



The Old Barney Beacon

SO I HAVE MY LICENSE, NOW WHAT?

DMR, D-STAR, & C4FM—PART 4 OF A SERIES

BY R. KENNARD, N2RPQ

So you may have heard the terms DMR, D-Star or C4FM (also called System Fusion) but what do they refer to? The answer is digital modulation. All 3 protocols use different methods to accomplish this but the end result is that your audio is converted to digital (1s and 0s) and transmitted.

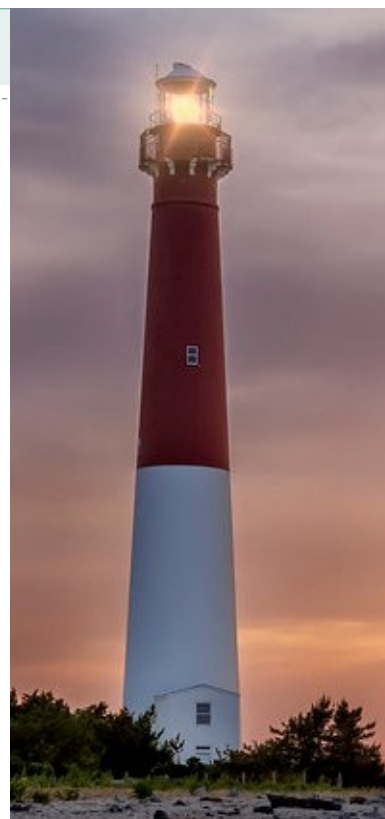
There are pros and cons to using this type of communication. One pro is that digital modulation can usually be heard farther away. It is not that it actually travels farther but because it is digital as long as the receiving radio can interpret the 1s and 0s it can decode them into “clean” audio. Analog signals at distance will degrade and more interference can make them harder to understand.

Of course on the con side is that you need a radio that will receive and decode the protocol that is being used in order to decode it.

It should also be noted that this is not the same as encryption. Encryption in public safety to block transmissions from being heard using controlled keys that are illegal to break. With any of these 3 protocols anyone who has a radio that uses the same protocol as you can listen in, so remember your conversation is still not private.

Currently there are no radios on the market that can do all three. There are some companies that have experimented with combining some protocols and with the use of a “hot spot” may allow multiple protocols but the market is still involving.

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JULY 18th 12-4PM

**A. Paul King Park (by the lake)
2 W. Bay Avenue, Manahawkin
Under the Pavilion**

Old Barney is sponsoring a family picnic.

Come down and enjoy some fun time with other club members. If you want to bring a small demo for others feel free.

Swimming is allowed when lifeguards are on duty.

Our next meeting will be on Wednesday, July 7, 2021 IN PERSON! We are allowed back into the Community Center and will be going there starting with this meeting. The meeting time for this meeting is 7pm.

VE CORNER

There was a VE Session held on June 5th with 1 candidate who earned an upgrade to his Extra Class license.

If you are looking to upgrade your license or you know someone who needs a session please contact Tom at n2xw@arrl.net.

FAMILY COMES FIRST DURING HURRICANE PREPARATION FOR HOME AND STATION

AS POSTED ON ARRL.ORG 6/16/2021

The Atlantic hurricane season began on June 1 and continues through November 30, and two named storms have already shown up, although neither threatened the US. There's still time to consider making sure you, your family, and your ham station are prepared. Remember, your family's safety comes first.

Your first stop should be a visit to the National Weather Service (NWS) page for [personal and family hurricane season preparedness](#). Next, prepare your amateur radio station and equipment for possible service and/or deployment. For example, be sure to have multiple sources of back-up power, such as batteries and generators, and test them both to make sure they'll do the job, if needed. Never test or run a generator indoors or in an enclosed area where anyone may be nearby.

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WHAT ARE THE DIFFERENCES?

Let's talk briefly about each type. I'm not going into any detail into how the modulation is done. That is way past the scope of this article.

As you will see there are similarities between all three. They all use different terms but if you look closely you can see that the idea behind each is very much alike.

D-Star

D-Star is the oldest of the three. It was developed in Japan and is actually open source. It was written for amateur radio use. Icom makes several radios that supports D-Star, however, they are not the soul manufacturer.

D-Star offers good flexibility through their repeaters to connect to source you are looking for. D-Star uses a concept of reflectors and other repeaters tied together to extend coverage of certain groups that you can listen to. Reflectors can contain a multitude of repeaters depending on how it is set up.

DMR

DMR was originally developed for the commercial radio market by Motorola and was branded MOTOTURBO for their implementation of the protocol. DMR has migrated to the amateur radio market and is widely used.

DMR uses talk groups to divide up what we would think of as channels. Some talk groups are connected world wide through internet connected links.

C4FM

C4FM is more commonly called either "System Fusion" or just "Fusion." C4FM is a proprietary protocol that was written by Yaesu solely for use in their radios. Their repeaters do offer the capability of converting analog to digital and vice versa.

PRESIDENT'S MESSAGE

The Summer is here, the restrictions have eased and the events have begun!

How exciting it is that we can start doing our events again IN PERSON!

The July meeting is back at the Community Center.

I'm looking forward to the events that are coming up. I hope that you are able to attend at least some of them.

This year we are back at both lighthouses, the decoy-duck show, and will be hosting a picnic.

Now that we can be out in public again and actually see each others faces let's get together and make these events great.

If you have never been to these events or it's been a while, come on out! Be with other club members and get on the air! It's time we start growing these events and attracting members!

Until next month...

N2RPQ

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2021 ARRL CONTESTS

JiARU HF World Championship
Jul 10-11
222MHz & Up Distance Contest
Aug 7-8
10 GHz & Up—Round 1
Aug 14-15
Rookie Roundup (RTTY)
Aug 15
Sept VHF Contest Sep 11-1
10 GHz & Up—Round 2
Sep 18-19
EME 2.3GHz & Up—Wknd 1
TBD
School Club Roundup
Oct 18-22
EME 50 to 1296 MHz—Wknd 2
TBD
Nov Sweepstakes—CW
Nov 6-8
Nov Sweepstakes—Phone
Nov 20-21
EME 50 to 1296 MHz—Wknd 3
TBD
160 Meter
Dec 3-5
10 Meter Dec 11-12
Rookie Roundup—CW
Dec 19

NOW WHAT? - CONTINUED FROM PAGE 3

C4FM also has a concept of groups called rooms through what they call WIRES-X. In order to use these, however, the repeater needs to have a WIRES-X module. You can also add a special module on your radio to connect to the WIRES-X system.

SO WHICH ONE SHOULD I GET?

There is no “correct” answer to this. The best answer is to see what the people you are talking to use. Also depending on the radio you purchase for your analog communications it may include one of the modes already. A lot of the newer Yaesu radios have C4FM (Fusion) built in. Some other brands combine DMR or D-Star in their radios.

If you decide you want to use digital modulation it may also be good to find people who use the different modes and ask them what they like or dislike about it and how available it is in your area.

Finally check out the cost(s). This may end up being your deciding factor.

AS A NEW OPERATOR DO I NEED TO HAVE ONE OR ALL OF THESE?

No! These protocols are just another way of communicating in the vast world of amateur radio. Just like the choice to use 2m, 70cm or HF, the choice to use digital modulation is up to you and what you are looking to get out of your amateur experience.

My best advice, and I’m repeating myself (no pun intended) is to work with others who use the different modes to see if what that system offers interests you.

You don’t have to tie yourself to only one system. Of course using multiple systems means you will most likely have more radios but you can progress as you desire.

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SOME FINAL COMMENTS ABOUT THIS ARTICLE

My intent in this article was to give you an overview of what is meant by D-Star, DMR and C4FM. I use DMR and I use C4FM but I am not an expert in any of them. If you want to learn more there is plenty of info on the internet. One source I used in comparing these systems was an article by Mike Myers (K3DO) which goes into a lot more detail. This article can be found here: <http://www.mikemyers.me/blog/2016/2/19/d-star-dmr-fusion-which-is-right-for-you>



In the Coming Issues:

- **August — Part 5— APRS**
 - **September — Part 6— Digital Computer Modes (FT8, etc.)**
 - **October—Final Part— Wrap-up (Still More to Come!)**
-

FAMILY FIRST—CONTINUED FROM PAGE 2

“I poured fresh gasoline into my Honda EG2800i generator and ran it for 30 minutes to check its status, which was good,” said Rick Palm, K1CE, author of *QST*’s “Public Service” column. “I mounted my generator on a small utility trailer for deployment, if necessary. The generator is rated for 120 V at 20.8 A.”

Make sure you can take down and reinstall antennas quickly and efficiently when there’s a threat of severe storms. VHF antennas mounted on masts and typical HF dipoles can be taken down and put up in minutes.

Also, test all radios and peripherals, especially those you may not use on a routine basis but might want during a severe weather emergency. This might include handheld transceivers (especially for VHF and UHF) and any HF gear that can easily run from emergency power sources

Know the name, call sign, and email address of both your ARRL Section Manager (SM) and Section Emergency Coordinator (SEC). Keep a list of emergency and public safety nets handy.

Some hams establish a “hardened” facility that’s essentially stormproof, with ham gear installed inside. Rick uses a heavy steel shipping container, suitably anchored. (Read “Shipping Containers for Sheltering Stations and Operators at Deployment Sites” in the September 2020 “Public Service” column for more information on using shipping containers for emergency shelter, including container safety.) The typical garden shed would likely not suffice.

In addition, look for local/regional nets before a serious storm strikes, to learn or practice net procedure and get acquainted with all the players you might work with in a disaster: net and emergency managers, Red Cross, Community Emergency Response Teams (CERT), Amateur Radio Emergency Service® (ARES), and Radio Amateur Civil Emergency Services (RACES) communicators. Obtain and learn how to use Winlink HF mail.

“The advantages are clear, and that’s why the Red Cross and others embrace Winlink,” Palm says in the July 2021 “Public Service” column. He went on to say, “There is a learning curve to gaining Winlink proficiency, however. It’s not a system for spontaneous volunteers.” On-air training is available.

The National Weather Service offers [information](#) on personal and family hurricane season preparedness.

“We generate fears while we sit. We overcome them by action.”
– **Dr. Henry Link**

JOIN US ON THE AIR

Join us for our club net. The net is held every Thursday night at 7:30pm (except holidays and special occasions) on the WU2E repeater.

Every week we host a random topic of discussion.

Find us at: 146.835 (-600) PL 127.3

We look forward to sharing time with you!

For any comments or questions regarding the weekly net please contact Jim Neufell, K2GMT at jvneufell@comcast.net.

OLD BARNEY GEAR

You can find Old Barney Gear at all these places:

Southern Ocean Marine Sportswear (Hats & Jackets Embroidered)

79 South Main Street, Barnegat, NJ 08005

(609) 698-8868

Email: sales@soms4u.com Website: www.soms4u.com

Café Press (All types of logoed items available)

New Logo Items: <https://www.cafepress.com/oldbarneyarcnewlogo>

Old Logo Items: <https://www.cafepress.com/obarc>

Gold Medal Ideas (Personalized Old Barney Items)

1160 Thompson Blvd, Buffalo Grove, IL 60089

https://stores.goldmedalideas.com/ygs/Old_Barney-Products/10000170



HAVE YOU JOINED THE MEMBER'S AREA?

The member's area of the OBARC website is being developed to provide useful tools to our members. Currently there is:

- Club Documents & Meeting Minutes
- Swap and Shop Postings (You decide if yours is just for members or the public)
- A "Ask for help/Questions" area to post questions to other members for assistance.
- A members directory for those who want to be listed.

Take a look. Suggestions are welcome! You can request access to the area by going to: www.obarc.org/members

SWAP & SHOP

The new Swap & Shop section is now available in the Members area of the website. In the very near future you will also be able to control your listings and keep them available for the members or have them listed on the public website.

We will also be happy to list any items you would like here in the newsletter. Just send your listings to n2rpg@arrl.net and I will make sure that they are added here.

OUR MEMBERS

Welcome to Our New Members:

Happy Birthday To:

Rick Kennard—7/1

Ken Kebless—7/9

Carl Lee—7/12

Don Wilkinson—7/17

John Bodine—7/21

NEWS FROM AROUND OUR SECTION...



OCEAN COUNTY ARES® - JULY 2021

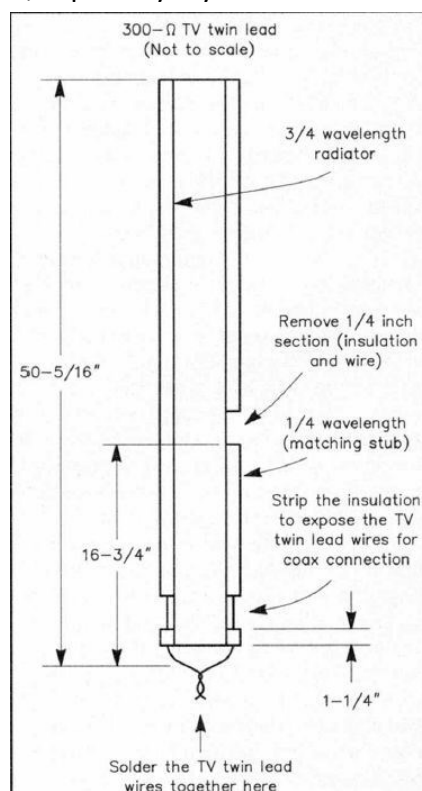
By Robert J Murdock Sr, WX2NJ—Coordinator

The next VE session of Ocean County ARES will be on July 20th at 7:00 PM at the Ocean County EOC. Appointments are required. Contact Lead VE, John - N2LD, for an appointment.

Starting in August, Ocean County ARES will begin having meetings back in the Ocean County EOC (small room) as long as conditions do not change. It will be good to see everyone in person again!

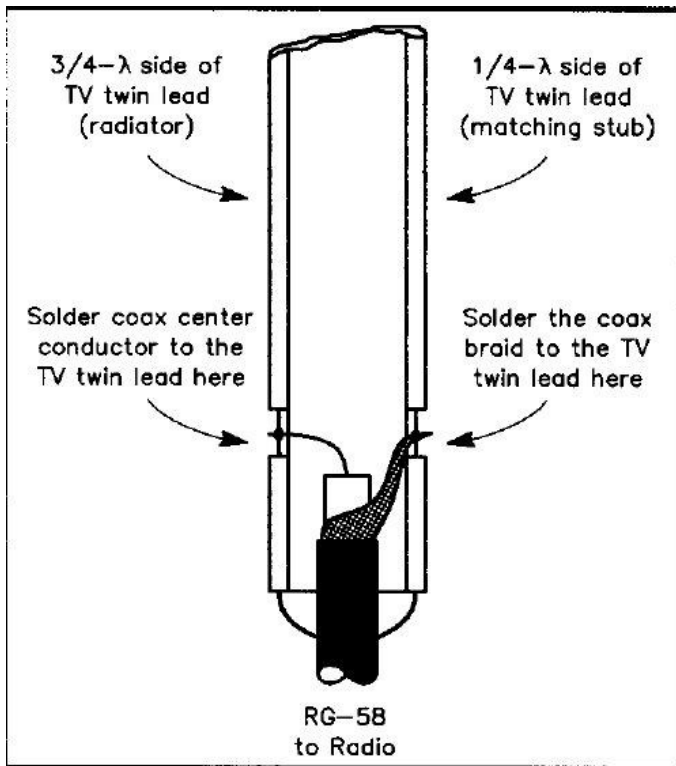
I recently posted a picture of an emergency antenna on groups.io using 300 ohm twin lead. There is even an easier project posted on the ARRL website from 2004. The pdf for the project is available at: <http://www.wa2res.com/jpole-dual-band.pdf>

It can be used on 2 meters and 70 cm with fairly low SWR. Twenty-five foot sections of inexpensive 300 ohm twin lead can be obtained on eBay. Just get the cheap stuff. No foam or thick versions. The antenna is a great alternative to an HT antenna, especially if you are on the fringe of a repeater.



DUAL BAND J-POLE LAYOUT

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HOW TO PREPARE COAX

Near the top of the antenna, punch a small hole and insert a small ty-wrap or piece of fishing line. The antenna can be hung from a tree branch or a tack in the overhead. Keep the feed line short to avoid loss. Six to eight feet should give you enough line to reach your HT. Cover the section where you attach the coax with a length of heat shrink to keep your solder joints from getting damaged. This is an excellent antenna to roll up and keep in your ARES go kit.

Want to become proficient with Winlink? Participate in Winlink Wednesday.



RAM RADIO RECORD

By Olivia Lee, KD2UYX

Southern Regional Radio Club has been very active over the past few meetings! We have made contacts from many different places including Canada, Kansas, North Carolina, and New Jersey. The Club has been able to grow because of the generous donations made by community members and members of the Old Barney Radio Club. We have received donations from Kevin Mimm, and a laptop was donated by Richard Kennard, so we can record logs online. New officers were elected in April, Olivia Lee (President), Isabella Lee (Vice President), Cassidy Demasi (Treasurer) and Shannon Flaherty (Secretary). Although school is coming to an end, KC2RZI will still be active in the summer. On June 26th we will participate in field day for about 3 hours hoping to help OBARC scores. We are also promoting the lighthouse events in August. We are excited for everyone to get involved and for more members to join Southern Regional Amateur Radio Club.



Southern NJ Section News July 2021

Tom Preiser N2XW SNJ Section Manager

n2xw@arrrl.org

Revitalization of Field Services with New Organization

The Field Services that ARRL HQ provides to its member-volunteers is now in the spotlight with a reorganization and a fresh start to Section Manager and Affiliated Club engagement!

The backbone of ARRL, and the Amateur Radio Service, is the expansive field organization of volunteers. This is especially true of our Board members, our "first among peers," who provide leadership to this vast network of engaged volunteers. During a marathon series of Zoom calls on Wednesday, June 9 with ARRL Section Managers and most ARRL Board members in attendance, the restructuring of the Field Services organization at HQ was announced.

Bob Naumann, W5OV, who has a lifetime of experience as a radio amateur from contesting, to public service, to working with a number of well-known industry retailers, is now serving as the Director of Operations following the retirement of Norm Fusaro, W3IZ.

Mike Walters, W8ZY, who has been involved with field volunteers for many years and is currently the Section Emergency Coordinator (SEC) for Connecticut, is now serving as the Field Services Manager.

Bart Jahnke, W9JJ, who was managing Field Services, remains responsible for Radiosport and is also taking on the role of Regulatory & Advocacy following the retirement of Dan Henderson, N1ND.

The meetings went on to discuss the focus the ARRL Board has placed on Field Services, working to create a new standing committee to oversee its revitalization and growth. Also discussed were the initiatives being undertaken with Section Managers to foster collaboration, share content, undertake projects, and set expectations.

The first project will be a focused census that a dozen Section Managers across the country will be driving with local clubs to understand the disparity between the ever-growing number of licensed hams versus the unchanging number of active hams.

We are very excited to turn the page and begin this new chapter for Field Services, and to continue forward with our digital transformation of ARRL.

WHO IS OLD BARNEY?

The Old Barney Amateur Radio Club (OBARC) was established in 1975 by a diverse group of individuals with a common goal of promoting Amateur Radio.

Today the group continues towards making the amateur radio hobby rewarding through participation in several events throughout the year, training sessions, VE testing and monthly meetings.

Our meetings are held at the [Ocean Acres Community Center](#), 489 Nautilus Blvd, Manahawkin, NJ 08050*, beginning at 7:30pm on the first Wednesday of each month (except holidays). We welcome anyone (licensed or not) to come and meet with us to learn more about amateur radio.

*** DUE TO COVID-19 MEETINGS ARE CURRENTLY BEING HELD VIA ZOOM.**

SHARE YOUR KNOWLEDGE

The newsletter is open to anyone who would like to submit articles. Please join me in contributing to content and share the knowledge you have about our hobby with all our readers.

Presentations are also welcomed. We try to host a presentation at each monthly meeting covering different topics. We would even welcome "special" sessions via Zoom for presentations that are too long to host at a meeting.

Please contact me at n2rpg@arrl.net with any articles or to arrange a presentation.

THE OLD BARNEY RADIO CLUB IS ARRL AFFILIATED



Old Barney Amateur Radio Club

PO Box 117
Manahawkin, NJ 08050

E-mail: n2ob@arrl.net

Visit the ARRL at www.arrl.org

