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The President's Corner: David KI4W

Time is at premium these days. I finally found the time to write this month's Presidents Message as I am in the waiting room of the Chevrolet dealership while my truck is being serviced on a Saturday morning. They said it would be an hour to an hour and a half wait so I should be good to go with getting this done as well as reviewing the minutes of the last meeting. I hope all had a good summer despite some of the heat we have had and not to mention the humidity. Don't worry though it won't be long and we will be complaining about the cold temperatures. I hope all had a great summer and a good holiday weekend for Labor Day. I for one had a great Labor Day weekend with being able to get away for a few days. Trips down southeast are fewer and further apart these days so getting away is even more special but more expensive with the cost of paying for elder care for a few days.

I would like to start off by thanking George KM4ODS for revamping the Possum Trot Chapter of Ten-Ten International. This was a time consuming project but the end result has been well worth it. If memory serves me we have had up to 17 or 18 checkins on the ssb net and maybe up to half a dozen on cw. It doesn't take much folks to put up a dipole for ten meters or a vertical so please join in on our ten meter nets. The cw net is on Tuesday evenings at 8:00pm and the ssb net is on Wednesday nights at 8:00pm. I have noticed some folks get fired up on ten meters before 8:00 when our two meter net is over. If you need any information about the ten meter nets or antennas for ten meters just holler out on the repeater during the net and I will guarantee you will get some answers to your questions or help with getting up an antenna. For information on Ten-Ten International go to www.ten-ten.org.

Our repeaters are working great and I hope you all will take the time to use them as that is what they are there for. Ben KM4ODT and Mike K4JWX and the repeater committee have done a great job with those machines. You can't even imagine all the hours and work that have been put into those repeaters the last two or three years. The relocation of those repeaters was not as simple as taking them at the old location and putting them up at the new location. There were hours and hours spent on finding a new location involving countless emails, phone calls, meetings with representatives from various county and state agencies, and the repeater committee met about half a dozen times to work out details. Then there was the time recently when Ben, Mike, and Bobbi spent time tracking down the interference that was taking place with the cross banding handheld. Like I said before they worked hard so you don't have to as the commercial says. You can reward them for their hard work by using the repeaters early and often.

Another shout out to the group led by Marty W4MLW who headed up the project to get all the CFARS Field Day equipment rounded up and stored at the mini storage. For the first time all of our equipment is at one location. Also thanks to Marty and his son for securing this location and for the cost savings to CFARS. I sure missed using that equipment this past June and if all goes well we will fire it up in February for the North Carolina QSO Party when we once again continue on with our winning ways.

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CFARS Officers

PresidentDavid KR4OE kr4oe@nc.rr.com
 Vice Pres..... Dale AK4YS dale.mohr@yahoo.com
 Sec./Treas..... Chuck KJ4RV kj4rv@arrl.net
 Recorder.....Bill KJ4OFD kj4ofd@arrl.net
 Newsletter Editor...Mike KN4XP kn4xp@yahoo.com



Coordinators

Membership.....David KR4OE kr4oe@nc.rr.com
 Net Manager.....Chuck KJ4RV kj4rv@arrl.net
 EmergencyMike K4JWX k4jwx@outlook.com
 Information.....
 Repeaters.....Ben KM4ODT bassettbw@aol.com
 Sky Warn.....Jim KI4YRH ki4yrh@aol.com
 Field Day.....George KM4ODS km4ods@gmail.com
 Health & Welfare... Carl K4CFB carlbeene@gmail.com
 VEC..Pat N4UGH n4ughpat@aol.com
 SwapfestDavid KR4OE kr4oe@nc.rr.com
 Public Info... Marty W4MLW carolinapretzel@embarqmail.com

Club Repeaters

(PL 100 Hz)

K4MN
 2 m 146.910/146.310
 70 cm 444.400/449.400

K4MN
 6 m 53.810/52.810

WA4FLR
 2 m 147.330/147.930

Club Membership

Dues

CFARS club membership dues are due and payable in January each year. CFARS does offer you the option to pay your dues no later than March. Yearly dues are \$15.00. CFARS offers a lifetime membership option for \$150.00. If your dues are not paid by March you will not be a voting member of the club. The right to vote on issues for the club comes with club membership. PO Box 36106, Fayetteville, NC 28303



CFARS Club Patches are available for purchase. Contact **Chuck KJ4RV** for your patch today!

The Cape Fear Amateur Radio Society News is the official newsletter of the Cape Fear Amateur Radio Society. It is published monthly as a PDF. The newsletter is emailed monthly when the latest version is available. Please provide your email address to the Newsletter Editor. The CFARS News welcomes articles and other contributions. Please email submissions to the newsletter to cfarsnews@gmail.com. The Editor reserves the right to edit any and all pieces. The submission deadline for each month's News is the last Friday of the preceding month. The views expressed in the CFARS News are those of the individual authors and do not necessarily reflect the views of the Editor or CFARS.



August 2020 Club Meeting Minutes

The Monthly Meeting of the Cape Fear Amateur Radio Society was held at Peace Presbyterian Church at 3203 Ramsey Street in Fayetteville, NC on Monday Evening, August 17, 2020 at 7:30 pm. President David KI4W opened the meeting and welcomed all for coming to the meeting and led the pledge of allegiance to the flag of our country. Paul K4PGM gave the invocation and David led the introductions in the usual CFARS fashion.

Paul K4PGM and Jim KI4YRH moved to accept the minutes of the previous month's meeting and the minutes

were accepted.



COMMITTEE REPORTS:

Treasurer: Chuck KJ4RV gave the Treasurer's Report. We had money in the bank at the end of last month, and we collected donations and dues, and had no bills. We have more money in the bank than we did last month.

Net Manager: Chuck KJ4RV gave the Net Manager report, June was a good month with 813 checkins, 31 pieces of traffic, and 1150 minutes of net time. July we had 818 checkins, 32 pieces of traffic, and 1137 minutes of net time. These are our repeaters, lets keep them busy.

Health & Welfare: Carl K4CFB was not present for the Health and Welfare report, but we have no reports of deaths or sickness.

Repeater: Ben KM4ODT reported that the Repeaters were all working well, though the 6M repeater is still a work in progress. Mike K4JWX reported that he, Bobbi N4KAY and Ben KM4ODS went in search of an errant radio interfering with the 440 and 2m repeaters, found the culprit, and fixed it. They posted a video of their adventures on the CFARS website of what they did and how they did it. Interesting piece of work. Thanks folks.

Membership: David KI4W reported we have several applications for membership but they are not present.

Field Day: George KM4ODS had nothing to report regarding Field Day. ARRL should have results posted in December.

Swapfest: David KI4W reported the Swapfest that was to be held at the Cumberland County Shrine Club on August 8 had been cancelled.

Emergency Coordinator: Mike K4JWX reported that shelter checks were done July 22 and that all the shelters were in good shape. A couple of shelters were removed from the County list and new ones will be added once the County has determines where they will be.

Public Relations: Marty W4MLW reported that Public Relations for the present have been updating announcements on the repeaters.

VE Testing: Pat N4UGH was not present. Pete K4QFK reported that VE Testing was done on August 8, and we have several new hams, and several upgrades. The next testing session will be October 10 at the Cumberland County Shrine Club.

Mike KN4XP and Steve KI4EZL were not present to report on the newsletter or website. David KI4W reports that both have been doing a fantastic job, and that they would both appreciate input from the members for inclusion in the newsletter or the website.

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Possum Trot Net: Ron K4FET reports that the Possum Trot checkins had dropped for a spell, but are now rebounding to previous levels. Remember folks, the Possum Trot Net is from 0500 - 0700 M-F hot, cold, rain, sleet, snow.

Old Business: David KI4W said Marty W4MLW has looked into rental of a storage building; a 10'x20' unit is available for our use for \$90.00 per month with no contract at All American Airborne Storage in Raeford. George KM4ODS moved to rent the unit, Paul K4PGM seconded the motion. David put the motion to a vote and the motion carried. We need to make arrangements to pick up the equipment from Linda Kelchner's place, and from Chuck KJ4RV and elsewhere and put them in the storage building. David KI4W has spoken with representatives of Methodist University. Methodist is still closed down to non-students but that we are still a go for VE Testing and Field Day once the University reopens. Pete K4QFK indicated that we still have stuff in the old repeater room, we need to pick it up and move it to storage once we get the OK from Methodist University.

New Business: None.

Program: Dale AK4YS introduced the program for the evening: Show and Tell. He showed us a morse code tutor he built from a kit as well as a pixie 2 transciever kit and an Iditerod antenna he inheirited from Van N4ERM. Chuck KJ4RV showed us a Joule Thief led light he built, a power supply kluged from a server hot swap computer power supply, night lights in a liquor bottle, and another in a pepper bottle, and a 3-element tape measure antenna. Ben KM4ODT showed us a LiFEPo battery kit he put together and a Kerberos SDR raspberry Pi RDF kit. Ron K4FET brought in an assorted collection of code keys from his shack. David KI4W showed us a Baofeng hand held VHF/UHF transceiver suitable for checking into our various nets, indicated a need for folks to be net controllers (and just to check into our nets).

Announcements: None.

Door Prize Drawing: Marty W4MLW pulled tickets out of his coffee can. David KI4W won a \$50 ARRL gift certificate, as the grand prize for Field Day participation. John KF4JDR also won a \$50 ARRL gift certificate for Field Day participation as well. Wes W7YWT won a Duracell battery charger donated by Jeremy KN4JUY. George KM4ODS won a 2015/2016 repeater directory book. Dale AK4YS won 2 antenna books. Chuck KJ4RV won a \$25 ARRL gift certificate. John KF4JDR won a \$25 ARRL gift certificate. Marty W4MLW indicated he had no more prizes to offer, and requested that if anyone has anything new in the box or gently used items to bring them for the drawing next month.

Paul K4PGM and Jim KI4YRH moved to close the meeting and the meeting was adjourned at 8:40 pm. We had 31 members present at this meeting.

Submitted:
Bill KJ4OFD, Recorder

The President's Corner: David KI4W ... Continued

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I look forward to seeing you at the next monthly meeting. If you have any questions about CFARS please feel free to contact me. My contact information is readily available on the CFARS website as well as on the ARRL website under our club information. I am very proud to be a member of CFARS and I hope you are as well. We have a great group of hams who are always ready to help in any way they can. We are one of the most active clubs in the state.

Software Defined Radio

By
Ben Bassett, KM4ODT

This article is intended to provide an overview of Software defined radio (SDR) and should not be considered a complete reference for all things SDR. Over the last couple of years there has been a wave of SDR receivers, and transceivers flooding the amateur radio market. Although the concept of digital radio/receivers can be traced back to the 1970's it wasn't until the mid-1990's that the concept really gained traction with DARPA and the US Military.

SDR is a way of handling many of the functions of ordinary receivers and transmitters by converting the signal from Analog to Digital (A/D) and processing them through a computer. It can be a Digital Signal Processor imbedded into the radio's circuitry such as the Elecraft ® KX3 or the COMMRADIO CTX-10 or a computer; PC/MAC/Micro Processor-Raspberry Pi.

The receiver's performance is directly related to the dynamic range of the analog-to-digital converters (ADCs) utilized in the hardware, usually a simple looking box without buttons, displays, "bells, or whistles". Radio frequency signals are down converted to the audio frequency band, which is sampled by a high-performance audio frequency ADC. First generation SDRs used a PC sound card to provide ADC functionality. The newer software defined radios use embedded high-performance ADCs that provide higher dynamic range and are more resistant to noise and RF interference. When it comes to **ADC resolution** higher is better. More resolution means more dynamic range, less signal imaging, a lower noise floor, more sensitivity when strong signals are present and better ability to discern weak signals. The resolution is usually measured in effective number of bits or ENOB. There is usually a direct correlation to ADC resolution and cost.

The software performs the demodulation, filtering (both radio frequency and audio frequency), and signal enhancement (equalization and binaural presentation). It is also able to facilitate every common amateur modulation: CW, single sideband modulation, frequency modulation, amplitude modulation, and a variety of digital modes such as radioteletype RTTY, PSK-31, slow-scan television, and packet radio just to name a few.

Most of the low-cost receivers (\$30.00 or less) generally cover 24Mhz to 2Ghz continuous frequency range, however they require an up-converter to receive HF. There are a few such as the SDRPlay series that will cover from 1KHz to 2GHz (Yes 1KHz) without needing an up-converter for HF. Once again keep in mind that the cost will rise with the features and functionalities of the SDR.



So why would anyone want to buy a cheap SDR dongle? The best answer in the world; A low-cost entry level option into experiencing radio. The RTL-SDR has a price point around \$30.00 USD coupled with almost unlimited open source software (usually free) giving access to those who are not ready to spend a lot of money on gear, and as mentioned before a great way to learn and possibly develop new techniques for radio design.