

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
vertical
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



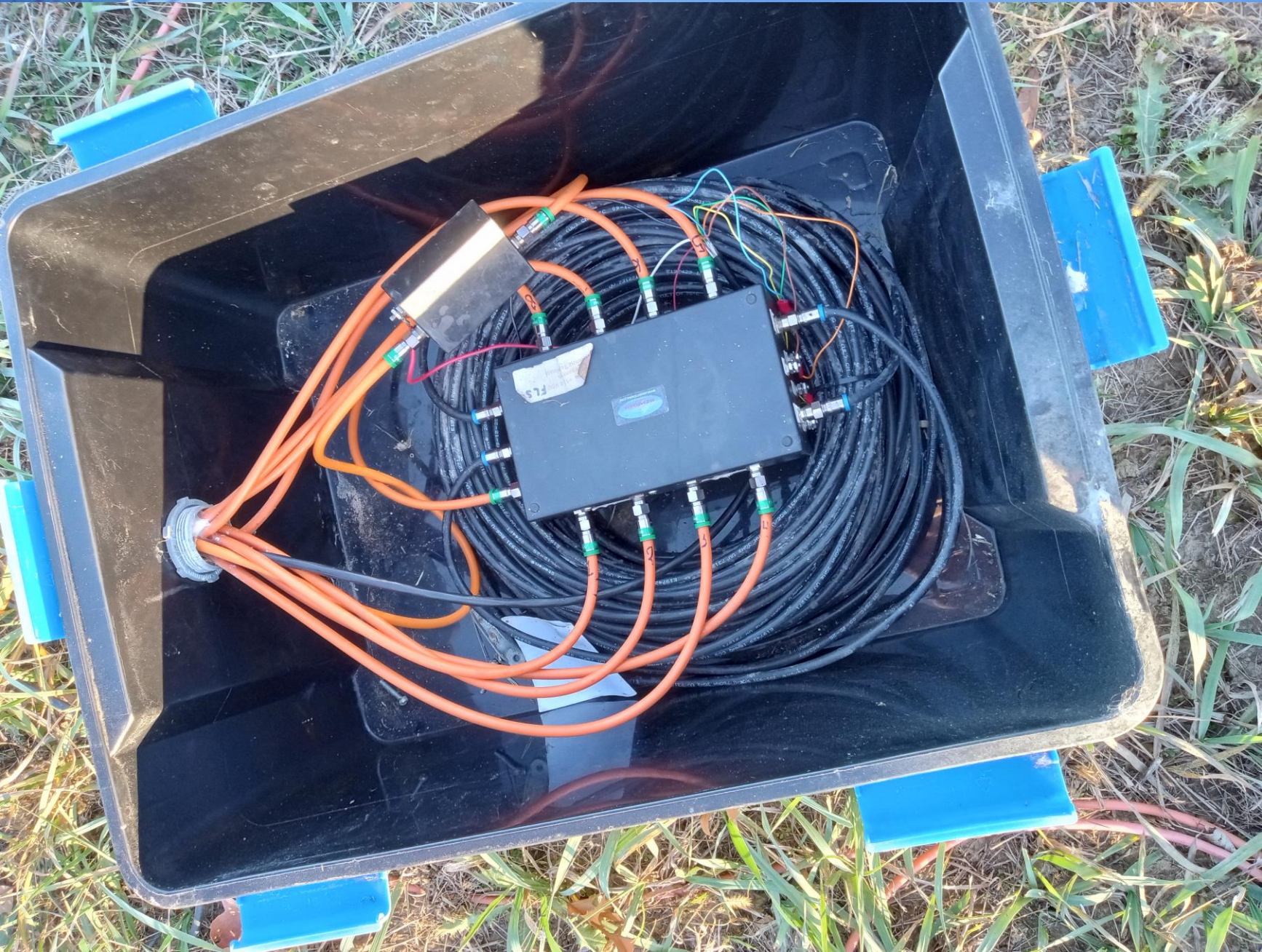


**View of eight
circle array**



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)

Hermann Samson
Maloudja Hotel
Grande Comore
R.F.I. des Comores
FOC 1329

To Radio: **WØFLS**
Date: 04 Oct 1998 Time: 00:02 Freq: 1.8 RST: 599
Mode: CW
You are the only USA from D6 on 160

R.F.I. des Comores
D68BW

Equipment: IC 708 MK II, Kaitonika KAM, Laptop-Computer
20.0 m Vertical for 160/30/40 m
7 m Fluoroplas Vertical for 20 - 10 m
ETMRCOG-X3 Memory-Arayer
QSL via D-25W

REPUBLIC OF SINGAPORE
9V1GO

ROBERT (BOB) MARSHALL
READ BLK 115 POTONG PASIR
AVE 1#11-882, SINGAPORE 350 115

Date: 20.3.04 UTC: 11.15 To Radio: WØFLS RST: 599 Freq: 160 Mode: CW QSL: YES

E-mail: mread@starhub.com QSL via OK1DOT
REMARKS: 73 & THX FOR FB QSO CQ ZONE 28 ITU ZONE 54 IOTA ASØ19

VQ9LA

LARRY ARNESON (NQOM)
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USA
E-mail: vq9la@yahoo.com
http://www.qsl.net/vq9la

WAS WAZ DXCC

14 EL HYGAIN LOG 10-30 MHZ @ 90 FT
VORX CLUB STATION

WØFLS
Date: 13-Oct-2007 UTC: 00:40 Band: 160m RST: 599 CW

TXN QSL 73 de VQ9LA

Rig: FT-1000 FT-420 IC-760 TS-940 OMNI-VI+
Pwr: QRP 100W 100W 1KW
Ant: 14 EL LOG 14 SLOPPER DIPOLE VERTICAL YAGI V-BEAM
RMKS: 73 73 73

IOTA:- AS 003
CQ ZONE:- 22

ISLAND OF SRI LANKA
4 S 7 N E

ITU ZONE:- 41
LOC:- MJ 97w

CONFIRMING QSO WITH	DATE			UTC	MHz	RST	2 WAY
	DAY	MONTH	YEAR				
WØFLS	21	02	2008	0100	1.822	599	CW

Tx - TS 130 S
Ant - G5RV
DIPLOLE
3 - Element Yagi
Tn QSL: 73 73 73

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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

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**Questions and
Comments**