The Smokehouse

Where Country Hams Hang Out

August 2020

President, Larry Brumett, KN4IV

Vice President , Tom Buchanan KG4KGY

Sec/Treas, Herb Hess, KJ4CMG

MCARC Meeting
July 21st, 2020

The meeting came to order at 7pm in the basement of the City Hall Building located in Glasgow, KY

KC4RGE made a motion, seconded by K8RPG, to dispense with the reading of the minutes. Motion passed.

KD4SS gave the financial report. He reported $XXXX in the checking and $XXXX in the savings. KC4RGE made a motion, seconded by KJ4OR to accept the treasurer's report. Motion passed.

Committee Reports:

Repeater Committee: KD4SS met with Dave Fields who is an expert with the network analyzer the club owns. Their testing confirmed there is a bad issue with the VHF antenna, and it has over a 3:1 SWR. The climber has been contacted and he is currently scheduled to be on site on July 23rd, 2020. KD4SS brought up the idea of setting up one of the Yaesu Fusion repeaters in the clubroom and utilizing the VHF antenna on the tower located on the roof of the City Hall Building. Discussion ensued about choosing a frequency to test on and setting it up to do both digital and analog operation in the beginning.

Hamfest Committee: No report. Most all the hamfests across the state have been cancelled this year. If conditions don't improve, the Cave City Hamfest next March could be cancelled.

Field Day/Special Event Committee: K4UOJ gave a report on the club's recent ARRL Field Day event. The event was well attended, and everyone had a good time. K4UOJ noted that the club call was spotted several times resulting in several pileups. The club ended up with over 600 contacts and a lot of extra points for youth-on-the-air, digital contacts, 100% solar power, and a social media presence. The antennas were able to be repaired at the American Legion Park before the operating event.

Media Committee: The new Facebook page is active, and several people

have been posting information and events to the new page. KC4RGE and KN4WLS have been regularly updating the ky4x.org website.

Old Business: No old business to report.

New Business: KJ4OR gave a presentation on purchasing and building an emergency communications trailer. He priced a 16' long trailer that is 7' wide. The trailer would have shore power and solar power capabilities and be equipped with small kitchenette and small porta potty as well as being equipped with heat and AC. Estimated cost for the complete setup will be around $14,000. That setup does not include provisions antennas or antenna structures. There is currently an 8-week backlog from the manufacturer of the trailer. Great discussion ensued about the cost, usage and feasibility of having a dedicated communications trailer. KJ4CMG made a motion, seconded by K4UOJ, to table any action on purchasing a trailer and equipment until the subject can be studied more in-depth and other alternatives explored.

K4UOJ brought up the idea of setting up a program to give youth that pass their licensing test a free HT radio. It is the hope that this would spark interest in the hobby and get people involved in amateur radio. K4UOJ turned his idea into a motion, seconded by K8RPG to advertise this program and the club will purchase the radios. The stipulations are that the person be a newly licensed Ham that takes the test during one of our testing sessions and be under the age of 18.

K4UOJ gave a presentation on Hotspots for DMR operation. The hotspots support many different operating modes like P25, Fusion, etc. The main function of a hotspot is to connect a DMR or other digital radio to the internet. Discussion ensued about the differences between DMR and Fusion, programming ease and functionality, and entry level costs to get started in Digital Radio Operation.

No further business to come before the members, KJ4OR m:ade a motion, seconded by K8RPG to adjourn. Motion passed and the meeting was adjourned at 8:11 pm. There were 11 members present for the meeting.

FCC Fines HobbyKing Nearly $3 Million for Marketing Unauthorized Drone Transmitters

The FCC has issued a *Forfeiture Order* (***FO***) calling for HobbyKing to pay a fine of $2,861,128 for marketing drone transmitters that do not comply with FCC rules. An FCC Enforcement Bureau investigation stemmed in part from a 2017 ARRL **complaint** that HobbyKing was selling drone transmitters that operated on amateur and non-amateur frequencies, in some instances marketing them as amateur radio equipment. The fine affirms the monetary penalty sought in a June 2018 FCC *Notice of Apparent Liability* (***NAL***). The FCC said its investigation found that dozens of devices marketed by the company transmitted in unauthorized radio frequency bands and,

in some cases, operated at excessive power levels. "Such unlawful transmissions could interfere with key government and public safety services, like aviation systems," the FCC said."We have fully considered HobbyKing's response to the *NAL*, which does not contest any facts and includes only a variety of legal arguments, none of which we find persuasive," the FCC said in the *FO*. "We therefore adopt the $2,861,128 forfeiture penalty proposed in the *NAL*."

The FCC pointed out in the *FO* that it has previously made clear that "[d]evices used in the Amateur Radio Service do not require authorization prior to being imported into the United States, but devices for other services, including the CB service, require Commission approval." The FCC investigation found that 65 models of devices marketed by HobbyKing should have had FCC certification.

Responding to the *NAL*, HobbyKing claimed to have ceased marketing the 65 models the FCC identified, but promised only to make "best efforts" not to market other noncompliant RF devices. "HobbyKing has a continuing obligation to market only radio frequency equipment that is properly authorized," the FCC said. "We therefore remind HobbyKing that continuing to market noncompliant radio frequency devices could result in further significant forfeitures."

HobbyKing has 30 days to pay the fine. If it fails to do so, the matter will be referred to the Department of Justice for collection.

International Lighthouse Lightship Weekend on Track for 2020

Registrations for this year's popular International Lighthouse Lightship Weekend (**ILLW**) appear to have been largely unaffected by the current COVID-19 pandemic. The event will take place this year over the August 22 – 23 weekend. By mid-July, more than 200 entries had been received, and some 400 are expected to have signed up by the event weekend.

New to this year's event is Corsica at Phare d'Alistro, which for ILLW purposes carries the French number of FR0030. Two lighthouses in Ghana will be on the air for the first time, as well as Buck Island Lighthouse in the US Virgin Islands (VI0001). Germany is well in the lead with 54 entries, followed by Australia with 29 entries, and the US with 27 entries.

This event is designed as a fun weekend to encourage exposure to amateur radio and lighthouses to the visiting public, and ILLW stresses contacts should be more than just an exchange of signal reports. All participants are urged to observe local COVID-19 safety guidelines. — *Thanks to Kevin Mulcahey, VK2CE*

Hey, Which Coaxial Cable Should I Use?

Coaxial cables are the most popular form of transmission line for getting our signals to and from our antennas. There are many types of cable to choose from and it can be confusing to chose the best one. In this article, we'll cover the most common choices of cable to get you started. We'll focus on the most popular cables, with 50 ohm impedance to match the output impedance of our transceivers. Here's the really simple, short story:

Comparison of three commonly used types of coaxial cable.

At one time, RG-58, RG-8X and RG-8U were military standards but now these terms are used rather loosely and refer primarily to the size of the cable. Accordingly, I added "type" to the term to indicate that it is not a precise standard.

All three of these cable types will handle 100W or more at frequencies below 500 MHz, which covers most ham transceivers. If you are running more than 100W, you should check the power specification of the cable you are using. Times Microwave Systems has a very handy online calculator for coaxial cable specifications, which I used for the calculations in this article.

Signal Loss

All coaxial cables will attenuate the signal as it travels down the cable and the signal loss can be significant. For example, 3 dB of signal loss means that you lost half of the transmit power as it propagates down the line. This loss applies for both transmit and receive… we'll get less power out to the antenna and we'll have less signal showing up at the receiver.

The cable loss will be determined mostly by the size of the cable (bigger is better), the dielectric used in the cable (the insulator between the center conductor and the shield) and the frequency of operation. As an example, consider a 100 foot run of cable for use at 146 MHz, which is high enough in frequency and a long enough run such that we'll see some significant losses. According to the Times Microwave calculator, 100 feet of RG-58 style cable produces a loss of 5.5 dB, which means that only 28% of the power gets through the cable. (The percent power delivered is shown as *Cable Run Efficiency* in the calculator.) This is not good, so we would rarely (never?) want to use RG-58 for that long of a cable run.

The Times Microwave Systems attenuation & Power Handling Calculator is a convenient online tool for comparing coaxial cable options.

Changing the able to RG-8X drops the loss to 4.5 dB, which is only a minor improvement. (4.5 dB loss corresponds to 36% of the power makes it through.) However, using RG-8U type cable decreases the loss to 2.4 dB (58% of the power makes it through the cable), so clearly the larger cable size has an advantage. Now let's change the dielectric. LMR-400 is a popular cable that has the same diameter as RG-8U but with a lower loss dielectric (Foam PE). The 146 MHz loss through 100 feet of this cable is 1.5 dB, or 0.9 dB better than ordinary RG-8U. A loss of 1.5 dB means that we still lose 30% of the power.

Now let's see what happens when we change the frequency of operation. If we use our 100 foot run of LMR-400 on the 20m band (14 MHz), the loss is only 0.5 dB. This means that 90% of our signal power makes it through the cable. You can use the Times Microwave System calculator to try out different combinations of cable length, cable style and operating frequency.

You can get a little more technical info about coaxial cable loss from this Question of the Week article.

This is a quick introduction to choosing the right cable for your amateur radio station. I hope it points you in the right direction. Its always a good idea to buy quality cable from a reputable supplier and to read the specifications for that exact cable type.