



President-Mark Hetherington - KF5KUW Vice-President-James Hunt - KI5DQ

Secretary-Sarah Richardson – KI5PZF Treasurer-Sharon McEachern - KI5FHN

Trustee-Dr. Mike Durbin - K5MJD

Fannin County Amateur Radio Club K5FRC

Volume 2 – FEBRUARY 2023

PRESIDENTS CORNER

President-Mark Hetherington - KF5KUW

President’s Report – February 2023

We are now into what is usually our coldest and worst weather month, and yet if we look at the thermometer, we have been in the 60’s. Last year we had that monster of an ice storm the first week in February. So what does that mean for us amateur radio operators? We should be repairing, renovating, and rejuvenating our outdoor antennas. And for some of us, that might also mean building a new antenna, or buying a commercial one, and decide where we want to install it.

At Winter Field Day, we had intentions of building some dual band copper pipe J-Pole antennas, but we never seemed to find the time to sit down and make it happen. I had all my pieces and parts in my truck, ready to be shaped and soldered into a new portable field antenna. But we had so many visitors, guests, and friends attending the WFD event that socializing took priority. In fact, we had over 25 non club guests attending, with several becoming much more interested in amateur radio before they left. Several asked about upcoming classes, which we need to get started.

Speaking of Winter Field Day, we had a great turnout, a fantastic cook-off, great mingling, and we even played radio! In fact, James and I observed that we still had all 3 radios working at the same time all the way up to the end of the event (1:00 pm Sunday). Now this didn’t mean we were running all three at the same time the entire WFD, although there were some periods that we did have them all going at once. But we started later than we had planned, as deciding which antennas we were going to use, where we would place them, and actually getting them operational, took us a lot longer than we had planned for. In addition, I was having some issues getting all the logging computers linked to the same database, which after I finally managed to make this work (thanks Mike K5MJD), we then typed in or imported the contacts from the separate laptops, and we were off and running.

Band conditions were not as good during WFD as they have been for the past couple of weeks, and our number of contacts reflected this reduced propagation. During the

event, we were able to see in real time what states and provinces we were making contacts with, as Mike K5MJD had set up a projector and laptop to show the map on a large screen visible to everyone in the Pavilion. Thanks Mike, this was an excellent idea you had. Mike also had his RV StarLink internet hooked up and operational for us, which was a fantastic treat this year for so many of us who don't have adequate cell phone coverage in that part of the county. I will have the total score that I believe we will earn ready to submit to the WFD organization, and I will be sending out a complete report soon through our Fanninhams group email.

We had some great things happening during our WFD event. The Chili and Soup Cook-Off was received very well again this year, and we had eight entries. Our First Prize winner was Ruth Brown, KI5NTK. Congratulations Ruth! By the way, for those who didn't know, Ruth was also one of the winners in last year's cook-off. Second place went to yours truly, which I was pleasantly surprised with all the excellent choices that were there. And after the awards were handed out, we all enjoyed eating the entries, some of us drizzling it over the hotdogs and buns the club provided. And the selection of side dishes and desserts was delicious, and we had many things to choose from. The cornbread went great with the chili, all the different varieties of chips, but the desserts rounded out our meals scrumptiously. Ralf, you really need to write down the name of your wife's dessert, since I still can't remember what it was called, but it tasted fantastic!

And let's not forget to reach out to all our missing club members, past and present, and see if there is some radio equipment or antenna that they might need some help with. And for those of you that might, forget your pride as we are all one big family willing to help one another out. Allow us to enjoy doing this.

Everybody stay warm and dry, and let's look forward to our February club meeting.

TREASURES REPORT

Treasurer's Report

Currently, the club has a balance of \$4300.68 in its checking account and a balance of \$223.98 in its savings account. Since our last club meeting, the club has had the following deposits and expenditures:

Deposit of \$960.50 for club dues and \$43.27 in an item of expenditure to purchase trophies for the chili/soup cookoff.

Reminder: If you need to renew your ARRL membership, you can do so through the club and the club will receive a commission from ARRL. I will have the forms at our next meeting.

A current roster will be sent out prior to our next meeting.

73's,
Sharon
KI5FHN

VICE PRESIDENT CORNER

07February 2023
Vice-President
James Hunt - KI5DQ

Spring Time safety tips and awareness.

The National Weather Service (NWS) has begun the NWS Fort Worth SKYWARN Program.

All is welcome - the beginner to the veteran. New material is presented yearly.

The training is available in-person and virtual.

2023 SKYWARN Schedule

<https://www.weather.gov/fwd/skywarnmap>

The K5FRC 145.470- and 442.525+ repeaters have SKYWARN nets during inclement weather events. They have direct link to the NWS.

TECHNICIAN
COURSE INFO
Coming soon

K5FRC

REPEATERS

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

ECHOLINK 143903; WIRES

21151; 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;

FCARC meets every third Saturday at 9:00 AM at the BOIS D' 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

Fannin County Amateur Radio Club
Regular Meeting – 21 January 2023
Bois d'Arc Cowboy Church, Edhube, Texas

President Mark Hetherington called meeting to order at 0903 (9:03 am) and led the Pledge of Allegiance.

Jessie Brown offered the prayer.

Winter Field Day:

Event:

Mark opened discussion on the upcoming Winter Field Day. The club will be at the Lake Bonham Pavilion. Setup for contacts will be done before the hours of operation for the event. Hours for contact operations will be from 1300 (1:00 pm) Saturday 28 Jan to 1300 (1:00 pm) Sunday 29 Jan with some members staying overnight. There will be three (3) radios operating with the club call letters. Logging software will be done with pc/laptop at each radio. We will be using WFD software, and Dr. Mike Durbin will give a tutorial before beginning.

Chili Cookoff:

There will be hotdogs and buns provided by the club, and the chili to go on these after the judging for those interested. The Cookoff has drawn interest from some in the community and is open to everyone. Rebecca has gotten the trophy.

Discussion of details and time followed.

Radio On The Lake:

The event was so much fun last year, the club opted to do it again with a date of 6 May 2023 at Lake Texoma Treasure Island. VP James Hunt will do the registration for the ARRL Marketing. It will be a one day event.

Other Events:

Radio In The Park: Bonham State Park has two days that are free entry – 15 April and 30 September with the hours being 0900 to 1300 (9:00 am – 1:00 pm)

Fannin Co. Master Gardener EXPO is 25 March at the Multi Purpose Complex. Option to have a Radio in the Park there with an information booth inside. Sarah Richardson made the motion to do this event and Rebecca Bruner seconded. Sarah will get the form for the event.

Coffee Mill Lake will be the site of one in October.

Other Radio In The Park sites to check on will be Leonard, Honey Grove, Windom. Sarah will check on any official requirements for us to have an event there.

The Preparedness Fair that the LDS holds annually is another event. Mark will share details as it is firmed up.

Other events will be the Bike Rally 7 October, Fannin County Fair in October, and the Spirit of Giving in November.

The club has purchased the radio equipment from Danny Loyd's wife, and she has donated his tower and all antennas on it to the club. We will need to remove these if we are going to accept this offer. The main HF radio will become the club's HF radio and will also be used at Winter Field Day.

December meeting and Christmas party for 2022 was a huge success. After some discussion the club wants us to consider doing this again with the Windom Feed Sack location and buffet.

The February meeting will also include a presentation on "What is FT-8?"

Vice President James Hunt, mentioned the ARRL Event for contacts on 6 meter, 2 meter, 70 centimeter, 23 centimeter and above with CW, digital and phone. Classes for Technician and General are coming up based on interest. Dr. Mike Durbin is going to do the Extra class. The classes will be Zoom.

Treasurer Sharon McEachern shared that in addition to what's in the newsletter, the club liability and equipment insurance is paid. The new equipment was added. In addition, President Mark Hetherington shared that when dues with ARRL are renewed through the club, the organization will receive part of that amount back.

New business:

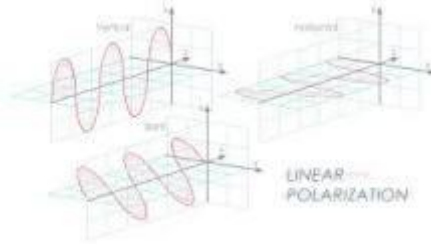
During recent bad weather, calls to check up on members were done. This being a positive idea, discussion of phone tree to check up on members. Bill Purcell made the motion to set up a phone tree, based on the grid system location, for emergency purposes only. Linda Brinlee seconded. Further discussion included Jennifer asking to forward to her storm shelter information so it can be registered with the Emergency Preparedness office. Send the information to Jennifer Peaco of your shelter location.

Secretary-Sarah Richardson – KI5PZF

Trustees' fun stuff and report
Simple report All systems are up and operational
NOW FUN STUFF

POLARIZATION WHAT THE HECK DOES THAT MEAN?

What is polarization in antenna theory?



The polarization of an antenna is loosely defined as **the direction of the electromagnetic fields produced by the antenna as energy radiates away from it**. These directional fields determine the direction in which the energy moves away from or is received by an antenna. For the electromagnetic wave the polarization is effectively the plane in which the electric wave vibrates. This is important when looking at antennas because **they are sensitive to polarisation, and generally only receive or transmit a signal with a particular polarization**.

BEFORE ANY ENGLISH TEACHERS GET TOO EXCITED, POLARIZATION IS SPELLED WITH A Z OR AN S. SO I USED BOTH IN THIS ARTICLE SO AS NOT TO BE PREJUDICE AND TO CAUSE SOME DISCUSSION ABOUT MY SPELLING CAPABILITIES.

Different types of electromagnetic wave polarisation propagate in slightly different ways under some circumstances. This means that for some forms of broadcasting, radio communications or for some wireless systems, different forms of polarisation may be used. In general the advantages and disadvantages of the various forms of polarisation are relatively subtle, but for some forms of broadcasting, wireless links or for radio communications or mobile communications systems these small differences can make a large difference.

- **Linear *polarisation*:** Linear polarisation is the most common form of antenna polarisation. It is characterized by the fact that all of the radiation is in one plane - hence the term linear:
 - ***Horizontal polarisation:*** This form of antenna polarisation has horizontal elements. It picks up and radiates horizontally polarized signals, i.e. electromagnetic waves with the electric field in the horizontal plane.
 - ***Vertical polarisation:*** This form of antenna is typified by the vertical elements within the antenna. It could be a single vertical element. One of the reasons for using vertical polarisation is that antennas comprising of a single vertical element can radiate equally around it in the horizontal plane. Typically, vertically polarised antennas have what is termed a low angle of radiation enabling a large proportion of their power to be radiated at an angle close to the earth's surface. Vertically polarised antennas are also very convenient for use with automobiles.
 - ***Slant polarisation:*** This is a form of radio antenna polarisation that is at an angle to the horizontal or vertical planes. In this way both vertical and horizontally polarized antennas are able to receive the signal.
 - ***Circular polarisation:*** This has a number of benefits for areas such as satellite applications where it helps overcome the effects of propagation anomalies, ground reflections and the effects of the spin that occur on many satellites. Circular polarisation is a little more difficult to visualize than linear polarisation. However, it can be imagined by visualizing a signal propagating from an RF antenna

that is rotating. The tip of the electric field vector will then be seen to trace out a helix or corkscrew as it travels away from the antenna.

Right hand circular polarisation: In this form of polarisation the vector rotates in a right-handed fashion.

Left hand circular polarisation : In this form of polarisation the vector rotates in a left handed fashion, i.e. opposite to right handed.

- ***Mixed polarisation:*** Another form of polarisation is known as elliptical polarisation. It occurs when there is a mix of linear and circular polarisation. This can be visualized as before by the tip of the electric field vector tracing out an elliptically shaped corkscrew.

It is possible for linearly polarised antennas to receive circularly polarised signals and vice versa. The strength will be equal whether the linearly polarised antenna is mounted vertically, horizontally or in any other plane but directed towards the arriving signal.

There will be some degradation because the signal level will be 3 dB less than if a circularly polarised antenna of the same sense was used. The same situation exists when a circularly polarised antenna receives a linearly polarised signal.

So now to answer a few questions I am sure you hams are asking.

The following statements will cause an uproar, I am sure. Just like The Ford vs. The obviously superior Chevrolet discussions. So if you expected a definite answer there isn't one that fits every situation.

The Answer?

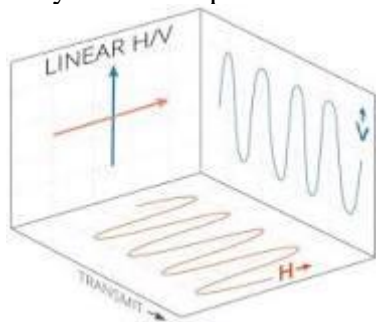
If cost is your primary consideration, the horizontal dipole is a great choice. All you need is wire, insulators, and some support rope to build this simple antenna. Just be sure you have two supports, such as trees or poles to hang the dipole. Remember, higher is better. If you only have one support, you can droop the ends into an inverted-V configuration, which can also save space. Be sure the ends of your inverted-V are at least eight feet above ground so they aren't a danger to humans and pets.

DX chasers should consider the vertical. They don't take up much space, many are less than 30 feet high, and most don't require supports other than a few guy lines. Vertical antennas naturally have a low angle of radiation, meaning you'll have a good chance of making worldwide contacts. The downside is that they can cost several hundreds of dollars, require more time to assemble, and need radials.

If you're having trouble deciding, why not use both varieties? I never considered my antenna farm complete until I had both vertical and horizontal antenna options on all HF bands. Vertically-polarized antennas and horizontally-polarized antennas also complement each other very well. Where one works poorly, the other may perform well. You might be surprised at what the vertical can pull in that the dipole can't and vice versa. With changing propagation, it's a winning combination for maximizing contacts.

KNOWING the question; here is the answer why we would use Horizontal vs. Vertical. This is true for VHF and UHF as well but polarization at higher frequencies becomes more critical.

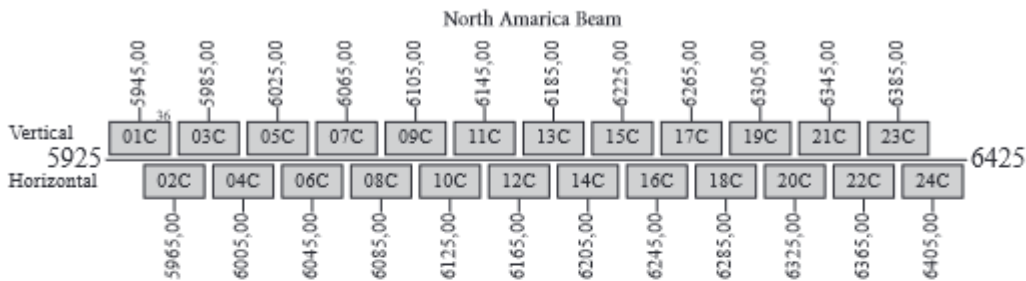
Why is vertical polarization better than horizontal polarization?



In general, **ground-wave propagation is better with a vertically polarized antenna**, while sky-wave performance is better with horizontal polarization. Circular polarization is widely used with satellites as their orientation with respect to the ground station and other satellites is constantly changing.

A good example of how polarization can be a friend would be commercial satellite communications (geostationary) can use the exact frequency twice doubling its bandwidth, simply by using opposite polarities on the same frequency. Typical isolation between say vertical and horizontal polarization and microwave frequencies can be as much as 35 dB. Even with polarization isolation offsetting the frequency slightly gives even better isolation. This technique allows the 500 MHz. allocated bandwidth to be doubled to 1GHz.

Uplink



Downlink

