Topband DXing from the Midwest

Dayton Hamvention Topband Dinner

May 17, 2024

Presented by David Raymond, W0FLS

Finding Ham Radio

- Born and raised in Kansas City
- April, 1963 - inspired by fellow Boy Scouts (1st Class rank required Morse Code) got Novice license (WN0FLS) w/DX-35, BC-348Q, and dipole in the folks attic – age 14
- Fall, 1963 – General license (WA0FLS)
- Active in Raytown High School Ham Club – W0CTV ("Whisky Zero Color Television")
- 60s-70s - Active in 2m FM, commissioning repeaters
- 1964 - Second Class Phone license, age 16

Move from the Midwest to KL7

- Graduated University of Kansas, 1971
- Became active with 432 MHz weak signal work from Lawrence, Kansas
- 1973 - went to work for Motorola as Field Technical Representative
- 1974 - work transfer to Anchorage, Alaska – active on HF and 432 MHz-made first EME QSO from KL7 on 432 MHz resulting in first 432 WAS (w/W0YZS); responsible for field engineering, installation and optimization for Alyeska Pipeline mobile and pump station radio comm systems

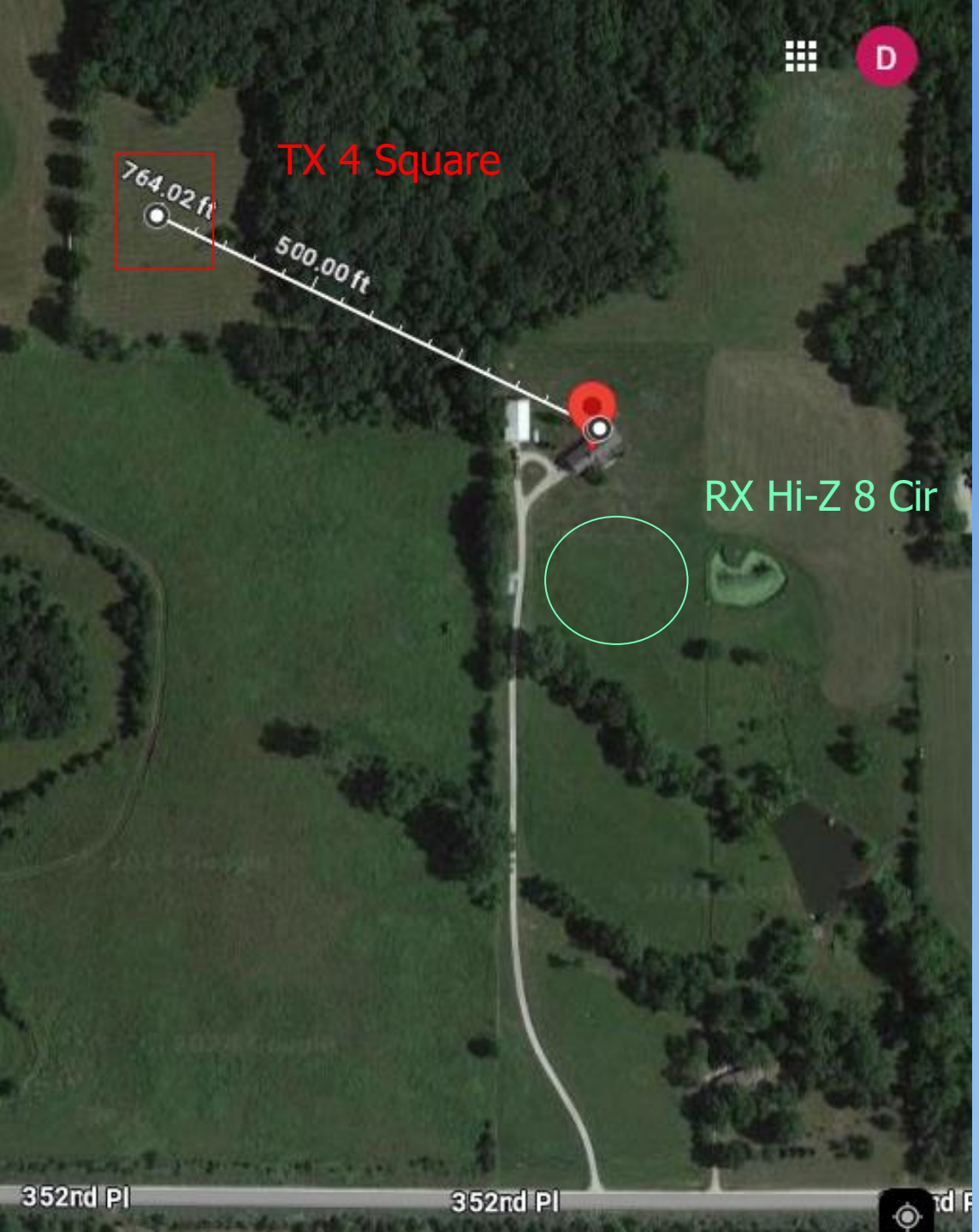
KL7 to Iowa – Begin Topband

- 1977 - work transfer to Des Moines, Iowa
- 1983/87 - put up first triband beam 1983 and W9INN half sloper for 160m – first 160m QSO was KX6DC (10 October 1987)
- 1997 - moved to rural Iowa acreage – 130’ rotating Rohn 55g with three high stack TH-7, XM-240 2 el short 40, Mosley WARC tribander, 80m four square (bent dipole elements) and sloping quarter wave vertical w/two elevated radials for 160; also put up 90’ Rohn 45G for 144/432/1296 antennas for weak signal work
- Added two 2-wire reversible Beverages (580’) 1998

Getting more serious about TB

- 1999 – put up likely the first W8JI 8 circle passive RX array – 20’ elements top loaded with sloping guy wires + mini inductor and resistor
- 2001 – worked P5/4L4FN on 10m phone to complete Top of Honor Roll
- 2004 – put up 190’ guyed Rohn 25g and 160m four square with bent dipole elements – 36 110’ ground radials
- 2009 - changed 160m four square configuration to ground mounted verticals; installed additional radials at each element and detuning stub on tower
- 2010 – installed Hi-Z 8 circle/200 optimized for 160m, kept reversible Bevs for one more year – last time for Beverage installation – no need for Bevs with the Hi-Z 8 Circle!
- Current – 297 Confirmed – all CW

House with original rotating 130’ rotating Rohn 55g tower (now decommissioned) for HF and 90’ Rohn 45g tower for VHF/UHF



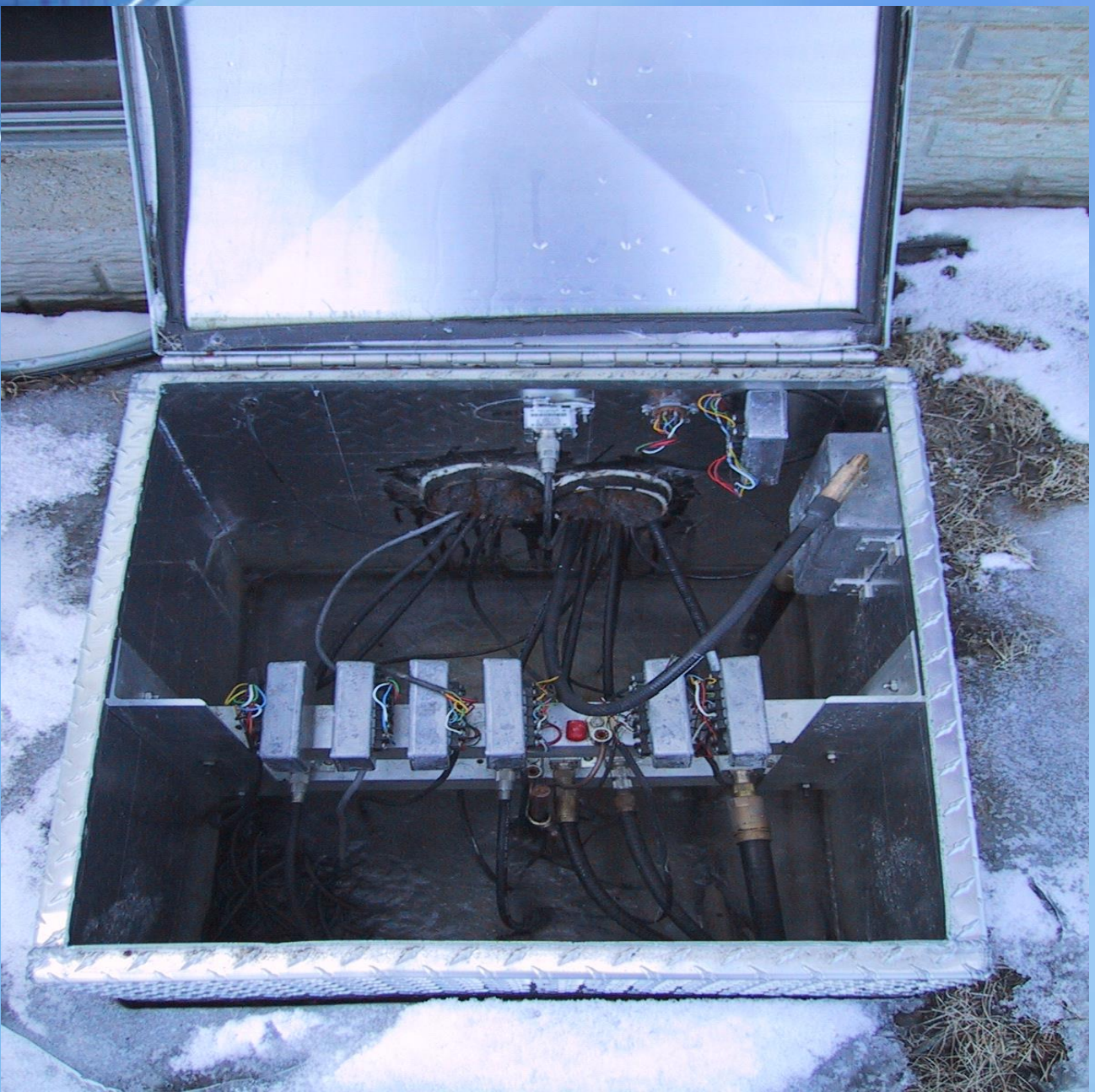
Google Map view of QTH

- Power line from road to house is underground
- 850’+ feedline and control cable to TX four square

Original Rohn 55g Rotating tower with new DB-18 Steppir on Rohn 45g 90’

90’ Rohn 45g and single point cable entry grounding box

Single point grounding box and cable entry at house



Single point grounding box –all cabling comes in underground and enters foundation through Polyphasers

Cable Entry into Shack

Shack operating table

190’ Rohn 25 supporting 160m four square elements – catenary supporting rope is at top right – arrow shows element top insulator

Ground mounted vertical element for 160m four square

Catenary rope supporting 160m vertical element of four square

Securing the catenary rope supporting 160m vertical element

Base of 160m four square tower – 36 120’ radials – tower used only to support the four square vertrical elements

Base of 160m Four Square Element – 12 100’ radials each element

DX Engineering phasing/control box for 160m four square – approx. 3% power dumped to dummy load at resonance

Tower and detuning stub – 12″ spacing; attaches to tower @ 100′ level– terminates at 4′ level with 87 pF cap to ground

Bottom termination of tower detuning stub

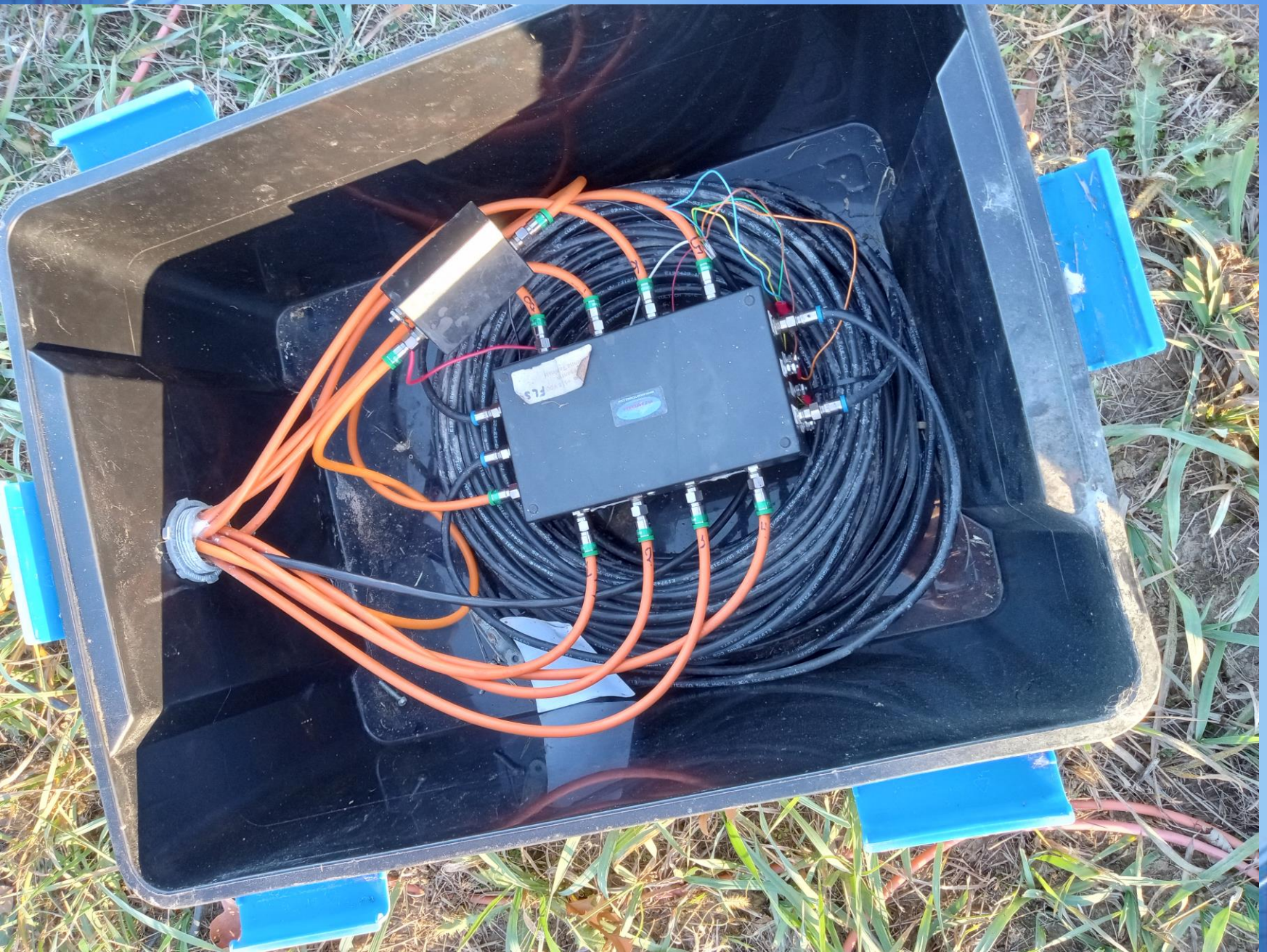
Dummy load for four square controller; cap for detuning stub – tuning stub currently disconnected

HI-Z Eight Circle Array – 200’ diameter – optimized for 160m

View of eight circle array

Hi-Z Eight Circle Control Box

Interior of Hi-Z Eight Circle Control Box



Base of 24′ vertical element of Hi-Z Eight Circle Array

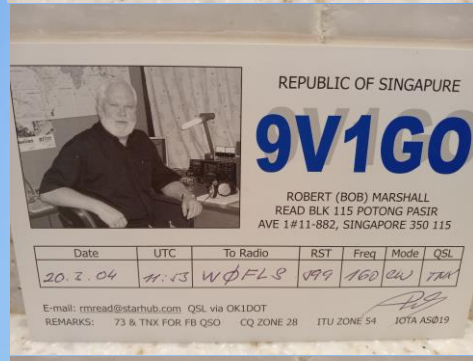
Base of Hi-Z Eight Circle element

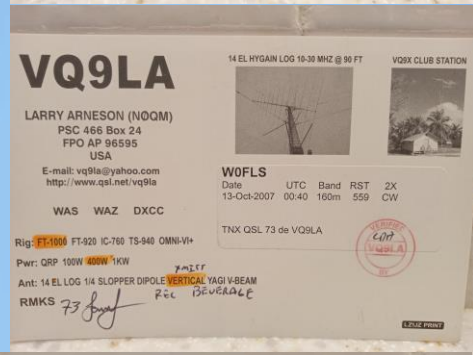
What's Unique about TB from the Midwest?

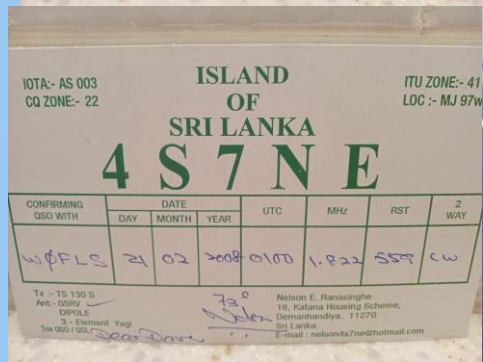
- 4 – 6 db disadvantage to Europe/Africa compared to east coast – typically ~S unit
- 4 – 6 db disadvantage to Asia/Pacific compared to west coast – typically ~S unit
- Plenty of weather related phenomena – snow, ice, wind, lightning, extreme temps (hot and cold)
- QRM from all directions!
- Always beaming through east/west coasts for DX
- It's Iowa – electric fences. . . thank heavens for noise blankers!

Memorable TB QSOs

- D68BW – 4 Oct 98 From QSL card: "You are the only USA from D6 on 160"
- 9V1GO – 20 Mar 04 (Bob running 100w)
- VQ9LA – 13 Oct 07 (took three years)
- 4S7NE – 21 Feb 08 (Nelson running 100w)





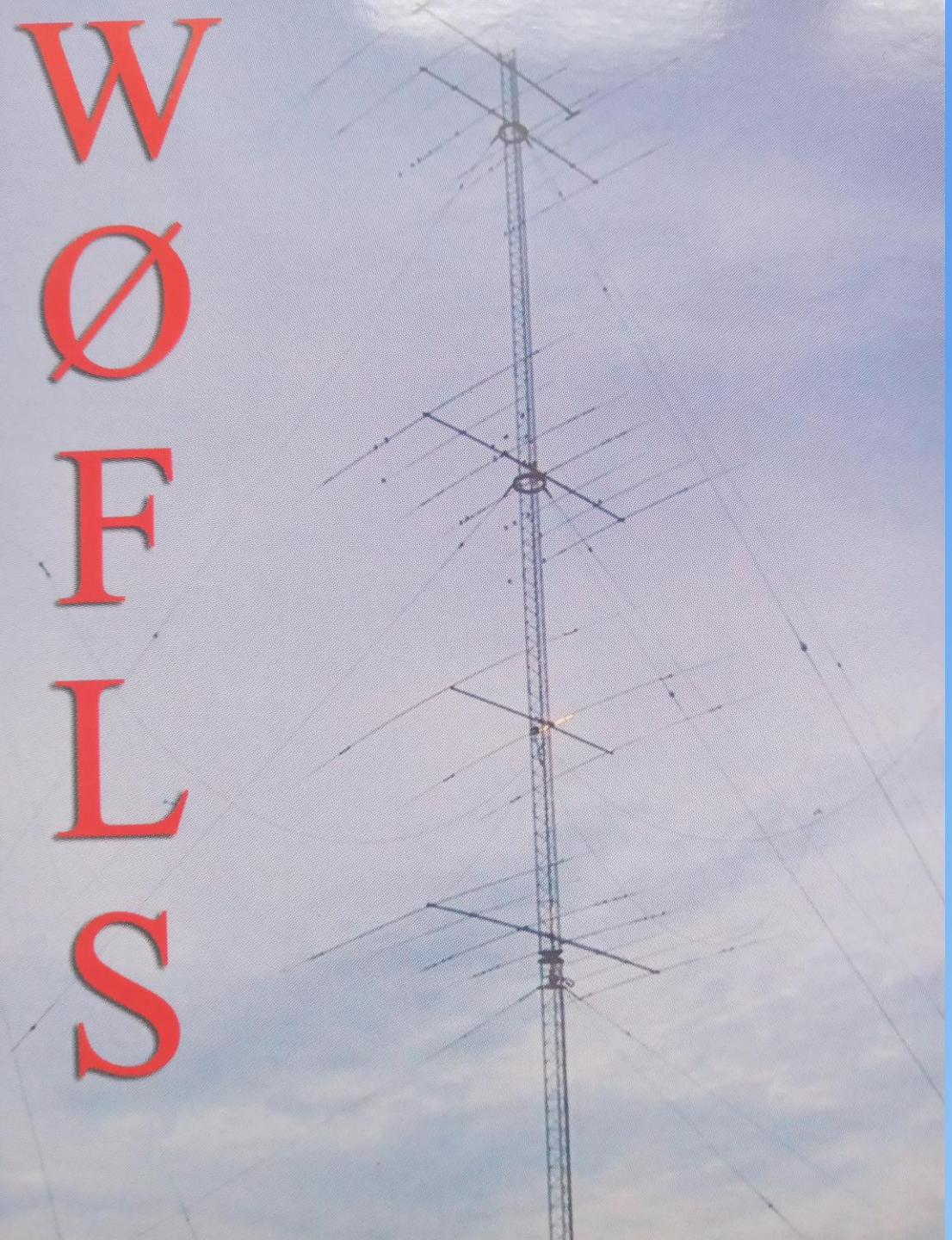


Secrets of My Success

- Blessed with low noise QTH – noise level in 1996 was in the -120s dBm; higher now
- Full size 160m four square for TX/RX
- The Hi-Z 8/200 optimized for 160m for RX
- Diversity Reception!
- K3s APF
- Being QRV!

FLS Theorems for Operation

- The best propagation can, indeed, make up for a mediocre antenna
- The best antenna systems cannot, indeed, make up for the worst propagation
- There is no such thing as predicting propagation



Questions and Comments