



The Bullsheet

The Official News Bulletin of
The Texas DX Society
An ARRL Affiliated Club

The Texas DX Society, Houston TX K5DX@tdxs.net November 2023

The November 16, 2023 TDXS monthly meeting will be held at 7 p.m. via ZOOM. There will be a brief discussion of the TDXS officer situation, followed by a really interesting presentation by Ed Gerber W5GCX on locating and building a station in a low RFI setting near Round Top, TX. He will cover choosing a location, laying out the utilities, antenna selection, installing a tower, mounting the antenna, and more. He has 43 slides, so this will indeed be a comprehensive presentation. Attached is an outline of the talk provided by Ed.

Editor's Note by Allen Brier N5XZ

Happy November!

Cooler weather is good for more antenna work, so get to it! (that includes me too, right??). I have some work that needs to be done so I better get off my duff. However, the rain has put a bit of a damper on things, but we certainly need it!

I've been a bit less active lately because I started a new job...back in the engineering world. Now I just hope I can remember how to do what I haven't done for 10 years.

Thank you to Tuna, K2TNO for sending me the nice article on building a 2m indoor antenna and to Robie, AJ4F for his article "The End is Near!". I would really like to see more articles from members...please send them to make the BS more interesting.

And how about those great TDXS scores in CQ WW SSB? Big congrats to Dave K5GN for putting in another excellent effort...I don't know how you do it Dave. I just don't have it in me (as much as I wish I did!).

73/161, Allen N5XZ

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TDXS Meeting Minutes by Doug Seyler W9LCQ

Date: October 19, 2023

Location: ZOOM Virtual Meeting

The October TDXS meeting was held over ZOOM. There were 11 participants: Doug W9LCQ, Robie AJ4F, Kim K5TU, Rick K5GZR, Chris KG5BBF, Jim N5DTT, Allen N5XZ, Jerry N5EKO, Dale KG5U, Jerry K9GEM, Bill K9HZ.

Agenda:

Continuing discussion of the future direction of TDXS

Discussion of the TDXS club results for the recent Texas QSO Party.

5 more TDXS participants vs 2022

200,000 more points vs 2022 but still far behind CTDXCC

Program - Doug W9LCQ demo of HamClock, a Raspberry Pi-based, GeoChron-like display of a wealth of ham radio-related information. This program will run on any generation of Raspberry Pi (even a \$15 Pi Zero 2 W) and display in any HDMI monitor. It looks great on a 32 inch, 4k monitor as well as a 7" official Raspberry Pi display.

The video from this meeting is available on the TDXS YouTube channel (<https://youtu.be/wlm3VIJR9Dc>)

Submitted November 11, 2023

Doug Seyler W9LCQ

TDXS Secretary



Contest Chairman Report—by Jim Burrough N5DTT

November

- 4 ARRL Sweepstakes, CW
- 11 WAE DX Contest RTTY
- 10-10 International Fall Digital Contest
- JIDX Phone Contest
- OK/OM DX Contests, CW
- 18 ARRL Sweepstakes, SSB
- 25 CQ WW DX Contest, CW

December

- 1 ARRL 160-Meter Contest
- 9 ARRL 10-Meter Contest
- 15 Russian 160-Meter Contest
- 16 ARRL Rookie Roundup
- 30 RAC Winter Contest
- YOTA Contest

TDXS members participated in several contests in October. Here is their score information as it was found in the 3830scores.com website:

California QSO Party 2023 Oct 7

SO HP

Call	Remote	CW Qs	Ph Qs	Mults	Op Time	Score	Club
K5TIA		250	0	51	12	38,250	TDXS
W5GCX		76	82	48		21,552	TDXS

SO LP

Call	Remote	CW Qs	Ph Qs	Mults	Op Time	Score	Club
K5GQ		174	0	522	5:19	24,012	TDXS
N5DTT		59	24	40	8	9,000	TDXS

SO(A) HP

Call	Remote	CW Qs	Ph Qs	Mults	Op Time	Score	Club
N5EKO		224	83	57		47,766	TDXS
AF5J		213	0	52	12:50	33,228	TDXS



Contest Chairman Report—by Jim Burrough N5DTT

Nevada QSO Party 2023 Oct 14

SOCW HP

Call	Remote	CW Qs	Ph Qs	Dig Qs	Mults	Op Time	Score	Club
AF5J		2	0	0	2	:15	12	TDXS
K5TIA		3	0	0	3	1	12	TDXS

SOMixed HP

Call	Remote	CW Qs	Ph Qs	Dig Qs	Mults	Op Time	Score	Club
N5EKO		2	6	0	8	144	TDXS	

Arizona QSO Party 2023 Oct 14

SOCW HP

Call	Remote	CW Qs	Ph Qs	CW Mults	Ph Mults	Op Time	Score	Club
K5TIA		30	0	17	0	8	1,020	TDXS
AF5J		21	0	15	0	1:40	730	TDXS

SOMixed HP

Call	Remote	CW Qs	Ph Qs	CW Mults	Ph Mults	Op Time	Score	Club
N5EKO		23	11	13	10		1,311	TDXS

South Dakota QSO Party 2023 Oct 14

SO FixedCW HP

Call	Remote	CW Qs	Ph Qs	Mults	Op Time	Score	Club
AF5J		4	0	3	:40	124	TDXS
K5TIA		3	0	2	1	12	TDXS

SO FixedMixed HP

Call	Remote	CW Qs	Ph Qs	Mults	Op Time	Score	Club
N5EKO		4	12	8		160	TDXS



Contest Chairman Report—by Jim Burrough N5DTT

Pennsylvania QSO Party 2023 Oct 14

SOCW HP

Call	Remote	CW Qs	Ph Qs	Mults	Op Time	Score	Club
K5TIA		67	0	27	12	3,618	TDXS
AF5J		50	0	23	5:40	2,500	TDXS

SOMixed HP

Call	Remote	CW Qs	Ph Qs	Mults	Op Time	Score	Club
N5EKO		35	16	26		2,236	TDXS

Worked All Germany Contest 2023 Oct 21

SO CW HP

Call	Remote	CW Qs	SSB Qs	Mults	Op Time	Score	Club
W5GCX		51	0	24		3,672	TDXS

New York QSO Party 2023 Oct 21

SOCW HP

Call	Remote	CW Qs	Ph Qs	Dig Qs	Mults	Op Time	Score	Club
AF5J		110	0	0	30	6:50	6,600	TDXS
K5TIA		71	0	0	24	8	3,408	TDXS

SOMixed HP

Call	Remote	CW Qs	Ph Qs	Dig Qs	Mults	Op Time	Score	Club
W5GCX		56	8	0	30		3,600	TDXS

Illinois QSO Party 2023 Oct 22

Fixed HP

Call	Remote	CW-Dig Qs	Ph Qs	Mults	Op Time	Score	Club
AF5J		127	0	59	7:52	14,986	TDXS
N5EKO		84	8	51		8,976	TDXS



Contest Chairman Report—by Jim Burrough N5DTT

Stew Perry Topband Challenge 2023

Single Op HP

Call	Remote	QSOs	Op Time	Score	Club
K5TIA		38	6	138	TDXS

CQ Worldwide DX Contest, SSB 2023 Oct 28

SO(A)AB HP

Call	Remote	QSOs	Zones	Countries	Op Time	Score	Club
K5TIA		334	30	92	17	213,724	TDXS

SOAB HP

Call	Remote	QSOs	Zones	Countries	Op Time	Score	Club
K5GN(@W5KU)		3426	137	435	43	4,687,540	TDXS
W5GCX		682	90	270	17	699,120	TDXS
WT4DX		210	47	130	9:45	103,545	TDXS
K5TU		146	33	84	4.2	50,544	TDXS

SOAB Classic HP

Call	Remote	QSOs	Zones	Countries	Op Time	Score	Club
K5TU		146	33	84	4.2	50,544	TDXS

SOAB Classic LP

Call	Remote	QSOs	Zones	Countries	Op Time	Score	Club
NE5B		142	52	83		48,060	TDXS

SOSB10 Classic LP

Call	Remote	QSOs	Zones	Countries	Op Time	Score	Club
N5DTT		87	18	45	8	15,183	TDXS

Have a good month, contesting as much as you have the time for.

Jim, N5DTT



Solar maximum will arrive sooner and last longer than previously expected, say scientists—from Space.com

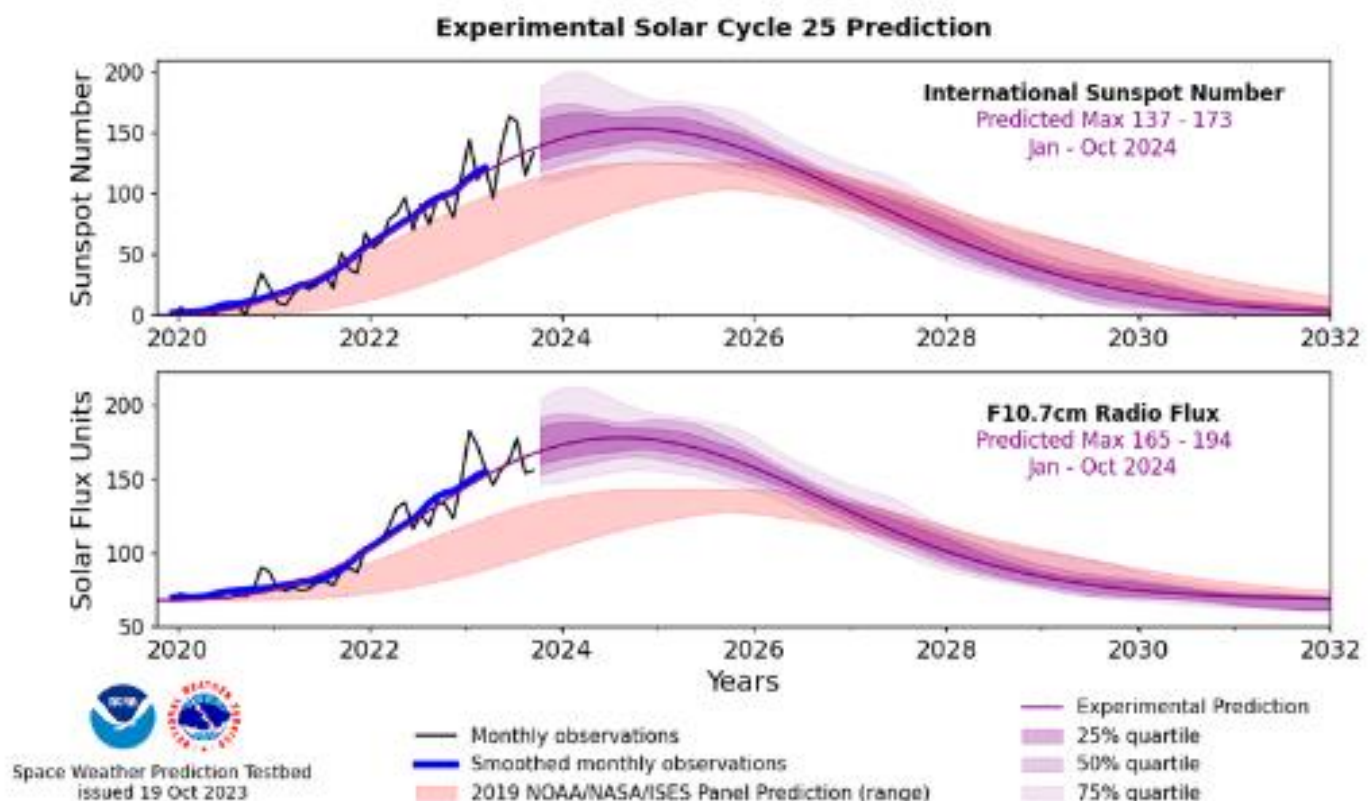
The sun will reach the peak of its current activity cycle in 2024, one year earlier than previous estimates, according to experts at NOAA's Space Weather Prediction Center (SWPC).

The revised prediction now places Solar Cycle 25's peak of activity known as "solar maximum" between January and October 2024 according to a NOAA statement. The peak will be earlier, stronger and last longer than estimates made in 2019.

The solar cycle describes an approximately 11-year period of solar activity driven by the sun's magnetic field and indicated by the frequency and intensity of visible sunspots on the surface.

Predictions on when solar maximum will occur are based on long-term historical records of sunspot numbers, advanced statistics and models of the solar dynamo — the flow of hot, ionized gases within the sun that generate our star's magnetic field which in turn drives the solar cycle.

"We expect that our new experimental forecast will be much more accurate than the 2019 panel prediction and, unlike previous solar cycle predictions, it will be continuously updated on a monthly basis as new sunspot observations become available," solar scientist Mark Miesch said in the NOAA statement. "It's a pretty significant change."



Solar maximum will arrive sooner and last longer than previously expected, say scientists—from Space.com

The revised prediction is good news for eclipse chasers as the total solar eclipse on April 8, 2024 will occur near the solar maximum. During totality, when the moon completely obscures the sun's disk, the sun's outer atmosphere (known as the corona) is visible to observers. During heightened solar activity, the corona is very active and eagle-eyed observers may be able to see solar prominences — gigantic loops of plasma extending outward from the sun — appear as bright pink spots at the sun's edges.

Accurate predictions of solar activity are crucial as geomagnetic storms triggered by plasma outbursts known as coronal mass ejections can affect electrical grids, GPS signals, drag satellites out of orbit and pose a radiation risk to airline workers and astronauts. Advanced warning of space weather events can help industries implement safeguarding procedures to reduce the risk to both their equipment and workers.

"We can't ignore space weather, but we can take appropriate measures to protect ourselves," NASA says.

We are of course not without our own natural protection — Earth's magnetic field.

When energetic particles and magnetic fields are released from the sun during events such as solar flares and coronal mass ejections, Earth can sometimes find itself within the line of fire.

When this happens, our protective magnetic "bubble" known as the magnetosphere repels harmful energy away from Earth and traps it in zones called the Van Allen radiation belts. These donut-shaped belts of radiation can swell when the sun's activity increases.

But our protective shield is not invincible.

During particularly strong space weather events — which are more common during solar maximum — Earth's magnetic field is disturbed and geomagnetic storms can penetrate the magnetosphere and lead to widespread radio and power blackouts as well as endangering astronauts and Earth-orbiting satellites. One notable example occurred in 1989 when a CME accompanied a solar flare and plunged the entire province of Quebec, Canada into an electrical blackout that lasted around 12 hours according to NASA.

However, not all magnetosphere interferences are destructive, and one disturbance in particular gives rise to a remarkable show — auroras. The phenomenon is known as the northern lights (aurora borealis) in the Northern Hemisphere and the southern lights (aurora australis) in the Southern Hemisphere and is triggered by energetic particles being redirected toward Earth's poles and colliding with atoms of oxygen and nitrogen in Earth's atmosphere.

Solar activity can have a large impact on our technological world which is why advanced notice and accurate predictions are key to mitigating potential damage and of course, give aurora chasers the information they need to capture incredible shows!

A 2 Meter Vertical Antenna for Inside Use—by “Tuna” K2TNO

Here’s an inexpensive 144 MHz antenna for inside use. It’s based upon a novel outdoor version published in QST in July, 2009 by W6NBC. This one is so light it can be suspended from the ceiling with a hook and a rubber band. Construction takes about an hour. SWR is under 1.5:1 across the band. As with the original outdoor version, it can be scaled easily for 220 or 440 MHz.

INTRODUCTION

I revived my old mobile VHF FM transceiver for use monitoring local repeaters. I looked in the ARRL literature for a suitable small-format VHF antenna that could be mounted indoors. The coaxial dipole cited above consisted of a ¼-wave coaxial matching section created from a length of threaded household lamp pipe and a steel mobile whip.

I opted to adapt this antenna design, but –since it was for interior use only- I planned to suspend the antenna from my shack’s ceiling. So, I eliminated the external weather-proofing and base-mounting parts of the original antenna. Instead, I made the element out of 14-gauge plastic-insulated wire, a 19” length of threaded lamp pipe, a male coax fitting and some parts from the hardware store.

PARTS LIST

- 1 ea. 19” length of threaded lamp pipe, [1/8” NPS thread]
- 1 ea. 3/4” dia. round brass lamp locknut [1/8” NPS thread]
- 1 ea. lamp cord plastic bushing [1/8” NPS thread]
- 8 ea. nylon spacers, 9/16” long [1/4” O.D. x 0.115” I.D.]
- 40 in. #14 stranded plastic-insulated “primary wire” from auto parts store
- 1 ea. UHF male coax plug, plated brass [Amphenol 83-1SP]
- 1 ea. UHF coax jack to UHF jack adapter [Amphenol 083-1J]
- 1 ea. Ferrite snap-on toroid, 31 Mix [Palomar Engineers FSB31-1/2-1]



A 2 Meter Vertical Antenna for Inside Use—by “Tuna” K2TNO

ASSEMBLY DETAILS1

STEP 1: Prior to cutting the pipe, practice twisting it tightly into the end of the coax plug. Then measure from the front face of the coax fitting out to 19". Cut off with a hacksaw, and de-burr the cut so that the two threaded parts can be added later. Remove the pipe from the UHF plug and set both parts aside.

STEP 2: Cut a 40" length of the 14-gauge primary wire. Place all eight of the nylon spacers onto the plastic insulation. Space them uniformly along the wire as shown. Place the lowest one about 2" up from the end, so that it won't be melted while soldering the pipe to the coax fitting. Place the highest one so that it will extend slightly through the top of the pipe's lamp cord bushing, that comes with a pre-drilled hole. Glue the spacers in place and allow the glue to cure for about 1 hour before proceeding.²

STEP 3: Slide the completed wire and spacers assembly into the lamp pipe. Strip about 3/4 inch of insulation from the wire at the spacer end and tin with solder. Extend the bare wire out while you re-attach the coax plug body onto the end of the lamp pipe.

Follow steps 1 to 4 in order, as shown in Figure 1.

² I clamped the wire to my benchtop, so that it was straight and didn't slide around while I positioned the spacers at the desired intervals. I used drops of cyanoacrylate glue on both ends of each spacer to keep them in place. [Take care not to get this glue onto your hands, and put aluminum foil or plastic mailing tape under the work so that you don't accidentally glue the assembly to your work bench!]

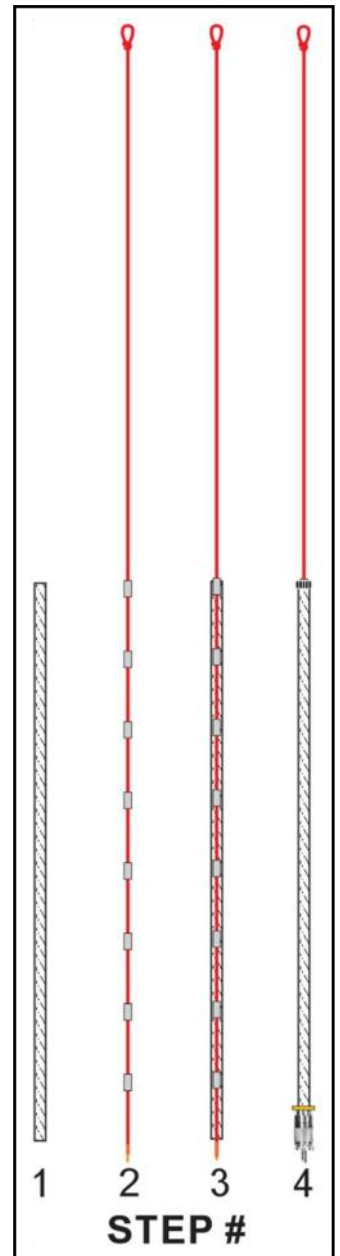


Figure 1: Drawing showing the steps in construction

A 2 Meter Vertical Antenna for Inside Use—by “Tuna” K2TNO

STEP 4: Ensure that the wire end reaches the tip of the center terminal of the plug. Solder the tip and the tinned wire together. Tighten the pipe into the coax plug body. Place the coax connector’s shell down the pipe and thread it in place over the plug body. Then thread the 3/4” brass locknut all the way down until it seats tightly against the rear of the plug shell. Use a high-wattage soldering gun to make solder joints that connect the plug shell to the locknut.

The next soldering is difficult: Although the lamp pipe is shown as being “brass plated” it is in fact steel. You will be trying to solder to the brass surface, but due to the heat-sink character of the pipe and the minimal brass, it is doubtful you can get a really good solder joint. [W6NBC recommended using some acid paste soldering flux, but I merely did a few judicious tacks at several sites around the perimeter of the pipe as shown].

Figure 2: Closeup of the brass locknut soldered to the rear of the coax plug and also to the threaded lamp pipe.



Pass the top end of the wire through the hole in the lamp cord bushing and thread the bushing down onto the top of the lamp pipe. See Figure 3. This completes the assembly steps.

Figures 3: Closeup of the antenna wire emerging through the top-most nylon bushing after screwing the lamp cord bushing onto the lamp pipe threads.



A 2 Meter Vertical Antenna for Inside Use—by “Tuna” K2TNO

MOUNTING

Strip the end of the antenna wire about 3/4". Fold the wire into a tight loop. Extend the wire and measure the loop so that the entire length from the top of the threaded pipe to the top of the loop is 19". Twist the bare wire around the plastic insulation to secure it. Hang the antenna from a suitable hook in the ceiling.



Figure 4: A snap-on ferrite toroid is attached to act as a common-mode choke

Connect a 52-ohm coaxial feed line to the UHF plug using the UHF jack- to-jack fitting. Put a one-turn loop of the coax through a snap-on ferrite RF choke. This choke consists of “31 Mix” ferrite, ideal as a common-mode filter at frequencies up to 300 MHz. See Figure 4.

TUNING

Place a VHF SWR meter in the line at the transmitter, and run a frequency sweep to measure the SWR over the 2 meter band. In my case, the 19" wire was a bit too long, as evidenced by the slope of the SWR curve shown in Figure 5. After completing the measurements, I unwound the top loop,

cut off 1" of wire, stripped again and re- wrapped with a final length of 18". The new frequency plot was completely satisfactory for my purposes. It is nearly flat at 1.5:1 SWR across the desired range from 144 to 148 MHz.

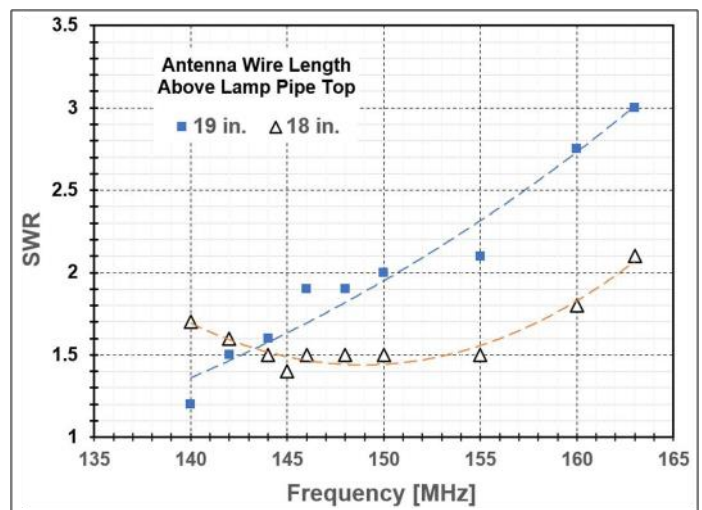


Figure 5: SWR curves obtained for this antenna at two different lengths of the vertical component.



A 2 Meter Vertical Antenna for Inside Use—by “Tuna” K2TNO

THE ANTENNA IN USE

I mounted the antenna using three rubber bands looped end-to-end, thereby suspending the antenna about 6” from the ceiling on a simple metal hook screwed into the sheetrock. It allows me to access my local repeaters at minimal cost. Since the length is only about 20” when the wire is folded over, this may be a suitable design for traveling hams who wish to bring along a VHF antenna that can be used at a temporary location. It will fit easily into a carry-on suitcase.

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K2TNO disclaimer!

Here is the back story:

I copied that 2009 idea, and wrote up the indoor version and submitted it to QST. They rejected it, because I had not included a common mode rf choke at the feedpoint. (I had one, but neglected to show it because it was not part of the actual antenna).

So, I revised the text and included my choke. This time they rejected it again, saying that the "construction of the sleeve was still incorrect."

At that point I gave up, since I had copied the "construction of the sleeve" from the original QST article.

*Perhaps Maxwell's equations have morphed since 2009. Or, perhaps Harris's Last Theorem has been overruled**

**Harris's Last Theorem of course refers to Sam Harris, W1FZJ, noted VHFer, who once opined in the caption of a photo of his New England VHF antenna array after an ice storm "if an antenna stayed up all winter, it wasn't big enough!"*

Since my little 2M antenna is in fact held up to the ceiling by rubber bands, I think it contravenes the FZJ hypothesis.

Or, at least that's my story-- and I'm sticking to it.

Readers should be advised about the lack of need for a bucket truck, crane or highline riggers to install this VHF monster. Any ham with a chair or stepstool can reach the ceiling to install the skyhook.

(My customary hold-harmless agreement text still applies...)

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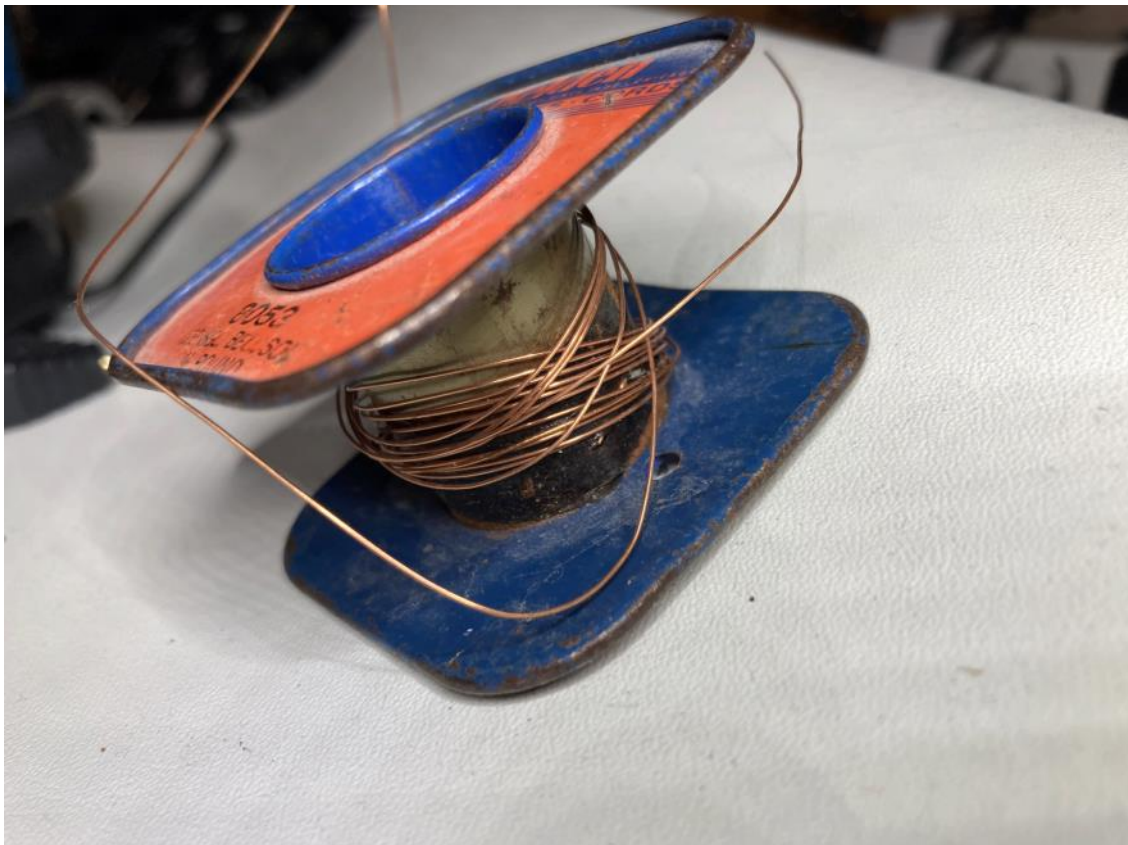
The End is Near!—By Robie AJ4F

The End is Near!

On a cold wet windy day in late 1968 my Dad took me to Mock Distributing Company on Bank Street in Decatur, AL to buy the last materials I needed to build my first crystal radio receiver. He bought me a 1/2 pound spool of # 26 wire and a 1N34A germanium diode. Several days later I completed the receiver and was very proud to pass the headphones around the table so Mom, Dad, and my two brothers could listen to WHOS, the local country/western AM radio station! Later that evening while putting away my tools and materials I was astonished at how much wire remained on the spool.

In June of 1969, I received my Novice license and with borrowed equipment I got on the air. I became very interested in electronics and fostered my interest by building as many items to complete my station as possible. A few things worked, but most did not work well, and many did not at all. Failure did not stop me and when I felt my project called for small gauge copper wire I reached for my spool!

The years passed quickly and the coils of wire on the spool diminished steadily. In late October 2023, I needed to build a transformer for an EWE receiving antenna. I immediately went for my spool of wire, measured, and cut the length of wire needed. When the transformer was finished, and I was putting away my materials and tools, I realized how little wire was left on the spool, and for how long the spool had fulfilled my needs. How much longer will it last? There is no way to tell, but I'll reach for that spool until the very end!



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How to reach US

On the World Wide Web <http://www.tdxx.net> email address: k5dx@tdxx.net

On 2 Meters: 147.96/36 MHz (100 Hz) On 70cm: 447.00/442.00 MHz (103.5 Hz)

DX Cluster—On Packet: Connect to **K5DX** on 145.71 MHz or telnet via IP address 75.148.198.113

Facebook: <https://www.facebook.com/groups/TexasDXSociety/>

TDXS says "HAPPY BIRTHDAY" to these members with birthdays in November:

Please notify the Editor if I have missed any-one or of any updates:

Keith Huges - KA5F
 Tom Ashworth - N5EA
 Charles Brues - N5AM
 Robert McWhorter - K5PFE
 Chuck Dietz - W5PR
 John Davis - KN5T
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 Bob Chmielewski - N5PJI
 Bruce Meier - N1LN
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 Don Mayhall - N5DM

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 Matt Thomas - WX5S
 Willis "Cookie" Cooke - K5EWJ
 Jim Burrough - N5DTT
 Leonard Cernuch - WD5CAY
 Jim Burroughs - N5DTT
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