and 100 watts of power—can now achieve successful contacts under the right conditions. This has opened up EME to a much wider audience, no longer limited to those with massive antenna farms. There has also been experimentation on higher frequency bands, such as 1296 MHz (23 cm) and above. At these frequencies, smaller dish antennas can provide sufficient gain, making it practical for dedicated hobbyists. Another trend is the integration of online tools. Real-time scheduling platforms, signal spotting networks, and lunar prediction software have made coordination and tracking more efficient than ever before. Earth-Moon-Earth communication remains one of the most technically demanding and rewarding pursuits in amateur radio. From its origins in the 1940s military experiments to today's digitally enhanced operations, EME represents the spirit of innovation, experimentation, and achievement that defines amateur radio.

License Examinations

The next exam session is October 4, 0900 at the shack,