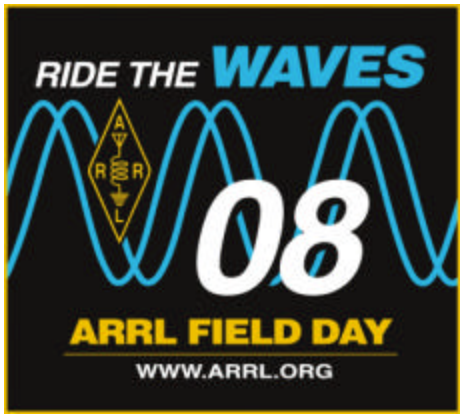
KIMBERLING AMATEUR RADIO CLUB

SQUELCH TALE

MARCH / APRIL 2008

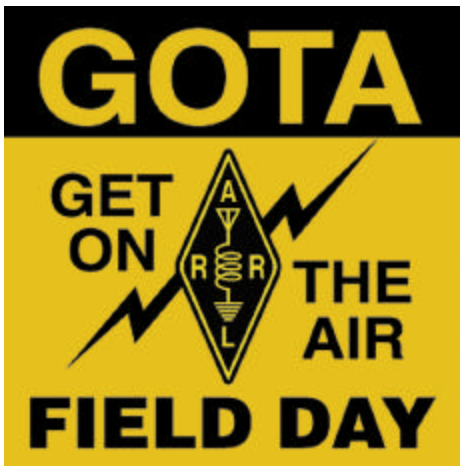


ARRL Field Day is the most popular on-the-air operating event in amateur radio. On the fourth full weekend in June, tens of thousands of amateur radio operators gather for a public demonstration of our service. Field Day is part educational event, part operating event, part public relations event – **and ALL about FUN!**

Amateur radio is about knowledge and growth. It is a hobby and service that truly offers "something for everyone." **Amateur Radio embraces both the old and new.** While CW may no longer be a testing element, it is still a strong and favorite operating mode for many. Tens of thousands of operators are embracing digital technologies, from RTTY to newer digital modes like PSK31 and Olivia. Phone operation, probably the largest segment of the hobby, also has new frontiers to be explored with digitized voice, VOIP, and IRLP. And this is why Field Day – the largest annual on-the-air operating event – is so exciting. It gives all – the old timer and the newcomer, the brass-pounder and the computer assisted operator – the chance to share and teach the broad range of modes and technologies we find in our hobby.

Field Day is truly the time in which **we bring amateur radio to Main Street USA.** By setting up in parking lots, malls, Emergency Operations Centers, parks and even at home, amateur operators learn skills that will allow them to better serve their communities. Setting up in these public venues gives added public relations value – their friends and neighbors can see and experience the fun and public service capability that their "ham radio" neighbors bring to the community. (From the ARRL website)

Field Day is June 28, 29.



CALENDAR OF EVENTS

Breakfast and Exams
The first Saturday of every month, 8:30 AM. Listen on the repeater frequency for location, as it may change. All classes of exams given following the breakfast.

KARC Meetings
The third Tuesday of every month, 7:00 PM, at the Kimberling City Community Center (next to City Hall and over the Police Department).

Sunday
Stone County ARES Net: 8:30 PM
147.345 MHz

Monday
Taney County ARES NET: 8:00 PM
147.195 MHz

Tuesday
Christian County ARES Net: 7:30 PM
145.230 MHz
Bible Belt Christian Fellowship: 8:00PM
146.775 MHz

CALENDAR OF EVENTS (cont)

Wednesday
Kimberling and Tri-Lakes combined ARC Net: 8:00 PM
147.150 MHz

MINUTES OF JANUARY, 2008, KARC MEETING

The meeting was called to order by president KC8JRF at 7:00 PM.
The minutes for the previous meeting were read and approved with one

change. KC0VCL made the motion and a second by KV0VOT to approve.

The treasury report in the amount of $3484.75 was approved.

N0IZJ reported that he changed the antenna on the repeater. A hole was found on both antennas and they have been repaired.. He also helped W0MPF with his equipment.

N0AHY said he hears a hum on the repeater.

The Kendecom repeater has been sent to the factory for repair.

WA0KNW is the new Squelch Tale editor and needs input from the members. His e-mail address is wa0knw@arrl.net.

A new breakfast site for the first Saturday in February will be at the Sunrise Café in Reeds Spring.

The program was on the damage from the tornadoes in January. Pictures and data were available from KC0IBT, emergency management director.

Meeting was adjourned at 8:45 PM.

ANNOUNCEMENTS

For anyone wishing to learn more about packet radio, K.O. Higgs, N0KFQ, provides a packet radio workshop at his home the first Saturday of every month from 2:00 to 4:00 PM. His address is 232 Lone Pine Road; Branson, MO. You can contact K.O. by e-mail at n0kfq@centurytel.net, or by telephone at (417) 334-5670.

From dB to dBm

Last issue we discussed the decibel and its use in determining relative signal levels. In this issue we will expand that discussion to define specific signal levels by use of the decibels-relative-to-a-milliwatt (dBm) specification. In many cases engineers prefer to specify signal levels in dBm rather than milliwatts or watts, as dBm can be manipulated easier than mW, and dBm are more precise than mW or watts. We start with the specification of 0 (zero) dBm = 1 mW. The calculation of dBm uses the same scale as the dB – that is, for each increase of 3 dB the signal level increases by a factor of 2, and vice-versa, for each decrease of 3 dB the signal level is reduced by a factor of 2. Therefore, a signal level of +3 dBm is equal to 2 mW, and, a signal level of –3 dBm will equal 0.5 mW. Notice that the dBm scale can be either + (positive) or – (negative). Positive levels will be greater than 1 mW and negative levels will be less than 1 mW. Don't let this confuse you, as it is not as complicated as it sounds.

So what is the advantage of using the dBm scale? It is simply that if a signal is specified in dBm and there is a change in level specified in dB, the new power level can be calculated by simple addition or subtraction. For example, if we start with a signal level of +20 dBm and that signal passes through an amplifier with 10 dB of gain, the new level will be 20 + 10 = + 30 dBm. On the other hand, if the same +20 dBm signal passes through a 10 dB attenuator or suffers 10 dB of loss through a poor feedline, the new level will be 20 -10 = +10 dBm. If your 2 meter transceiver has an output power of 50 watts (+47 dBm) and your feedline has a typical 1 dB of loss, the power reaching the antenna will be 47 – 1 = +46 dBm, or 40 watts. 2 dB of loss will reduce that power to 32 watts, and 3 dB of loss will reduce it further to 25 watts. This shows that a good low loss feedline is essential for greater efficiency.

To give another practical example, let's assume you are going to design a receiver front end and the maximum signal level the mixer can tolerate without distortion is 0 dBm, but it can recover signals as low as –130 dBm (such as shown for the Yaesu FT-450 in the ARRL test lab). How much amplification should you provide in the preamplifier? The signal level from a distant transmitter can be quite low at the receiver. This is the reason that many modern amateur receivers (transceivers) have up to 20 dB of front-end gain in order to get a recoverable signal. Also, most modern rigs have the capability of turning off the preamp if it is not needed to have a recoverable signal or to prevent front-end overload in the presence of very strong signals. In addition, many modern rigs have switchable built in attenuators to further reduce signal levels to prevent front-end overload and distortion. Along with the discussion of preamps and attenuators we might also say that background (atmospheric) noise will typically increase faster than the desired signal as it passes through a preamp (by as much as 3 time as fast) and it will typically decrease faster (again, by as much as 3 times as fast) than the desired signal when it passes through an attenuator, although the attenuator itself will effectively add some noise. This is why it is sometimes best to turn off the preamp and even switch in the attenuator when listening to a noisy band if the desired signals are strong enough to be recovered without amplification. This is particularly true when operating SSB in the lower HF bands.

There is a formula for converting dBm to milliwatts or watts, but here are some common levels to remember:

0 dBm = 1 mW
+7 dBm = 5 mW
+10 dBm = 10 mW
+20 dBm = 100 mW
+30 dBm = 1 W
+40 dBm = 10 W
+50 dBm = 100 W
+60 dBm = 1000 W

From this chart you will notice that for each additional 10 dBm the power in watts will increase by a factor of 10.

I hope some of you find this information useful. Next time we'll review compression specifications in amplifiers and some passive devices.

WA0KNW

THE BIBLE ACCORDING TO CHILDREN

In the beginning, which occurred near the start, there was nothing but God, Darkness, and some gas. The Bible says, 'The Lord thy God is one,' but I think He must be a lot older than that. Anyway, God said, 'Give me a light!' and someone did. Then God made the world. He split the Adam and made Eve. Adam and Eve were naked, but they weren't embarrassed because mirrors hadn't been invented yet. Adam and Eve disobeyed God by eating one bad apple, so they were driven from the Garden of Eden. Not sure what they were driven in though, because they didn't have cars.

Adam and Eve had a son, Cain, who hated his brother as long as he was Abel. Pretty soon all of the early people died off, except for Methuselah, who lived to be like a million or something.

One of the next important people was Noah, who was a good guy, but one of his kids was kind of a ham. Noah built a large boat and put his family and some animals on it. He asked some other people to join him, but they said they would have to take a rain check.

After Noah came Abraham, Isaac, and Jacob. Jacob was more famous than his brother, Esau, because Esau sold Jacob his birthmark in exchange for some pot roast. Jacob had a son named Joseph who wore a really loud sports coat.

Another important Bible guy is Moses, whose real name was Charlton Heston. Moses led the Israel Lights out of Egypt and away from the evil Pharaoh after God sent ten plagues on Pharaoh's people. These plagues included frogs, mice, lice, bowels, and no cable. God fed the Israel Lights every day with manicotti. Then He gave them His top ten commandments. These include don't lie, cheat, smoke, dance, or covet your neighbor's bottom (the Bible uses a bad word for bottom that I'm not supposed to say . But my Dad uses it sometimes when he talks about the President). Oh, yeah, I just thought of one more: Humor thy father and thy mother.

One of Moses' best helpers was Joshua, who was the first Bible guy to use spies. Joshua fought the battle of Geritol and the fence fell over on the town. After Joshua came David. He got to be king by killing a giant with a slingshot . He had a son named Solomon who had about 300 wives and 500 Porcupines. My teacher says he was wise, but that doesn't sound very wise to me.

After Solomon there were a bunch of major league prophets. One of these was Jonah, who was swallowed by a big whale and then barfed up on the shore. There were also some minor league prophets, but I guess we don't have to worry about them.

After the Old Testament came the New Testament. Jesus is the star of the New Testament. He was born in Bethlehem in a barn. (I wish I had been born in a barn, too, because my mom is always saying to me, 'Close the door! Were you born in a barn?' It would be nice to say, 'As a matter of fact, I was.')

During His life, Jesus had many arguments with sinners like the Pharisees and the Republicans. Jesus also had twelve opossums. The worst one was Judas Asparagus. Judas was so evil that they named a terrible vegetable after him.

Jesus was a great man. He healed many leopards and even preached to some Germans on the Mount. But the Republicans and all those guys put Jesus on trial before Pontius the Pilot. Pilot didn't stick up for Jesus. He just washed his hands instead. Anyways, Jesus died for our sins, then came back to life again. He went up to Heaven, but will be back at the end of the Aluminum. His return is foretold in the book of Revolution.

There! Now you understand it.