SHARK NEWS
THE OFFICIAL NEWSLETTER OF CMARC
MARCH 2022

Report from the President

The Club has a new email address cmcarc2022@gmail.com and RACES has a new email address too, cmcRACES2022@gmail.com. With in a week or two it will go to all officers of the club, and RACES will go to the RACES officers.

The Club was talking at our last meeting about trying to set up a Hamfest on ARRL Field Day weekend. I set the paperwork in motion with the ARRL, filled out the form for the Hamfest. We have a Hamfest that will be on the ARRL website in April and in QST in June

The O E M Training Room is open to the Club with no masks required but are recommend.

Start thinking about how you can help the club to have a great Field Day & Hamfest weekend.

We have innovative ideas on how to work with 24-1 on HF, as we did last field Day, this will be a joint effort with RACES.

CMCARC is looking to get back to in person meetings. Please come out and support the club.

As I do each month, I have collaborated with each Committee chairperson and many members of the club about things the Club is working on.

When calling on the radio ***PLEASE*** give the repeater you are calling in on, so a person can find you quickly.

There is an up to date on the “links Page”. A new link was added, “Go-Kits for Emergency Communication,” written by Dan O’Connor KE7HLR is from the west part of the U. S., but it still has a lot of wonderful things in it.

Please use the website, it will help all of us.

Respectfully submitted,

Robert H Myers Jr. KD2HIP

President CMCARC

Southern NJ Section News March 2022

Tom Preiser N2XW SNJ Section Manager
n2xw@arrl.org

I am hoping that spring is right a round the corner. It will be time to get out check those antennas and see how they have faired out from the winter snow and cold weather. Many clubs have returned to in person meting and events. This is a welcome change. There many groups planning on Foxhunts, Hamfests and getting back together for social events. Field Day also looks promising this year. Don't forget to order your Field Day shirts and gear now. This year's logo looks great.

Remember to subscribe to the ARRL Club newsletter online to see what other clubs are doing around the world.

I have also noticed quite a lot of Parks on the Air Activations. It's really a great idea to get out to a park and activate it on the air. I you hear someone calling on the radio tray to make a contact with them. For more information go to https://parksontheair.com/

QSO Today Virtual Ham Expo, March 12 – 13

ARRL Life Member Courtney Duncan, N5BF, will be the keynote speaker for the **QSO Today Virtual Ham Expo** on Saturday, March 12, in the QSO Today Virtual Ham Expo auditorium. The semi-annual virtual ham radio gathering will be live on March 12 – 13

This edition of the QSO Today Virtual Ham Expo will showcase a wide range of topics with appeal to newcomers and veterans alike. It's a chance to update your amateur radio knowledge and get exposed to cutting edge ham radio technology as well as practical operating and building techniques. Like a live ham radio convention or hamfest, the Expo has presentations, exhibits, and state-of-the-art "lounges" for face-to-face interaction among participants. Because it's a virtual event, you don't have to pick and choose which presentations you can attend. You can watch any one of them within 30 days of the Expo as well as explore exhibitor offerings from the comfort of your computer or other device.

Grants

Lots of interest has been raised on the new grant programs that are available to organizations today. There is also a bit of confusion about just what some of them are and what the differences are. Let's look at the details of the three major programs.

Grants are a great way to fund small and large projects that your club might be interested in. Spend a few minutes to look over the websites and talk with your club. This is a valuable resource that clubs can use to build amateur radio's future in an ever-changing technology world.

ARRL Foundation Grants

These grants are awarded by the ARRL Foundation to organizations promoting amateur radio. The maximum grant is $3000, and the specific uses of the funds are restricted to specific projects. The details of just what you can use the money for and how to apply are on the ARRL website at Amateur Radio Grants (arrl.org). There are specific times during the year to apply, and all the information is on the website.

ARRL Club Grant Program

This program is new and still in development having just been announced in January around the time of the ARRL Board of Directors meeting. This program will allow clubs to apply for up to $25,000 for specific projects. The details of how the funding can be used and how to apply have not been announced yet. Stay tuned for more information.

ARDC Grants

These grants are awarded by the Amateur Radio Digital Communications Grant Program and are not managed by ARRL. There is no maximum for the grants and full details can be found at the ARDC website at Apply for a Grant | Amateur Radio Digital Communications (ampr.org). There are specific dates to apply and requirements for the groups that wish to apply.

There will be more information these programs in the near future. Start thinking about what your club can do and apply for a grant.

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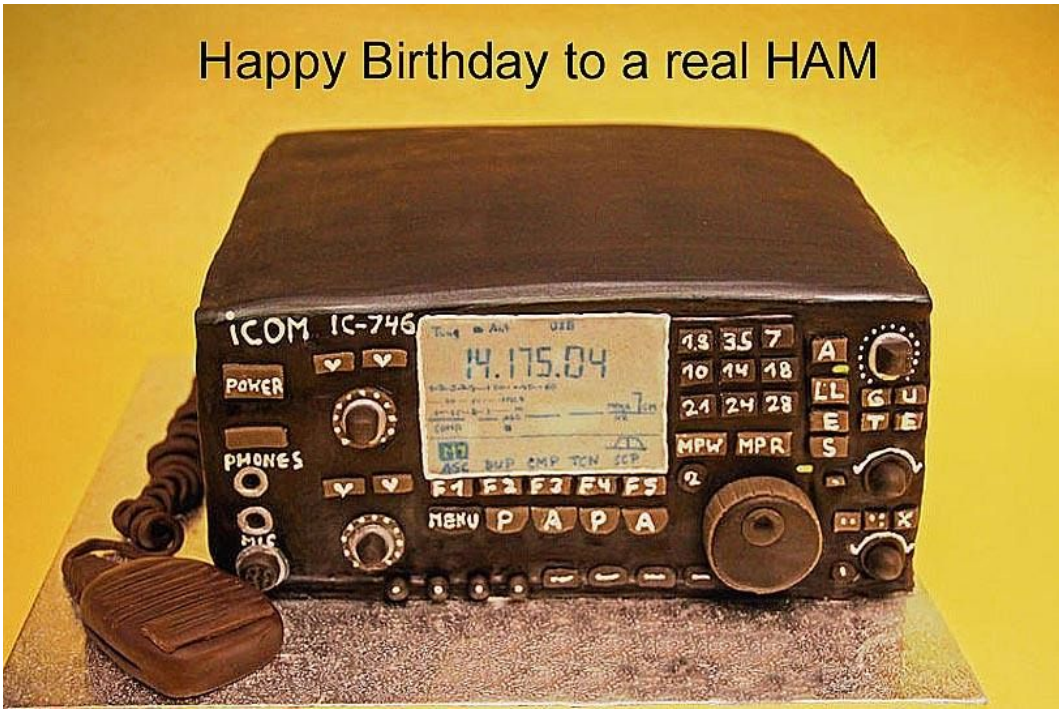


February

Jim Chadwick KB2JMJ

Jeff Doran NJ2US

March

Oliver Twist KB2YVY

Peggy Cole W2PEG

John Deuter K2SEV

Bill Grier KB2YJD

Justin Mattes KC2GIK

Craig Stewart W4PHJ

This would be something cool for the club to do

What is a Fox Hunt?

Every weekend, in cities and towns all across the country, ham radio operators gather on hilltops for a very special kind of contest–the Fox Hunt. A small, low power transmitter is hidden and the rest of the crew tries to find it. Sound simple? It can be very challenging and a whole lot of fun. The direction finding skills learned in this activity can be very valuable in locating a repeater jammer, or a lost hiker.

“fox hunting” has spread through many ham radio clubs around the world as a very exciting and fun aspect of the hobby. Fox hunting can take many forms of transmitter hunting, from a person hiding within a few blocks of the starting point with his handheld and periodically making a transmission while others try to find him on foot using directional antennas; to a competition with multiple unmanned automatic transmitters scattered over a course that can be several hundred kilometers long – the entrants being required to find each transmitter in proper order with a minimum number of kilometers driven. Another variation includes jogging or running from one low power fox transmitter to another while carrying RDF equipment.

What makes fox hunting so popular?

- The social aspect of getting together with others with similar interests.
- Anyone can take part – you don’t need a ham license since only a receiver is required.
- The satisfaction of building your own equipment such as an antenna for use in RDFing.
- The fun and competitiveness of the hunt, which also can involve both physical and mental exercise (walking while searching, and the calculations and map plotting required to determine where the fox may be located).
- The outdoor aspect of the sport (sunshine and fresh air).

The “fox” has several basic requirements:

- Be able to move to a location unobserved by those who plan on taking part in the hunt.
- Be able to hide well enough at the location he has chosen so he will not be accidentally spotted. The hunters should have to almost stumble over him in order to find him.
- Be equipped with enough handheld battery capacity, water, lunch etc. for the expected duration of the hunt – it could be one or two hours or more in length, depending on the distance the fox is from the starting point and how well he is able to confuse the hunters as to his probable location.

See ARRL website: http://www.arrl.org/direction-finding

Amateur Radio Fox Hunt (ARDF) - Ham Radio Q&A

https://youtu.be/ptP65csLiaw

- - - Tech Corner - - -

FM Signal Reporting

Providing or receiving a “Signal Report" is a big part of amateur radio. Amateur Radio Operators want and strive to receive good signal reports. And conversely want to provide good signal reports or at least good and helpful information to other stations, when asked.

In all cases, the most important aspect of any two-way communications is the quality of the signal being received. Is it easy listening and are we able to copy 100% clearly?

Generally the quality of two-way communications is driven by many factors. Factors such as but not limited to, signal strength, audio quality of the modulation, existing band noise, band conditions and/or possible interference.

There are several differences on how signal reports are determined and stated depending on what mode of Amateur Radio is in use. For this “Tech Corner” article we will concentrate and zero in on FM repeater operation and FM simplex operation.

The most used and known signal reporting standard is the RST (Readability, Signal Strength and Tone) protocol. Readability - on a scale of 5 to 1 (5 being best), Signal Strength - on a scale of 7 to 1 (7 being best), Tone - on a scale of 9 to 1 (9 being best). The RST protocol has been largely replaced with just RS, Readability and Signal Strength. R or Readability is still a scale of 5 to 1 and the S or Signal Strength has been extended from 7 to 1 to now 9 to 1. So on HF (the low bands) giving a station a “59" report is a perfect received signal. Ok, now lets get to VHF UHF FM operation.

First we cover FM repeater operation. When you are communicating with another station through an FM repeater, the signal strength you receive is that of the repeater. Your S-meter is only showing the received signal strength of the repeater. How strong the other

station is getting into the repeater has NO effect on the power output of the repeater that you are receiving.

So when communicating through an FM repeater we largely just do not know what is the signal strength of the other station. We only know and experience their “Readability". On FM that has been replaced with “Q” for Quality and it is on a scale of 5 to 1 with 5 as best.

Ok, the best way to cover this is by way of examples. Within the following we go through five examples of how to use the FM signal reporting **“Q” quality** protocol for determining and providing a signal report.

Example-1
You can receive your local repeater at or near full scale on your S-meter. Another local station is calling on the repeater. You copy this station perfectly clear with no noise on their received signal.

If you are asked for a signal report, you may respond with, your signal is Q5, or DFQ or Armchair Copy or you are perfectly clear. Ok so, Q5 or DFQ (dead full quieting) means that the received signal is perfectly clear with no noise and no issues at all.

Example-2
You can receive your local repeater at or near full scale on your S-meter. Another station is calling on the repeater. You can copy this station with no problem but there is some noise on their signal but is not an issue to copy this station 100%.

If you are asked for a signal report, you may respond with, your signal is Q4 or your signal is (say) 75 to 90% quieting and no problem copying you.

Example-3
You can receive your local repeater at or near full scale on your S-meter. Another station is calling on the repeater. You can copy this station but you have to focus and listen carefully. You hear considerable

noise on their signal but with focus you copy the majority of what the other station is saying /transmitting.

So again if you are asked for a signal report, you may respond with, your signal is Q3 or your signal is (say) 50 to 70% quieting and I can copy most of what you are saying.

Example-4
You can receive your local repeater at or near full scale on your S-meter. Another station is calling on the repeater. You can copy this station but you are not able to understand most of the message. You hear more noise then their actual spoken signal.

Again you are asked for a signal report, you may respond with, your signal is Q2 -or- your signal's noise level is large and I can not copy most of what you are saying and you are not able to hold the repeater.

Example-5
You can receive your local repeater at or near full scale on your S-meter. Another station is sometimes able to key-up the repeater but mostly not hold the repeater. You can barely determine when they are transmitting.

That would be a signal report of Q1 and state that your signal cannot make the repeater and that I can not copy your signal.

FM Simplex Operation?

Ok, now the Q5 through Q1 system is still good and often used for simplex operation. You now can also provide to the other station your S-meter measurement. Your S-meter now (in simplex) does reflect the signal strength of the other station being received.

Summary

The above examples and descriptions is a highly abbreviated run down on some ways of providing a signal report to another Amateur Radio station when operating by way of typical VHF / UHF FM modes.

Some of the of the "Q" system articles use a scale of 5 to 0 and others 5 to 1. Below is a quick summery of the 5 to 1 scale.

Q5 = Perfectly clear signal, armchair copy, DFQ.
Q4 = Good signal with some noise but still comfortable.
Q3 = Can copy but noise is making it challenging.
Q2 = Some words getting through, noise is excessive.
Q1 = Can Not copy, hard to determine if signal is present.

The above is my interpretation of reading several "Q" signal descriptions. It is somewhat subjective.

The following URL is from Wikipedia, has nice information.
https://en.wikipedia.org/wiki/Signal_strength_and_readability_report

Note:
The term "% of quieting " is basically a way of stating a signal to noise ratio. So "100% quieting" means the received signal is all signal and no noise on it. Another example, say "80% quieting" means that the "signal to noise ratio" is 4 to 1 -or- 4 parts good signal and 1 part noise. It's just a perceived subjective way of expressing signal quality.

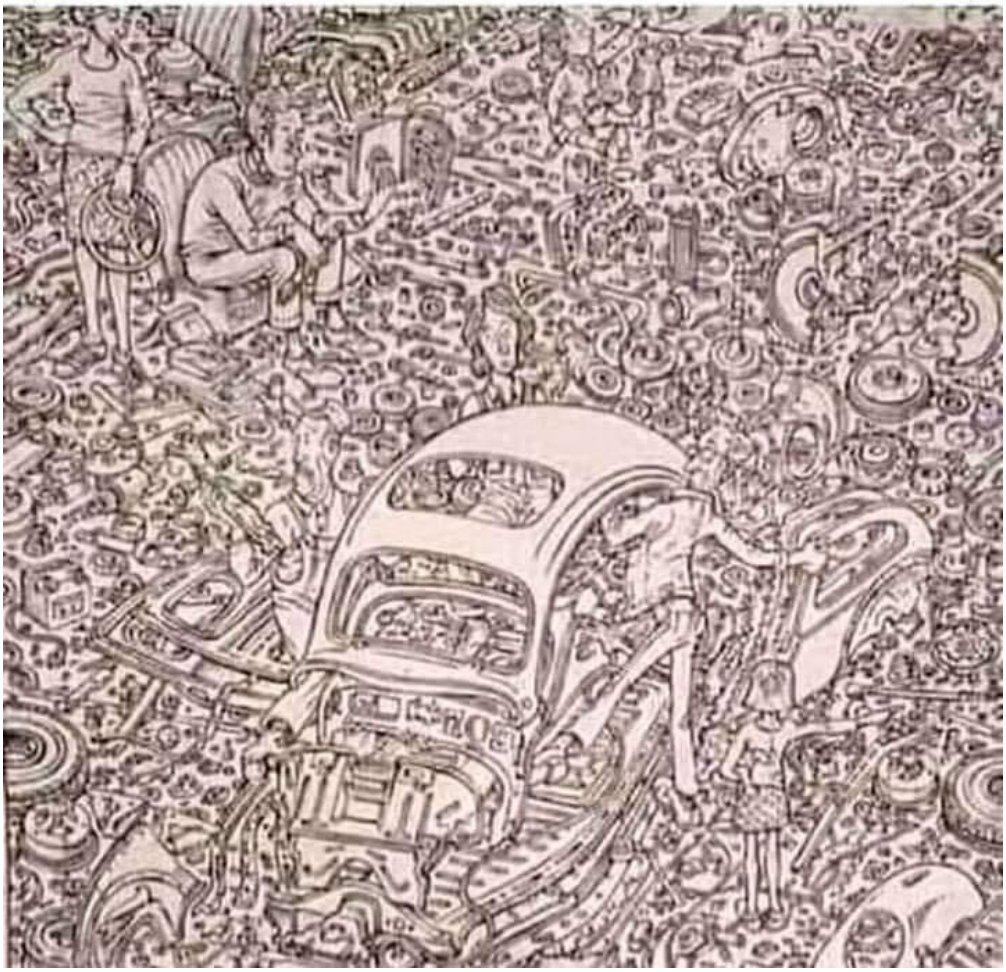
If you would like to cover more details and other aspects of this just let me know, and/or discuss it with your fellow Hams. It can make for a great discussion.

Have fun with amateur Radio.
Help somebody if you can.

Regards, Lou WA2GKH

Remember, "Tech Corner" is yours.
Please consider writing a piece for Tech Corner about your station, your projects or whatever you are interested in.
If it has to do with Amateur Radio, we are all interested. Nothing is too short.

They say if you can find 7 people and a cat in the photo, your brain is in the best condition. 6 is fine, 2 or 3 means the mind needs help. I found 5 only




CW
FOREVE

Now let see who has been paying attention. As you can see. How many four leaf cloves are in the newsletter. The first person to let me know wins a prize.
My email is bgrier3270@comcast.net

The Next Club will March 16, 2022 at 7:00 PM

In Person at OEM Training Room

Dues Are Due

APRS Developer Bob Bruninga, WB4APR, SK

The creator of the Automatic Packet Reporting System (APRS - www.aprs.org), Bob Bruninga, WB4APR, of Glen Burnie, Maryland, died on February 7. An ARRL Life Member, Bruninga was 73. According to his daughter, Bruninga succumbed to cancer and the effects of COVID- 19. Bruninga had announced his cancer diagnosis in 2020. Over the years,
he readily shared his broad knowledge of and experience with APRS, among other topics in the amateur radio and electronics fields.

While best known for APRS, Bruninga was also a retired US Naval Academy (USNA) senior research engineer who had an abiding interest in alternative power sources, such as solar power. In 2018, he authored Energy Choices for the Radio Amateur, published by ARRL, which explores developing changes in the area of power and energy, and ex- amines the choices radio amateurs and others can make regarding home solar power, heat pumps, and hybrid and electric vehicles. Bruninga drove an all-electric car and had experimented with a variety of electric-powered vehicles over the years.

APRS originated in 1982, when Bruninga wrote his first data map program that plotted the positions of US Navy ships for the Apple II platform. A couple of years later, he developed what he called the Connec- tionless Emergency Traffic System (CETS) on the VIC-20 and C64 platforms for digital packet communica- tions to support an endurance race. The program was ported to the IBM PC platform in 1988, and was re- named APRS in 1992. The recognized North American APRS frequency is 144.39 MHz, and APRS is glob- ally linked via the internet. Bruninga founded the Appalachian Trail Golden Packet (ATPG) event, which fields APRS nodes from Stone Mountain in Georgia to Mount Katahdin in Maine each July.

ARRL Contributing Editor Ward Silver, N0AX, remembered Bruninga this way : “Bob kept pushing APRS beyond its origins as a position reporting system. He developed and helped implement numerous other uses of APRS in support of what has become the ‘Ham Radio of Things,’ with great potential for future amateur radio applications. Bob’s far-reaching vision and imagination were as good as it gets.”

Bruninga mentored USNA midshipmen in building and launching amateur radio satellites and CubeSats, be- ginning with PCsat in 2001. PCsat was the first satellite to directly report its precise position to users via its onboard GPS module.

Subsequent USNA spacecraft included PSK31 capability (HF to UHF) and other inno- vations.

Amateur Radio on the International Space Station (ARISS) ARRL liaison Rosalie White, K1STO, recalled that Bruninga attended many ARISS-International meetings and contributed "enormously" to ARISS APRS activities, leading a team in developing protocols and software for rapid message exchange via a packet "robot."

White said APRS remains a key staple in the new ARISS InterOperable Radio System (IORS) that's now on board the ISS. She added that Bruninga offered input for future NASA Lunar and Gateway opportunities in which ARISS hopes to take part.

Last year, ARRL CEO David Minster, NA2AA, on behalf of ARRL, honored Bruninga with a brick in the ARRL Diamond Club Terrace at ARRL Headquarters. ARRL sent him a letter of appreciation along with a replica of the brick.

Bruninga held a bachelor's degree in electrical engineering from Georgia Tech (Georgia Institute of Tech- nology) and a master's degree in electrical engineering from the Naval Postgraduate School. Bruninga was a 20-year US Navy veteran. Dayton Hamvention® honored him in 1998 with its Technical Excellence Award. Bruninga authored and co-authored numerous academic papers over the years, and was frequently in demand as a speaker and presenter at amateur radio gatherings. Survivors include his wife, Elise Albert; daughter, Bethanne Bruninga-Socolar, WE4APR, and son A.J. Bruninga, WA4APR. Arrangements are pending, although his daughter said that a celebratory memorial ser- vice will be held this summer in Annapolis, Maryland.

THIS SPACE FOR “RENT” (aka Call For Articles)

For “Rent”? Sort of... Rather, do you have any news of interest to the SHARK readers. Have you run across Some amateur radio related news items? How about links to homebrew projects or new equipment?
Have you worked or played with a new technology.
Or maybe you’re one of the more experienced operators in our community.

You don’t have to be a Pulitzer Prize winner to submit an article. I’ll take anything, but would love to get articles that are at least two pages in length (single-spaced). Photos are great, too! Please remember, any submissions
need to be free of copyrights. Creative Commons are okay, but I will need references to be able publish them with attribution.
Thanks & 73 DE KB2YJD, Editor