Fannin County Amateur Radio Club

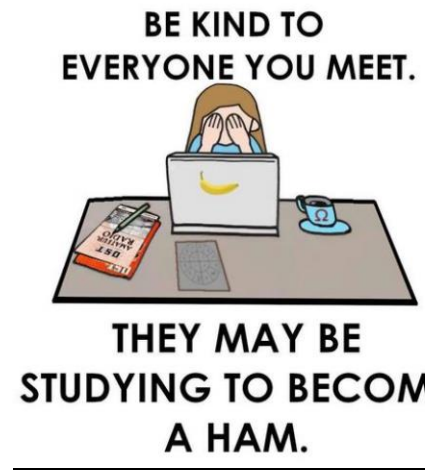
President- Keith Mumaw KI5VNL Vice-President- Sharon McEachern– KK5SM Secretary-Sarah Richardson– KI5PZF

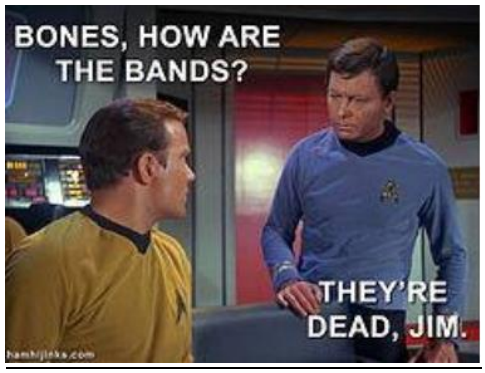
Treasurer- James Hunt- KI5DQ Trustee- Dr.Mike Durbin - K5MJD

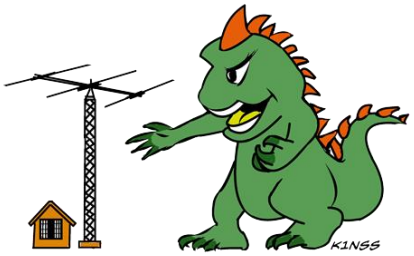
September 2024 K5FRC TREASURER'S

Early Saturday morning, departed my QTH and was somewhere on US HWY287 heading to a musical / medical gig during the 17August K5FRC meeting.
Overall a 21-day road trip, with 16+ days in the BRC desert – more on that later. .
Currently, the club has a balance of $3289.74 in its checking account and a balance of $225.31 in its savings account. Since our last club meeting, the club has had the following deposits and expenditures:
A deposit of $224.00.
The club has had 2 expenditures since last month's meeting, $162.10 for 10 Technician Class study books and $72.00 for USPS mailbox re-newel. An upcoming $700 repeater controller expense for next month.

73's,
James
KI5DQ







K5FRC REPEATERS

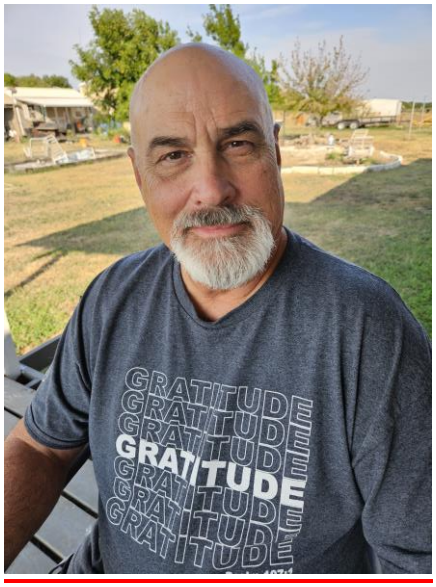
145.470 (100Hz tone; -600Khz offset) C4FM or Analog; IRLP 3602; ECHOLINK 143903

Tuesday Night Net 8:00 PM
442.525 (100HZ TONE; +5.0 Mhz offset) C4FM or Analog;
443.750 (100Hz tone; +5.0Mhz offset) C4FM or Analog;

CROSS BAND IN BONHAM IS ON 445.200 SIMPLEX WITH 100Hz.TONE

FCARC meets every third Saturday at 9:00 AM at the Bois D'Arc Creek Cowboy Church
ZOOM sessions are held every Tuesday at 7:00 PM CST before the net on the 145.470 Mhz repeater. Website: www.k5frc.org

Facebook: www.facebook.com/K5FRC/ Mark, KF5KUW is the administrator.
Website: www.k5frc.org



2024 FCARC President

PRESIDENTS REPORT

September President's Letter

Labor Day has come and gone and with it, summer has started its' slow walk out the door. But if you had been paying attention as Mike Lindsey (KD5UNY) and I were, you could have burned up the 20-meter band with multiple POTA Parks on The Air) check-ins. Personally, I talked with hams from southern California, northern Colorado, south Florida as well as Illinois and Indiana. It was my first true HF adventure on my own and great practice for our "2025 Winter Field Day" event. If I remember right, Mike made a contact in Germany making his day even more special. Most POTA activations are carried out on the 20-meter band making it hard for those with just a "Technician" rating standing in the dust. But not all of the bands are off-limits and had you attended the August 13th net night you would have heard that October will see the 6-meter band open up. This event also coincides with our October "Go Bag Day", which will be held at the new boat ramp on Bois d Arc' Creek Reservoir on the October 18th.

At our event I will be bringing a Yaesu FT-620B, 6-meter transceiver for use by anyone interested. The 6-meter band has been dubbed the "Magic Band", because when conditions are right, you can do almost anything.

A little background is in order to really understand the numerous opportunities the six-meter band offers; (provided by eHam.net)

What is the six-meter band you ask? The six-meter band is a portion of the radio spectrum around 50 MHz allocated to Amateur Radio. If you like a challenge, this band is it!

What's the big attraction? It is fascinating because just about all types of propagation pop up on six meters at one time or another: Sporadic E (Es), Tropospheric Ducting, Aurora, Meteors, even F2 skip like an HF band! They're all here for you to enjoy! Six meters is addicting: A few hams work the band regularly, but many never work it at all. Once you get addicted, you tend to be hooked for life. The band has become more popular in recent years thanks to several new six-meter capable radios. There are two types of six-meter operators; the ones who use FM or packet for local work, and ones who work DX with SSB and CW.

Okay, now that your interest is peaked, what are the frequency

es? Well, in the U.S. and some other countries, the six-meter Amateur Radio band lies between 50 and 54 MHz, just below TV channel 2 in the U.S. In some other countries, six meters is allocated much less bandwidth. New Zealand's band starts at 51.0 MHz. Check your allocations for your particular country. Outside of the U.S., the allocations have changed in recent years, as the band is becoming much more popular.

Where can I run FM? Usually above 52 MHz. The level of activity varies with the area. Its popularity is on the rise thanks to several new all-mode six-meter rigs on the market. The main FM simplex frequency is 52.525 MHz. Your local range is better on six meters than on two meters with the same power and a similar antenna. If two meters is too crowded in your area, the FM portion of six meters may be just the solution you need! Most six meters enthusiasts, however, use only SSB or sometimes CW. Many times, you will find, especially during weak openings, that many operators use CW cross-mode to SSB to make the contact. CW has a way of punching through when nothing else will. Don't worry however, if you don't know Morse Code, you will still make a ton of contacts, as most of them do seem to be made using SSB. For really rare DX though, don't forget to tune down the band and look for stations using CW exclusively! So, knowledge and proficiency in Morse Code does help! There's plenty of time for you to work on mastering that though, and a ton of DX and other contacts to be had just on voice.

What about AM? AM is becoming popular again, with the calling frequency at 50.400 MHz. If there's no local AM work in your area you might check for it during a good band opening.

listening!

Will I need to have a beam antenna? If you want to win contests, bust pileups, and snag a lot of DXS, then yes, as you will able to direct your signal and have more gain, thus more dB of "hearing aid", and more ERP that you'll have. You can have a lot of fun with a vertical during openings, and sometimes it's best to listen on, as you will have better 360-degree coverage, and it is great for local work, but the hot shots use beams. Most serious operators are horizontally polarized, but cross-polarization does not matter for Es, F2, or Aurora. (However, I've found some really interesting things when it comes to sporadic E propagation, when (mainly on FM, but also on SSB), the band starts to "fade out", I've switched to my vertical and sure enough, the station was an S-9+ where he was gone or in and out on the beam, then, later, once the stations started fading out on the vertical, sure enough, there they were, very strong on the beam again, so having both types of polarization is a real plus!) A few stations use 3-element beams, but a 4 or 5-element beam is so small that a lot of people use them. Quite a few people have Cushcraft 6-element "Boomers". There are a few other big beams, and some guys even stack them! However, that might be overkill, especially if you're just starting out. A good 3-element beam will do you just great with a power level of about 50 to 100 watts or so. Also, these small beams work great with just a simple TV antenna rotator. Adding a vertical will compliment your setup nicely, and is probably best for local work, especially if you're going to be using repeaters.

How high should my antenna be? For sporadic E (Es) openings, a height of about 30 feet is about perfect according to studies. For tropo and other modes, the higher the tower the better! Some people have multiple antennas at multiple heights to work different kinds of propagation modes. I've never found the need in doing this though. As for coax, RG8 or RG213 is good enough for most people. Antenna-mounted preamps are really not needed, when the band is open, it is really open! A 1/4-wave whip is less than 5 feet high and makes a good mobile antenna.

What type of radio do I need? The rig selection has improved significantly in recent years. Today, several manufacturers offer excellent six-meter rigs. Probably 50% of the active stations have 80 to 150 W output, from solid-state (brick) amplifiers following the many types of 10W rigs, such as the Yaesu FT-736R or the Kenwood TS-600. The Icom 575H is very popular, as it has an excellent receiver and 100 watts (the 575A is 10 watts). HF rigs that add six meters such as the Icom 706 series can be effective but usually lack receiver sensitivity. Perhaps 40% of the stations run just 10 to 20 W, but most serious operators run higher power. Good six-meter radios tend to be expensive, even on the used market. The kilowatt is rare on six meters; such high power sometimes does not help and can cause terrible TVI. The average for serious stations is 100 to 150 watts, but you can have a lot of fun with a lot less power. Remember; on VHF 10 watts is QRP! Even MFJ has joined the six-meter club with an inexpensive SSB rig. I personally run my Yaesu FT-650 on six meters pretty much exclusively. This

keeps my Icom IC-756 free for the HF bands that I work. My Yaesu FT-650 has the advantage of having 100 watts or a little more output on CW, SSB, and FM, even at 100% duty cycle. And it puts out a healthy 50 watts or more on AM. Anyway, it is best to have a radio dedicated for six meters if you're going to be a serious operator.

How come I never hear anyone? Openings on six meters are rare, especially during low points in the sunspot cycle. For Amateurs in far northern latitudes (say 50 degrees and above), aurora openings are common. The most common openings in middle and southern latitudes are a result of sporadic E (Es), which occurs most often in June. F2 openings occur only when the solar flux is high. The frequency where you are most likely to hear someone is 50.125 USB. A brief explanation of the many types of propagation on six meters follows.

What about F2 openings? F2 propagation, the kind that we know and love on 20 meters, occurs very rarely on six meters. Only at the peak times of the sunspot cycle, a few years out of each eleven, does the band open up for F2. When it does happen, the band becomes a frenzy of activity, and behaves similar to ten meters. Openings occur most often in December/January during the daytime when the solar flux is at least above 150, preferably 200. A few stations have worked 100 or more countries, but they have been patiently working the fleeting openings for many years. The March, 1993 QST magazine has an excellent article on six-meter propagation that shows a correlation between solar flux and openings. The December 1997 issue of QST has a very good article on when to expect F2 openings. Start expecting peak sunspot conditions sometime this year.

What about Sporadic E (Es)? Es is the most common propagation mode on six meters. The term "sporadic" is accurate: stations can pop in and out and then fade quickly. Studies (see March, 1993 QST Magazine), have shown that Es has nothing to do with the sunspot cycle; it is much more a function of the time of year. Es can occur anytime, but is most common around the solstices (June 21 and December 21). In the southern latitudes, the peak occurs around Christmas with a minor peak in June. The northern latitudes find peak times in June and July with a minor peak at Christmas. February is the low point. In addition to the common single-hop range of 500 - 1500 miles, there are quite a few double and more hop contacts on six meters. Now that a number of Europeans are on six meters, we find that they can be worked from the US East Coast each summer. Likewise, the Caribbean stations work all over the US. The US West Coast can work Hawaii, Alaska, and Mexico. You will also hear some hams on June DXPedition trips to Mexico and the Caribbean; they are easy to work in the late afternoon or early evening, even with 10W and a vertical. The VHF contest in the middle of June is also a good time to work Es.

What about Sporadic E (Es)? Within two weeks of the Winter and Summer Solstice (June 21 and December 21), you should be monitoring 50.125 as often as possible; this is the most common time and frequency for Es. I would also check 50.110, 28.885 MHz, and CW beacons between 50.00 and 50.100. 10 meters and the 27 MHz Citizen's Band (27.385 LSB is the most active frequency in the 11-meter band.) These are good indicators of six-meter Es: If you hear Es on 10 meters and the stations are less than 1000 miles away, it's time to check for Es on six meters. If the stations on 10m are 500 miles away, you can be virtually certain that six meters is open. Likewise, a station on six meters from 500 miles away means Es on two meters is possible. I have noticed that Sporadic E propagation can happen at any time, from super brief, weak openings, to monster openings with stations from all over appearing for hours at a time. Sporadic E propagation is probably the most common type of propagation there is on six meters.

So, is six meters really for me? Well after reading this article you should have a pretty good idea about that, but your best way to find that out is to get on the air and give it a try! See what happens, but be patient! You have to be one who likes a good challenge to fully enjoy six meters and discover why it's called the "Magic Band". After you've been on it for some time you will see why it truly is. To quote former President John F. Kennedy, "We do these things not because they are easy, but because

they are hard." Sure, he was talking about the space program, but I think that it applies. One thing is for sure, on six meters anything can happen, at any given moment!

There are many great resources to be found on the Internet about six meters, all sorts of different web sites, and several e-mail reflectors that you probably will want to check into, as I've only touched a little bit on it with this article. Goodness, many great books have been written and are readily available about six meters. They give all sorts of operating tips and techniques, better explain the different methods of propagation in some detail, offer a lot of suggestions and ideas for antennas and station setups, and much more. If you like what you've read so far, just wait until you read some of the professional's articles on six-meter operation! Not to mention what it's going to be like when you get on the air and actually start making some QSO's, snagging DX stations, and having a great time! Then you'll truly see why the six-meter band is called the "Magic Band".

Please plan on attending our October meeting and let’s have some six-meter fun.
73
Keith Mumaw (KI5VNL)
2024 President

VICE PRESIDENTS REPORT

AUGUST 2024 VP REPORT
SHARON MCEACHERN-KK5SM

VICE PRESIDENT'S REPORT

SEPTEMBER 2024

SHARON MCEACHERN-KK5SM

PART 2 OF 3

HISTORY OF HAM RADIO

1946-The military leaves our HF bands in stages, and hams gradually get their frequencies back, all except for 160 meters, which will be used for the LORAN Radio navigation system. The FCC creates the Tenth Call District (using the numeral -0-) and realigns the District boundaries. War surplus equipment finds its way into the ham market.

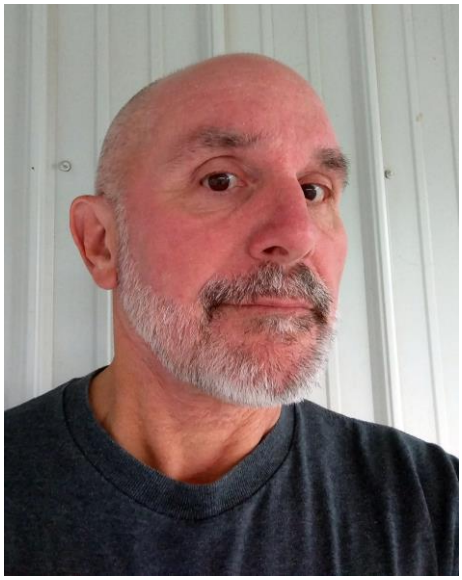
1947-The Atlantic City Conference--Amateurs lose the top 300 kc of 10 meters (29.7--30) and will lose 14.35--14.4 Mc on 20 meters. But they will gain a new band at 15 meters (21.0--21.45 Mc) in the future. To compensate hams for their loss, the FCC allows them to use the 11-meter band (26.96--27.23 Mc) on a shared basis with Industrial, Scientific & Medical devices. TVI is starting to become a problem--the ARRL determines that Ch 2 is very vulnerable to TVI & recommends it be eliminated, but the FCC removes Ch 1 instead. The Transistor is developed by Bell Labs.

1948-Single Sideband is fully described in the amateur publications. The FCC creates Class A & Class B CB radio between 460--470 Mc.

1951-The FCC completely reorganizes the amateur license system. The Class A, B, & C Licenses are replaced by the Advanced, General, & Conditional Class respectively. Three new license classes are created--the Amateur Extra, Novice & Technician. The Technician Class is created for experimentation, not communication, and has privileges only above 220 Mc. Novices are given limited HF CW subbands, 75 watts, and crystal control only. They may also use phone on 145--147 Mc. It is a 1 year, non-renewable license.

1952-The FCC allows phone operation on 40 meters, which had been CW only. The 15-meter band is opened. The Advanced Class is withdrawn from new applicants, although present holders can continue to renew, and the "exclusive" 75 & 20-meter phone bands are opened to Generals & Conditionals. Everyone, Conditional & above, has the same privileges.

1953-The FCC starts issuing "K" calls to amateurs in the 48 States due to the increased ham population.
1954-Depressed and broke from his patent fights with RCA over FM, Major Edwin Armstrong commits suicide. His wife continues the fight, winning the last battle in 1967, when the Supreme Court rules that Armstrong did indeed invent FM.
1955-Technicians are given 6-meter privileges to help populate the band & encourage experimentation. The ARRL & most hams oppose 2 meters for Technicians. Wayne Greene becomes editor of CQ magazine.
1956-1960--A gradual technical revolution on 2 fronts: Transistors find their way into the ham shack, first in power supplies, then audio sections, then receivers, and finally QRP transmitters.
But most equipment was still 100% tubes. Also, SSB is catching up on AM in terms of popularity. By the 1960's, SSB pulls ahead of AM.
1957-Sputnik, the first artificial satellite, is launched by the USSR. , copy it's beacon on 20 & 40 Mc.
1958-Explorer is launched by the US. Amateurs copy its signal on 108 Mc. The ham population is 160,000--3 times the 1946 total. The FCC has to issue "WA" calls in the 2nd & 6th call areas, as the "W" & "K" 1x3 prefixes have run out. Slow Scan TV is first described in QST. In September, amateurs lose their shared use of 11 meters, as Class D CB is born.
1959-The Geneva Conference held no major amateur changes. Technicians get the middle part of 2 meters (145-147 Mc), but not without some controversy over the purpose of the license. The FCC restates its "experimental, not communication" policy.
1960-Wayne Greene fired as CQ editor, forms 73 magazine.
1961-OSCAR I, the first amateur satellite, is launched. Thousands of Amateurs copy its 50 mw beacon on 144 Mc sending out ".... .."
1962-CONELRAD is replaced by the Emergency Broadcast System. Amateurs no longer have to monitor 640 or 1240 kc while operating their stations.
1963-The ARRL, responding to some complaints about Generals being allowed on 75 & 20 phone, proposes an "incentive licensing" system. Under the ARRL proposal, Generals & Conditionals would lose 75, 40, 20 & 15 meter phone privileges over a 2 year period. The Building Fund, to construct the ARRL Headquarters at 225 Main St., Newington, is in full swing.
The amateur population is over 200,000, but CB licenses now outnumber hams.
1964-A ham in the White House? Barry Goldwater, K7UGA/K3UIG is the Republican Candidate for President. (He is defeated). Herbert Hoover dies at the age of 90. As Secretary of Commerce in the 1920's, and President of the United States from 1929-1933, his strong support of amateur radio was invaluable. He lived long enough to see his son (Herbert Hoover, Jr, W6ZH) elected President of the ARRL.



DUNCAN BERRY
KG5NDO

SARAH RICHARDSON
KI5PZF

Fannin County Amateur Radio Club
Meeting Minutes
August 17, 2024, at the Bois d'Arc Creek Cowboy Church.
Recorded by Duncan Berry, KG5NDO

Keith Mumaw, KI5VNL, called the meeting to order at 9:03 AM. Duncan Berry, KG5NDO, lead the opening prayer and Darrell Brewer, KE5SHN lead pledge of allegiance.

Officer Reports

President's Report

-Club president, Keith Mumaw, KI5VNL praised the content and format of the July club newsletter. Thank you Dr. Durbin and all who contributed. It is an interesting and useful read. The club president's report is published on the club web page and emailed with last month's meeting minutes. There were no questions for or discussion of the president's report.

Vice-President's Report

-Sharon McEachern, KK5SM, asked for any comments on her report which was also published on the club web page and by email. **Correction**: Nominations for the annual club election are to be submitted to the club vice-president, not the club treasurer.

Treasurer's Report

-James Hunt, KI5DQ, was not present. His report is published in the July club newsletter. -Sharon McEachern, KK5SM, reviewed the club's account balances and expenditures to date. The club checking account had a balance of $ 3065.74 and a savings account balance was $225.31. The club had no deposits and two expenditures: the annual USPS box rental for $72.00, and, ten technician class study books for $ 162.10. There will be some expenses next month. The tags for the club trailers are up for renewal. Mark Hetherington, KF5KUW, made a motion to accept the club treasurer's report and the motion was seconded by Keith Mumaw, KI5VNL. The treasurer's report was unanimously approved.

Secretary's Report

-The club secretary Sarah Richardson, KI5PZF is away for July and August. Duncan Berry, KG5NDO volunteered to take the meeting minutes for July and August. The minutes for last month's meeting are published on the club web page and were emailed to club members. Mark Hetherington, KF5KUW, made a motion to accept the club secretary's report and the motion was seconded by Keith Mumaw, KI5VNL. The secretary's report was unanimously approved.

Trustee's Report

-Repeater class #2 is cancelled this week and will be rescheduled. Repeater class #1 met at the Ivanhoe repeater on Saturday, August 17th, and did some cleaning, sorting, labeling, and organizing. The class will meet at the repeater again to continue reorganizing and labeling cords, cleaning, and learning how to maintain the repeater. Ralf Borgardt, KI5LVS, volunteered to create a repeater visit/maintenance checklist and acquire a clipboard to hang it on. He also photo-documented the visit and shared both items in a PDF attachment on the group email. Thank you!
- Mike Durbin, K5MJD, found a Yaesu repeater controller on sale for $900. He suggested that the club acquire the controller as a backup or set up mobile repeater station on the white club trailer. The repeater can be assembled by the repeater classes at "the man cave". After discussion, Keith Mumaw, KI5VNL, made a motion to spend up to $900 to acquire the repeater controller, and James Yost, KA8FRK, seconded the motion. The motion was unanimously approved.
- There was a table load of miscellaneous radio parts, antennas, and connectors. Mike said take what you want after the meeting and make a donation to the club. Whatever is not taken will go in the dumpster.

Old Business

-Keith Mumaw will be net control for August unless there are other club members who want to be net control. We will need net control operators for September. If you have not been a net control operator, try it out.
- Duncan Berry, KG5NDO reported that a grant application for a marine radar was submitted and in review with the ARRL. This is an ARRL Foundation Club Grant Application 2024 for $10,000 for the radar system and display. We will be notified about the grant in 90 days after the grant was submitted. (November)

Review of the upcoming calendar of events

- The September meeting is September 21st, 2024. We will meet at the Sam Rayburn House before participating in the Farm Heritage Day event. The blue club trailer will be located in the field and we will be broadcasting like a POTA event.
-Bonham Bike Rally: October 5th, 2024. The club will participate as we did last year but there will be some changes.
-October meeting: October 19th, 2024. Club meeting and Go-box event. At the FM 897 Lake Bois d'Arc Boat Ramp. This location may change.
-Tuesday November 5th, Election Day. –Possible emergency communications participation. (TBA)
-November 16, 2024: Club meeting at Bois d'Arc Creek Cowboy Church. Officer nominations for next year will be accepted.
-November 23, 2024: Spirit of Giving at the First Presbyterian Church in Bonham. The club will be providing hot dogs and drinks. The food will either be provided by a corporate sponsor or by the club.
-December 21st, 2024: Club meeting, annual Christmas party, and club elections. At Dr. Durbin's – see new business.

New Business

-Fannin county emergency management ID's are available. Contact Jeff Jones, KI5JSJ, for more information.
-The September club meeting will be at the Sam Rayburn House. Plan to be there at 8 AM to set up. Meeting at 9 AM and the event begins at 10 AM.
-Anticipate participation for communications on Election Day. Mike Durbin reminded us to add the cross band repeater frequency to our equipment.
-The Autumn in Bonham route map and signup for rest stops is out Mark Hetherington, KF5KUW, is coordinating rest stop communications volunteers. The map and signup was published as a PDF in an email to the club. The routes have been changed to eliminate most of the dangerous parts of route 78. We will need to schedule and conduct a communications test for this event. Sharon McEachern,

KK5SM, expressed concern over the lack of safety equipment and signage available to communications volunteers during last year's event. Mark Hetherington, KF5KUW, said that there will be better signage and the TX DOT will provide electronic signs this year. We will make sure that everybody participating in the event has proper vests and other safety gear. Keith Mumaw, KI5VNL suggested that the club provide safety vests and that this would be an excellent opportunity to have a backup repeater available.
We may not be doing live stream video feed this year but lots of pictures to be shared will be appreciated. Mark will need a volunteer to stand in for race committee meetings at the Bonham Chamber of Commerce. This will be Friday night in the last three weeks of October. Duncan Berry, KG5NDO, volunteered to stand in for Mark.
- A Winlink training module is available for download. Contact Keith Mumaw, KI5VNL, for more information.
-November club meeting: nominations for club officers are submitted to Sharon McEachern, KK5SM.
-The December meeting and club Christmas party will be at Dr. Durbin's. After some discussion the location was changed from the Windom Feed Sack to the "man cave". This will be a potluck event. Mike Lindsey, KD5UNY made a motion to change the location of the meeting and Christmas Party from the Windom Feed Sack to DR. Durbin's. Sharon McEachern, KK5SM, seconded the motion. The motion passed with a unanimous vote.
-Keith Mumaw expressed concerns about access and operations at the South tower. Concerning our agreement to operate at the tower, Keith Mumaw, KI5VNL, will speak to Troy Hudson.

Adjournment

Keith Mumaw, KI5VNL, made a motion to adjourn, Chris "Fuzzy" Vaughn, W5FZY, seconded the motion.

NOW MY USUAL FUN/INFO STUFF
"I AM COMPLETELY OPERATIONAL AND ALL MY CIRCUITS ARE OPERATING NORMALLY"

TRUSTEE'S REPORT
de K5MJD

SOME HANDY THING TO REMEMBER WHEN WORKING ON REPEATERS

Equivalent isotropic radiated power

EIRP, is the total radiated power from a transmitter antenna times the numerical directivity of the antenna in the direction of the receiver, or the power delivered to the antenna times the antenna numerical gain.

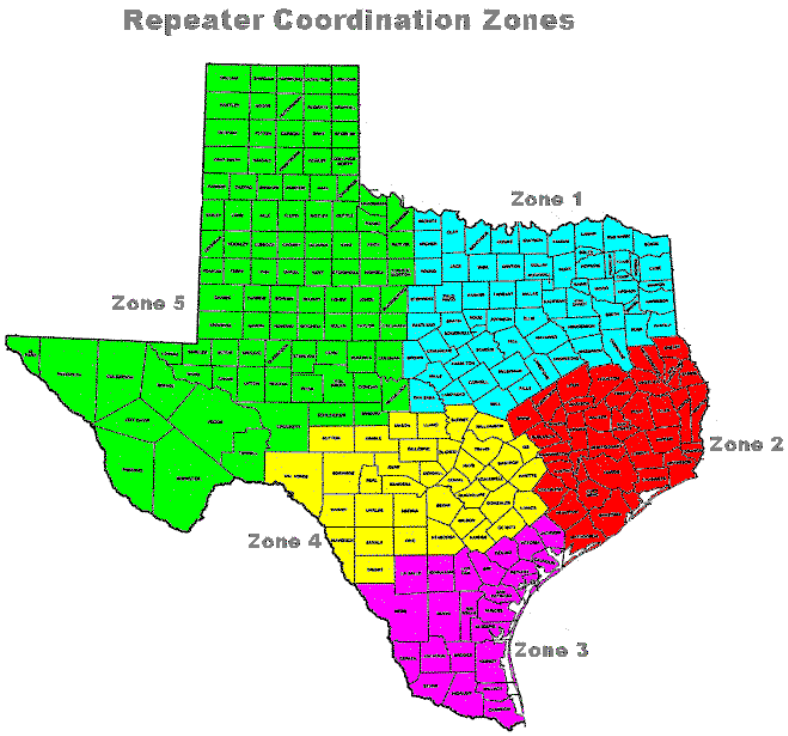
Repeater Coordination

The purpose of a repeater/frequency coordination entity is to try to keep interference between repeaters and their users to a minimum.
According to Wikipedia, repeater coordination is not required by the Federal Communications Commission (FCC), nor does the FCC regulate, certify, or otherwise regulate frequency coordination.
Amateur Radio Repeater Coordinators or coordination groups are all volunteers and have no legal authority to assume jurisdictional or regional control in any area where the Federal Communications Commission regulates the Amateur Radio Service. The United States Code of Federal Regulations Title 47 CFR, Part 97, which are the laws in which the Amateur Radio Service is regulated clearly states the definition of Frequency Coordinator.
The purpose of coordinating a repeater or frequency is to reduce harmful interference to other fixed operations. Coordinating a repeater or frequency with other fixed operations demonstrates good engineering and amateur practice.

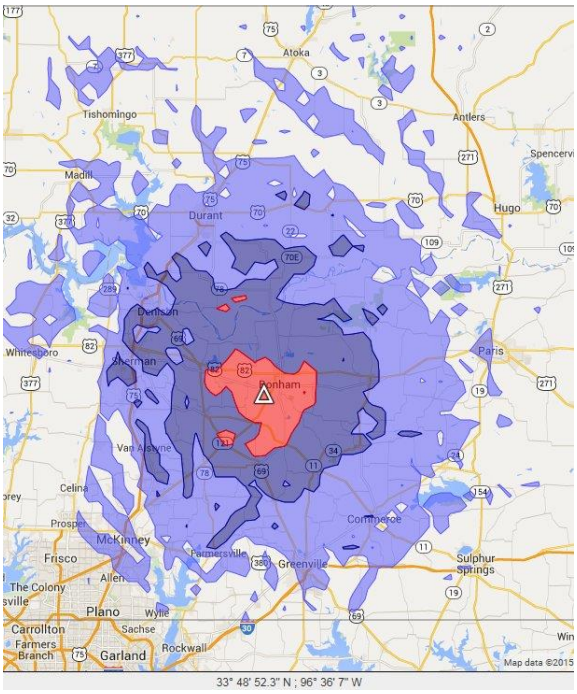
INTERESTING INFO ABOUT THE COORDINATION IN TEXAS
HERE IS THE INFO ON PERCENTAGE OF COORDINATED STATIONS THAT ARE UP TO DATE *WE ARE UP TO DATE!!*

Repeater Report

Total :		Zone 1 :	Zone 2 :	Zone 3 :	Zone 4 :	Zone 5 :
2168		716 33%	425 20%	122 6%	413 19%	418 19%
1240 - 1300 MHz :	22 1%	12 2%	1 0%	0 0%	7 2%	2 0%
902 - 928 MHz :	54 2%	19 3%	6 1%	2 2%	21 5%	6 1%
420 - 450 MHz :	1144 53%	381 53%	238 56%	60 49%	218 53%	247 59%
222 - 225 MHz :	108 5%	58 8%	19 4%	3 2%	19 5%	9 2%
144 - 148 MHz :	719 33%	230 32%	151 36%	55 45%	138 33%	145 35%
50 - 54 MHz :	40 2%	14 2%	9 2%	2 2%	8 2%	7 2%
29.6 - 29.7 MHz :	5 0%	1 0%	1 0%	0 0%	2 0%	1 0%
Renewed :	1083 50%	326 46%	308 72%	48 39%	245 59%	156 37%
Not renewed :	1085 50%	390 54%	117 28%	74 61%	168 41%	262 63%



PROJECTED COVERAGE OF 145.47 LIGHT BLUE IS TO MOBILES



What is CTCSS encode and decode?

A CTCSS is a 'Tone' sent along with your voice when you transmit. **The transmit tone is referred to as the Encode tone. The receive tone is referred to as the Decode tone**. It is Sub-Audible.

What is CTCSS used for?

In telecommunications, Continuous Tone-Coded Squelch System or CTCSS is one type of in-band signaling that is used **to reduce the annoyance of listening to other users on a shared two-way radio communication channel**. It is sometimes referred to as tone squelch or PL for Private Line, a trademark of Motorola.