SHARK NEWS

THE OFFICIAL NEWSLETTER OF CAPE MAY COUNTY AMATEUR RADIO CLUB

JULY 2021

From The Desk of the President:

Field Day 2021 was a remarkable success. This was a real Field Day for us. The Club set up three HF station and operators were out in tents in a field and all antennas were just put up for the Field Day. for the most part. I thank all our Club Members who came out, to help set up, operate the stations and all the support people but most of all, all the people who help us get out of the field very quickly. Field Com. 24-1 has had a good test with the Field Day operations.
Now we are now starting to plan for International Lighthouse / Lightship Weekend in Aug

Southern NJ Section News July 2021
Tom Preiser N2XW SNJ Section Manager

n2xw@arrl.org

Field Day Success

Field Day was very successful through out Southern New Jersey. Many clubs were outside and had stations set up. It was good to see everyone interacting with each other and I had a good time talking with everyone. There is so much expertise in so many areas of amateur radio to be found in our area. Whatever your interests are I am sure you can find it at one or more of the clubs in South Jersey.

There were new hams that were getting involved as well as those who had been away from the hobby for a while. Both Tom Devine WB2ALJ, Section EC and myself made visits to almost all of the cubs that were outside and participating. Thank you to all for welcoming us at each site. I am proud of our section for the outstanding performance on Field Day.

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.

- Tech Corner - - -

Antenna Analyzer Measurements

Tech Corner takes a quick look at Antenna Analyzer Measurements.

There can be a tendency to just consider the SWR reading

Weather you are new to analyzers or have been using them for years, we do scratch our heads at times about what we are seeing. There are many different measurement combinations involving antennas, transmission lines and everything that may be part of a transmission line path from radio to antenna. This quick
look at analyzer measurements is just limited to “50 ohm Resonant Type
Antennas” This is the case for most 2m, 3/4m and many HF antennas.

There are a few fundamentals that are good to revisit. The following are a set
of helpful tips. Although they are not perfect and do have exceptions they can
help keep the user of an antenna analyzer on track.

Most antenna analyzers that perform and report a measured SWR value
also provide the measured values of "**R**", "**X**", and "**Z**".

- When using a 50 ohm type of SWR analyzer (which most are) and it is reading a 1:1 SWR, then the "**R**", "**X**", and "**Z**" values are nominally as follows: **R=50** ohms **X=0** ohms **Z=50** ohms.

The above values represent a perfect 50 ohm match, but in reality they are not often achieved. Many analyzers may show an SWR of 1:1 where and when the “R” and “X” values although not perfect are close enough to be rated and displayed as an SWR of 1:1.

- In the case of a 1:1 SWR measurement the "Z" value is 50 ohms of pure resistance, with no reactance and therefore no reflected power as seen by the analyzer, at the analyzer’s point of connection.

- There can be cases where the "Z" value is 50 ohms, but "R" is not 50 ohms and "X" is not 0 ohms. In this case the SWR is not 1:1.

- In most cases an SWR of 1:1.5 is good and often has nice usable bandwidth (i.e. from its 1:2 SWR end frequency points). Check your rigs manual for possible suggested SWR limits.

- When the "X" value is not 0 (zero), then there is either "Capacitive Reactance" or "Inductive Reactance" present at the connection point to the analyzer. In other words, the antenna system, at the analyzers connection point is not perfectly resonant at the measured frequency. But remember, in many cases getting 1:1.5 works fine.

- If a 50-ohm antenna is resonant and it's SWR is 1:1 and some good quality low loss 50-ohm transmission line is connected to it, then its SWR will nominally remain near 1:1 for reasonable lengths of

transmission line. This is also true if your transmission line has well connected multiple series sections that are all the 50 ohm type.

- If your antenna is not resonant on the selected measurement frequency then its SWR will not be 1:1. If you then move your 50 ohm antenna analyzer to different points along a multi-section transmission line and all of the sections are 50 ohm type transmission line, then the SWR reading will nominally remain constant from point to point but the mixture of “R”,“X” and “Z” values will be changing from point to point. Although it is not the SWR you want or should have, the changing values of “R”, “X” and “Z” is normal for this condition and is caused by is transmission line impedance transformation. (which is a nice topic to explore)

- If upon repositioning your analyzer along the length of a multi-section transmission line and the SWR appears to be good but it is not good when measured at other points along the transmission line, then, the multiple sections of transmission line may be of different types. By different types it is meant that they are not all 50 ohm type (for this example). Also, and of course the transmission line sections or their connectors may be at fault. If you can, test your transmission line at points along the way with a 50 ohm dummy load.

Note: There can be designs to employ custom lengths of non-matching

transmission lines, that then develops a match condition, to be provided at the radio's connection point for a specific frequency.

If your antenna is a non-resonant type antenna or its "R" value at resonance is other then 50 ohms then much of the above does not apply and generally requires a tuner for a matched connection to your radio.

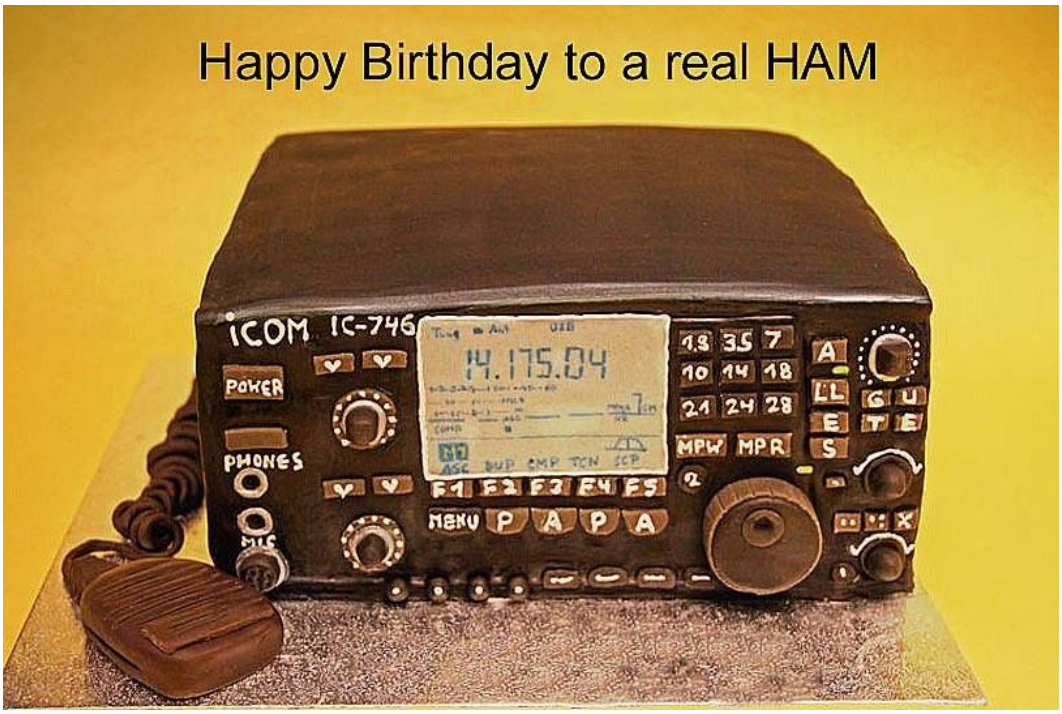
There is much to antenna analyzer measurements but these tips can be helpful. Many of the above tips could use additional technical explanation.
Many of these tips can make good topics for group discussions.

Note: Always be safe, do not take risks, and use your test equipment as described within its manual. Use eye protection, antenna elements can be a dangerous poke hazard.

Let's talk and discuss if there are questions.
If you spot an error please let me know.

As usual, enjoy Amateur Radio

Lou
WA2GKH



June

Elaine Woolley KC2WFH

Bill Young KC2UMM

Ron Bockhorn KB2KEI

Gabriel Hallam

Mike Paglia KC2PAG

Margaret Richey KC2PAR.

July

Tim Cwik N2LTQ

Arnold Falck N3WYA

Ed Maher NL7VP

Patricia McKernan W2PTM

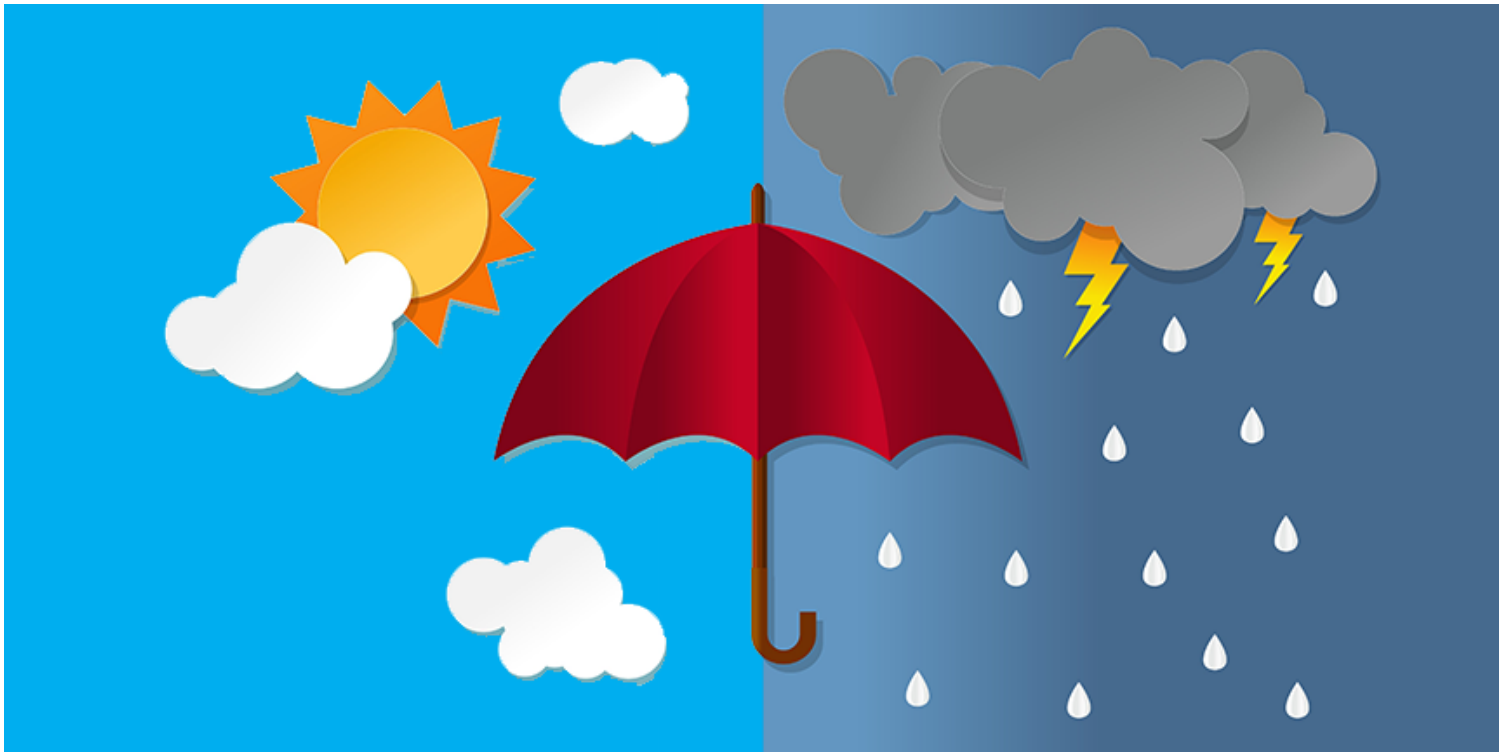
Bob Myers KB2DHK

Bob Pantazes W2ARP

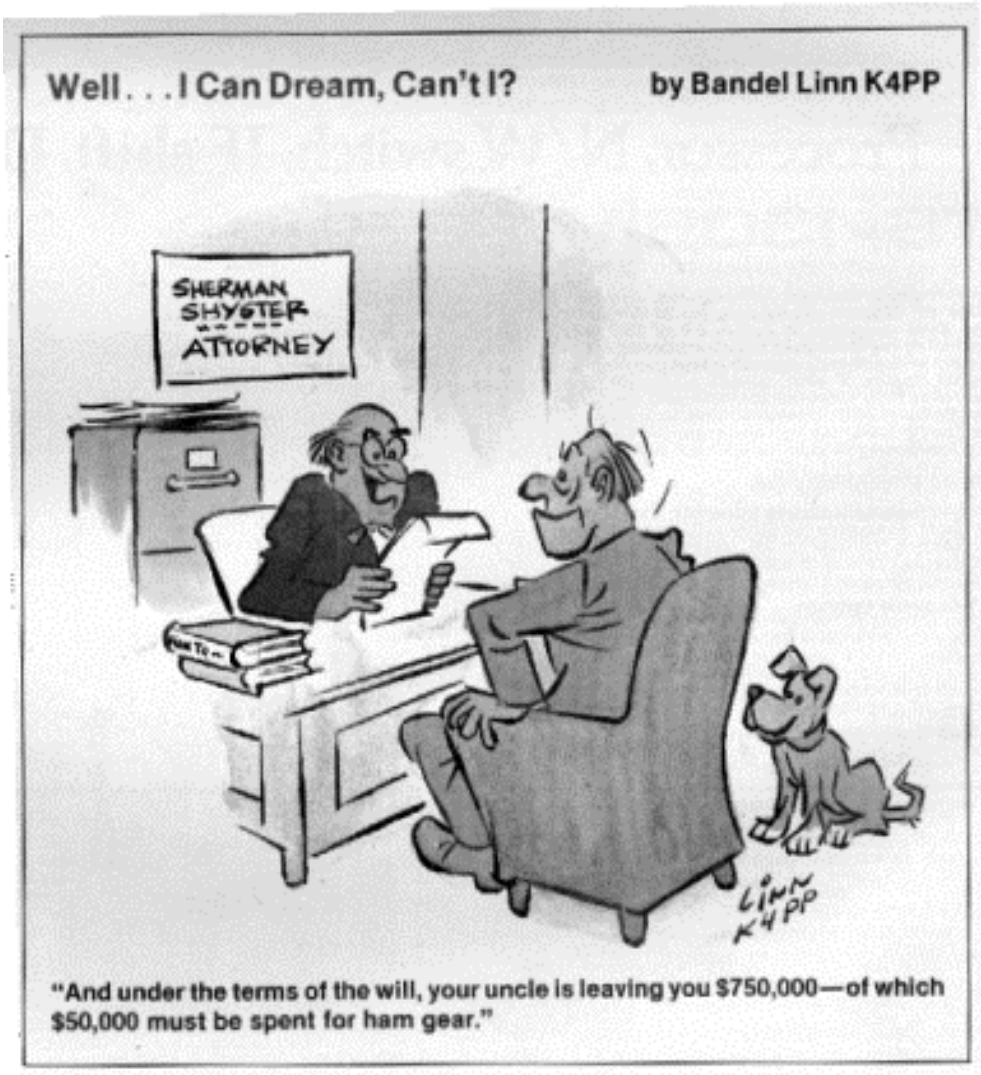
Art Schaper AD2CM

From Skyward Coordinator Bill Aber N2JAI

I would love more amateurs to join our Monday Regular Skywarn net, and if possible a little more participation during Severe Weather Activations. We have been around a long time now since 1997 and have by way of participating amateur radio operators provided the NWS with valuable information. So if the area amateurs whether they are Spotters or not are welcome to join our directed nets. It would be appreciated.



"Sorry OM, I can only work QRP at the moment!"



Ultimate Raspberry Pi for your Ham Radio

https://youtu.be/oyV4n5lVFRs

Ham radio made me a better drone pilot

https://youtu.be/hSYJzOAeVzA

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