


VHF Contest Fun!

Randy Wing, N0LD

What is VHF Contesting?

- ▶ Competing with other Amateur Radio VHF operators
- ▶ Weak Signal / Horizontally polarized antennas
- ▶ Higher Power the better / but many use “barefoot” power
- ▶ Using 50 mhz and above frequencies
- ▶ Popular VHF contests:
 - ARRL Spring Sprints (50 144, 222, 432, 902 and up)
 - ARRL January, June, and September VHF Contests
 - CQ World Wide VHF Contest (15–16 July 2017)
- ▶ Fixed, Rover, Multi–Op Categories
 - Fixed: SOHP, SOLP, SO Portable, SO 3–Band (50, 144, 432 mhz), SO FM Only
 - Rover: Rover, Classic Rover, Limited Rover (lowest 4 bands), Unlimited Rover
 - Multi–Op: MO Limited (max 4 bands), Multi–operator Unlimited

Why are you here?

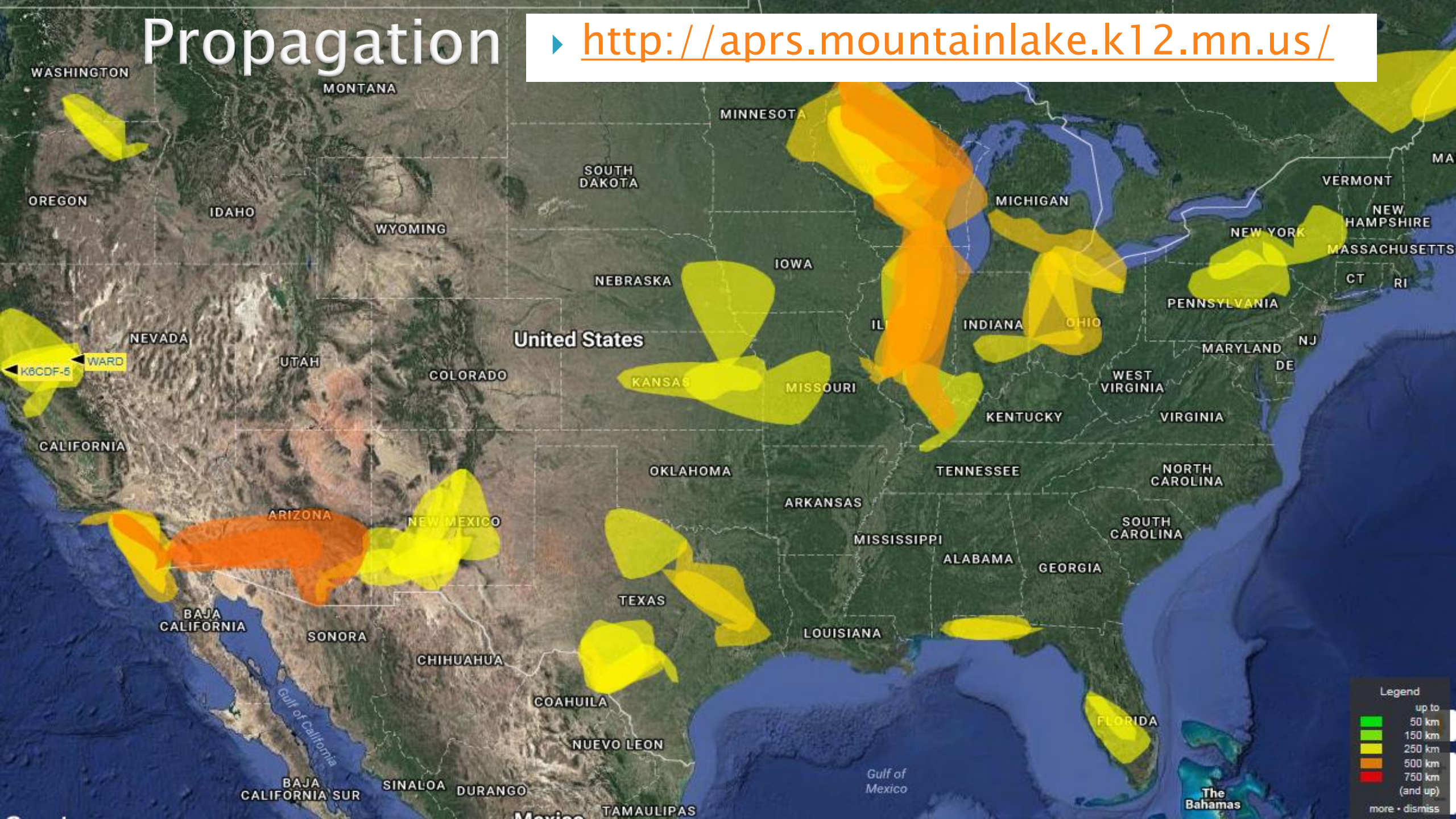
- ▶ I would like you to consider trying VHF contesting!
 - ▶ VHF Contesting is increasing! ~10% increase in June 2017
 - ▶ Midwest has a lot of flat terrain! Conducive to VHF operation
 - ▶ We need more VHF contest operators to have more fun!
 - ▶ ...and most importantly...
- 

VHF Contesting is Fun!

- ▶ Challenge:
 - Compete with others in your “contest class”
 - Can do it alone or with others
- ▶ Excitement:
 - Band Openings – during contests they are more noticeable!
 - Helping Friends, Making Friends
 - Learning – Opportunities to Mentor and be Mentored
- ▶ Awards:
 - Recognition from the contest sponsor; VHF contests are collaborative as well as competitive
- ▶ Side Benefits:
 - Improves operating skills
 - Excellent preparation for emergency operations
 - An excellent use of our allocated spectrum *Remember: “Use it or lose it.”*

Propagation

▶ <http://aprs.mountainlake.k12.mn.us/>



Click on the map for info.of that location / Right-click for more options

© [WWW.DXMAPS.COM](http://www.dxmaps.com)

QSO/SWL from 20:33z to 21:25z

SFI=73 A=10 K=1-Quiet SWX=Quiet

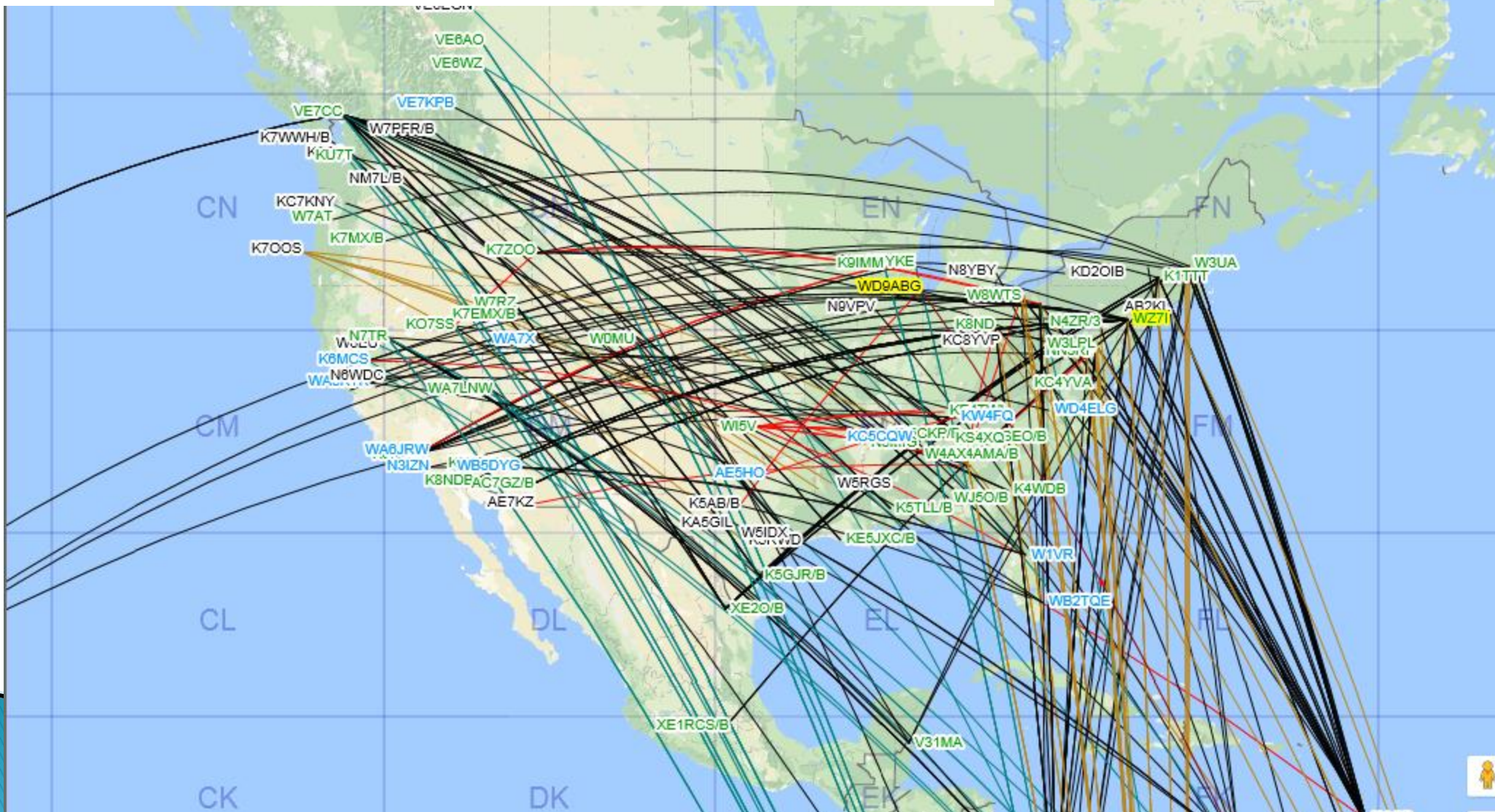
TEP! MR rep at 21:19z

F2! MR rep at 21:18z

ES! Best MUF=59MHz above DN31 at 21:06z. MR rep at 21:22z

Propagation

- ▶ <http://www.dxmaps.com/spots/mapg.php?Lan=E&Frec=MUF&ML=M&HF=N>

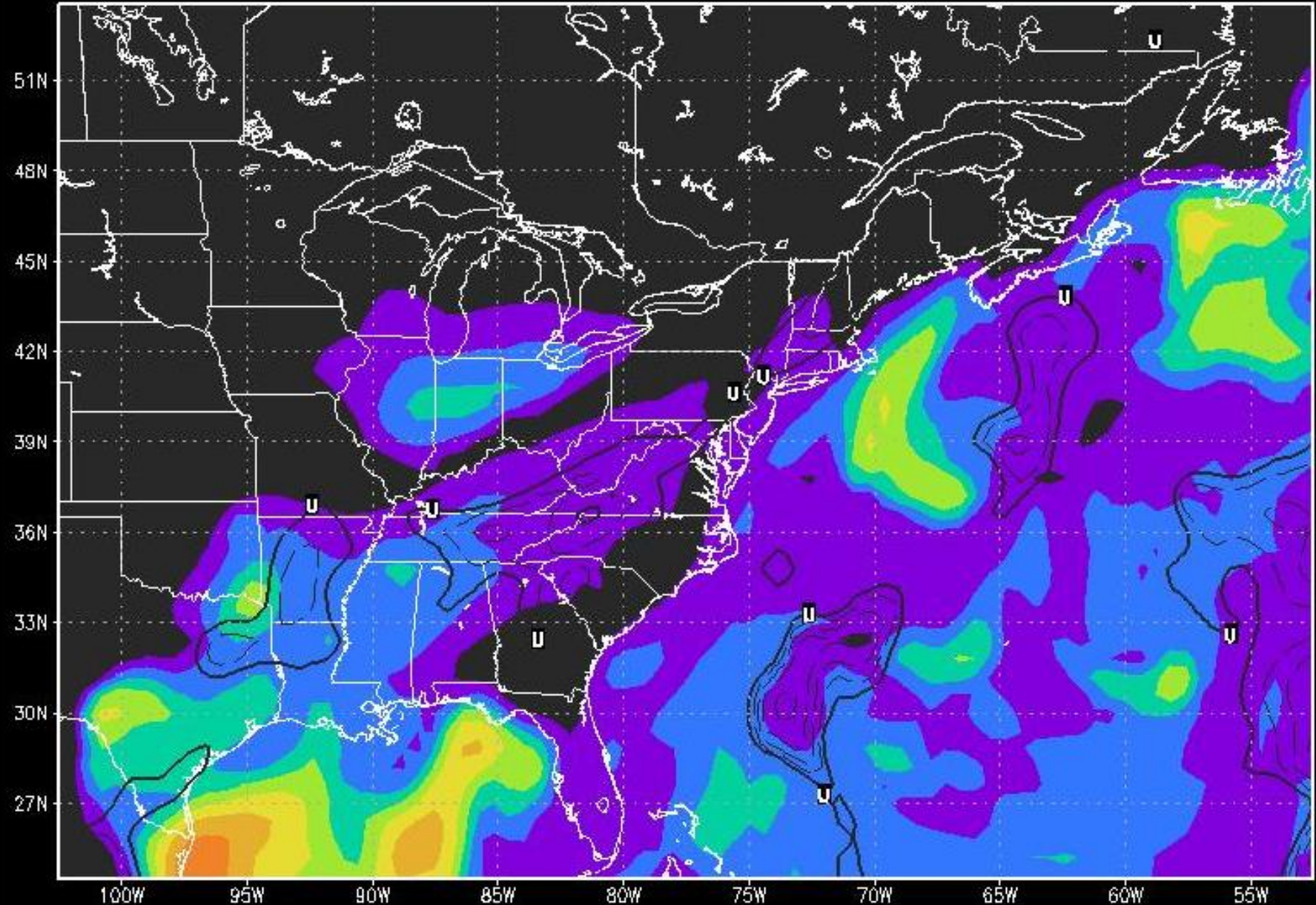


Propagation

- ▶ <http://www.dxinfocentre.com/tropo.html>

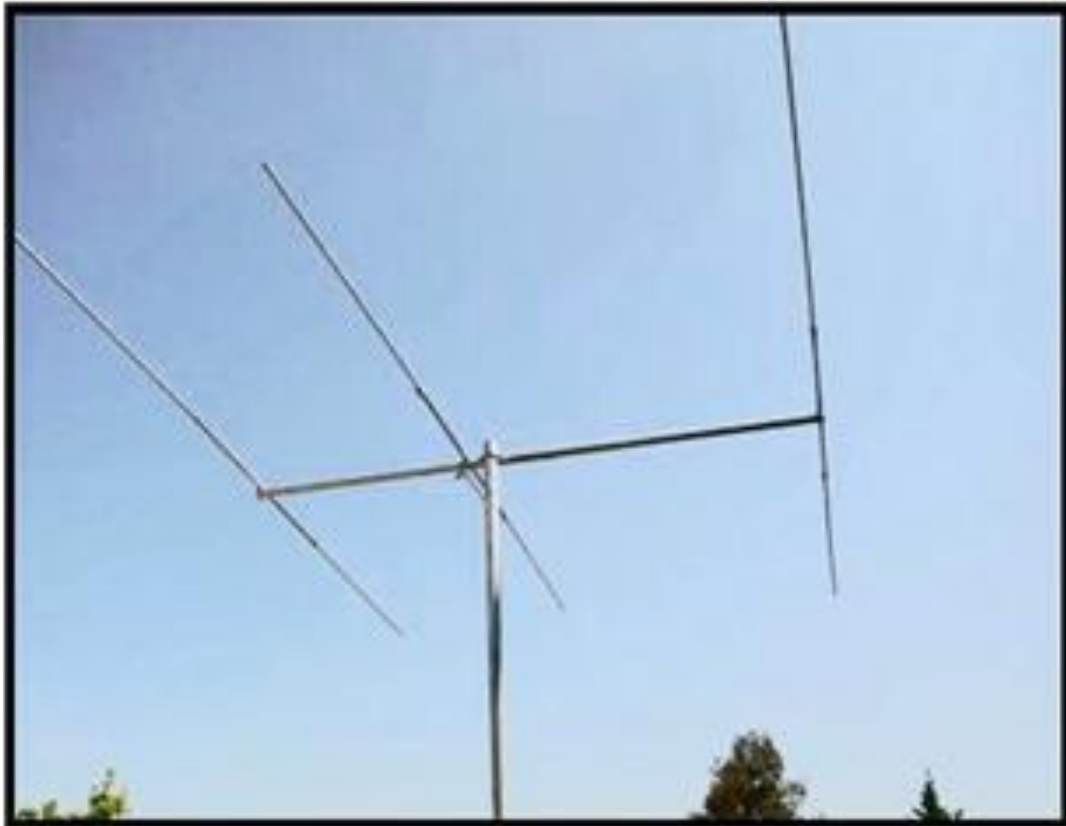
Hepburn Tropo Index Valid 1800 UTC Fri Nov 3 Ern No America

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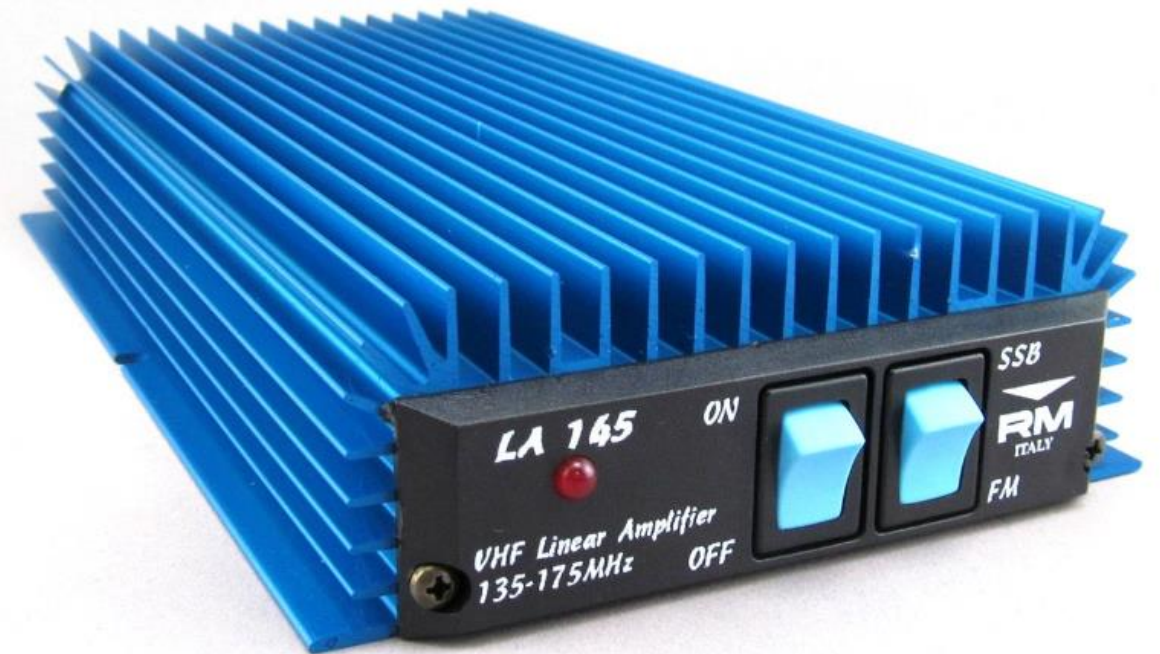
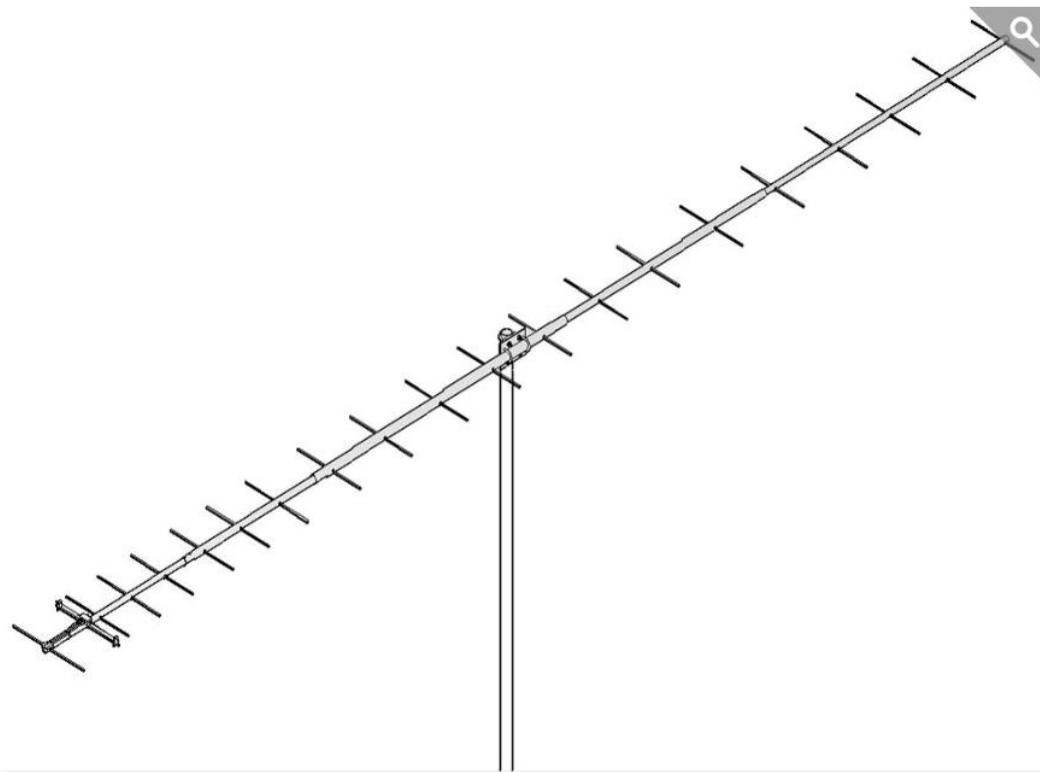
What do I need to start?

- ▶ Recommend a small 6m Beam and a 2m Beam ~ \$200 each
- ▶ Recommend a used radio such as FT-100, FT-857D < \$600

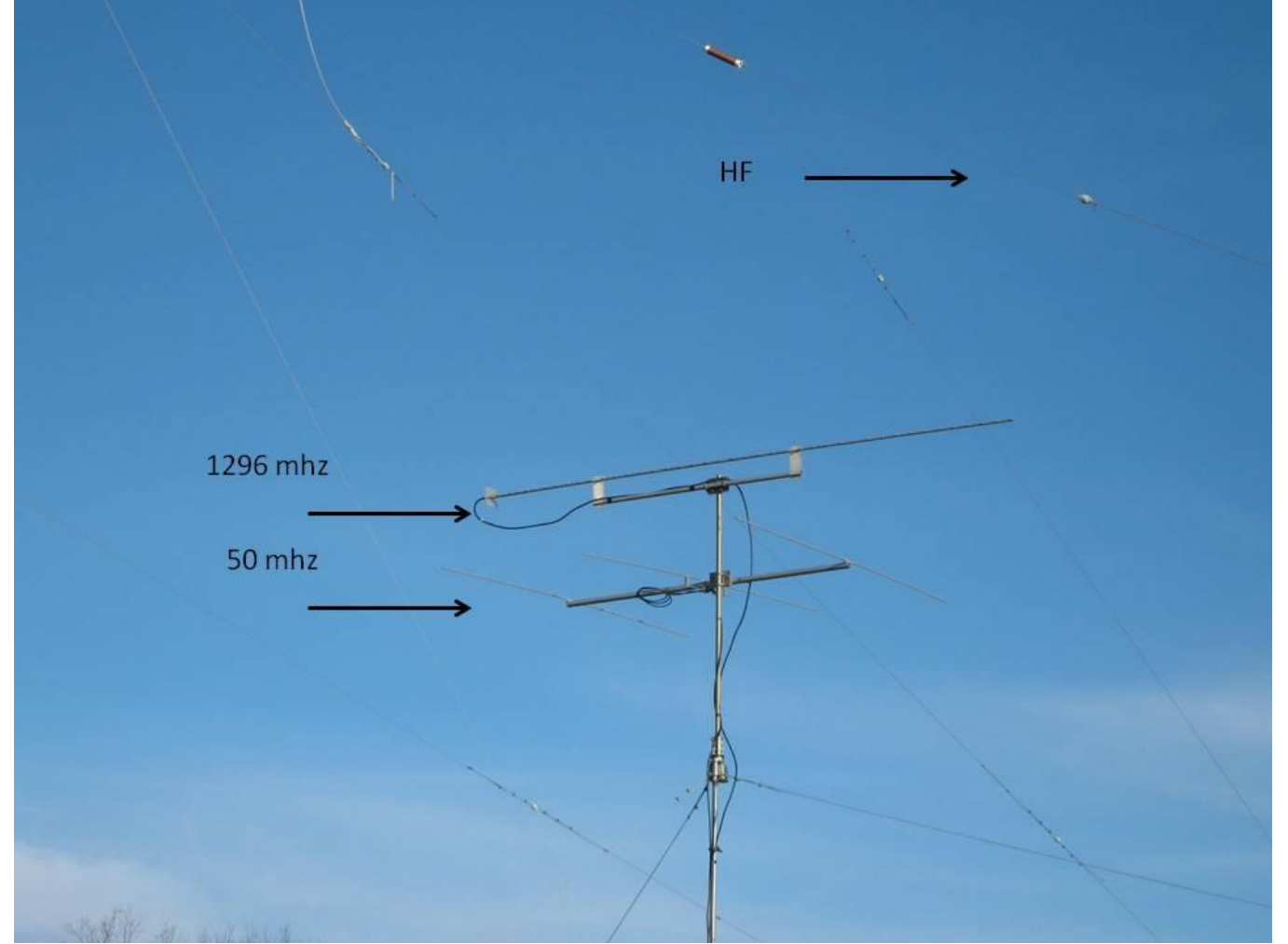
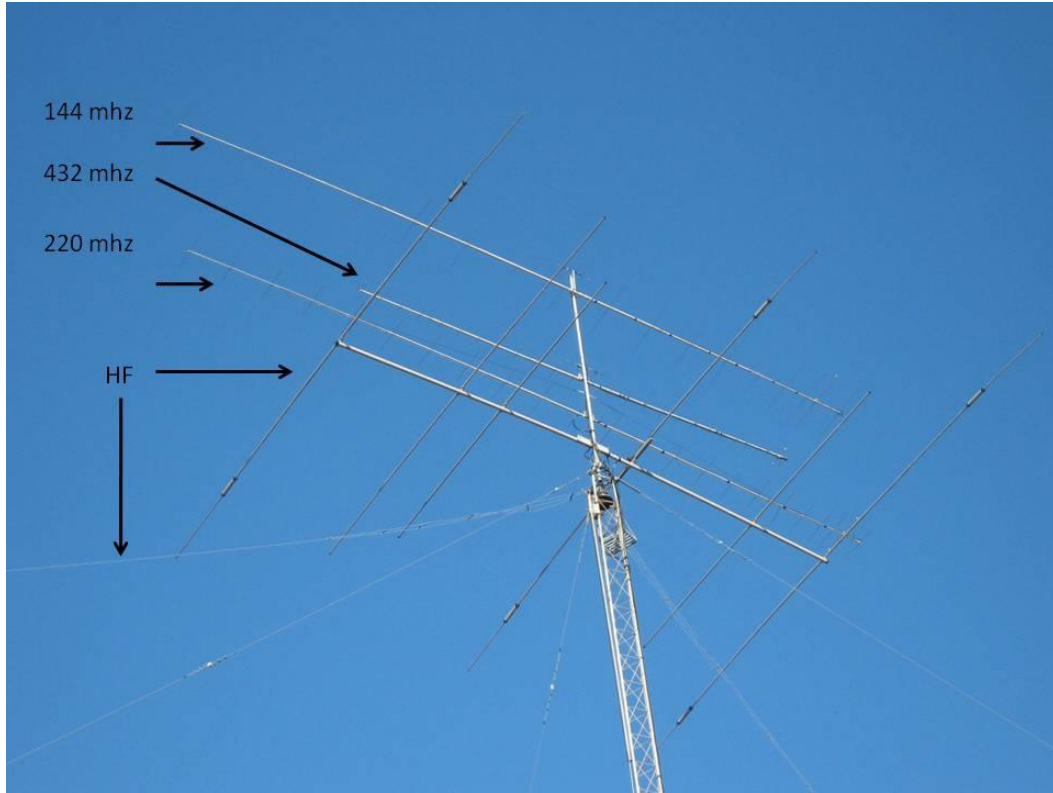


Where do I go from here?

- ▶ Recommend a 70cm gain antenna ~ \$230 each
- ▶ Recommend a 2m amplifier (85W) < \$160



Fixed Operation Antenna Examples



No matter what size station you're operating, it's a thrill to talk to somebody far away.

Fixed Operation Antenna Examples (more)



***You'll improve your VHF operation
– just START!***

Do I Have to Have a “Contest Station”?

- ▶ Big Gun contest stations
 - Multiple radios
 - Multiple towers
 - Serious station automation
- ▶ Small Gun – Big Fun stations
 - There are opportunities for “guest operating” if you have a big gun nearby!
 - Ask your club members to all get on the air on 146.52 FM!
 - If there isn’t anyone on, right now – try again several times later!
 - Band conditions change things!

You don’t have to be a Big Gun to have Big Fun contesting!

Who enters a contest? Why?

▶ The Casual Contester

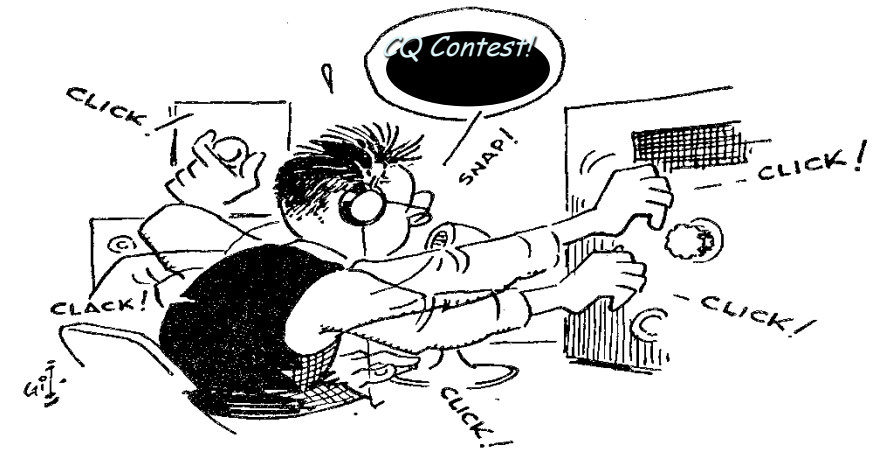
A desire to just have some fun, improve operating skills, and work new countries, states, counties, etc. from the smorgasbord of participating stations

▶ The Feisty Contester

*A desire to compete
... individually, or as part of a club.*

▶ The Committed Contester

*Able to leap tall buildings with a single bound
Able to master the art of sleep deprivation*



Contesting can be like this sometimes!

How to Win a Contest

- ▶ Choose the “Class” to match your goals!
- ▶ Work a lot of stations
- ▶ Work as many “multipliers” as possible
- ▶ Work smart
 - Make good band change decisions
 - Use efficient operating techniques
 - Don’t waste time or words (similar to emergency operations)
 - Know when to “Run” and when to “Search & Pounce”
 - Know when to take a break

How Do You Score in a VHF Contest?

- ▶ QSO Points

 - Count one point for each complete 50- or 144-MHz QSO.

 - Count two points for each 222- or 432-MHz QSO.

 - Count three points for each 902- or 1296-MHz QSO.

 - Count four points for each 2.3 GHz (or higher) QSO.

- ▶ Multipliers

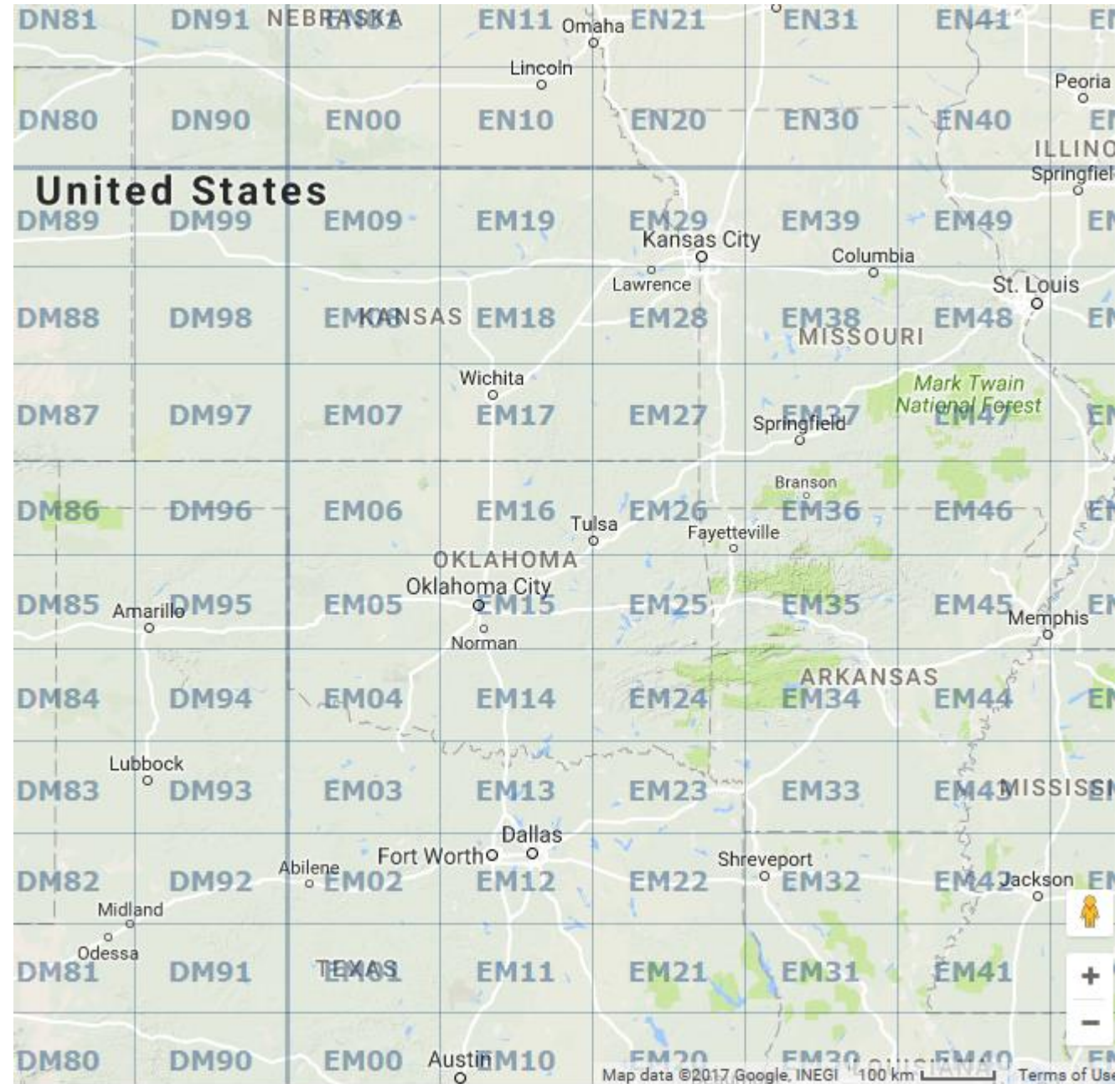
 - Total number of different grid squares worked per band

- ▶ Final Score

 - $\text{Total QSO Points} \times \text{Total Multipliers} = \text{Final Score}$

Grid Squares

- ▶ Grid Squares are:
 - 2 deg EW; 1 deg NS
 - ~100 miles x 60 miles
- ▶ Strategy
 - Go North and South thru corners
 - Hit VHF population centers



January 2018 ARRL VHF Contest

21–22 January 2018 – N0LD/R

Randy Wing, N0LD

Nick Farlow, KBOYHT

Harvey Jones, W0HGJ

A Personal Introduction

- ▶ Grew up in NE Iowa on a dairy farm – interest in astronomy and technology; discovered AM dxing when given an old radio
- ▶ Iowa State University – NROTC, degree in computer science
- ▶ Have worked for Boeing since 1984, software/systems eng, mgmt, sales
- ▶ I've been a ham since August 1996
- ▶ Enjoy VHF and HF operation – casual contesting, Dxing, satellites, SKYWARN, exploring digital, kit building – working on microwave radios

“I cannot predict what I will like until I try it!”

Focus on NOLD/R

- ▶ Strategy – how did we win a VHF award for Rover?
 - Used all the bands that we have radios for! (6m, 2m, 1.25m, 70cm, 23 cm)
 - Design a rover station for comfort and friends
 - Determine the VHF population centers locations (experience, friends)
 - Build an almost 200 person deep VHF location database
 - Plot a route close to them as close to North and South as possible
 - Market the Rover – let VHFers and new VHFers know we are coming
 - Post our route via email, facebook, word of mouth
 - Post our location on facebook, talk on local repeaters and encourage qsy to simplex freqs
 - Choose an entry category that isn't widely pursued – Unlimited Rover
 - Add 6m digital – MSK-144 & JT-65 & FT8

Developed a VHF Database

- ▶ Over 200 people currently
- ▶ Grayed squares allows cutting and pasting to Hamstermap.com

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	
1	email address	telephone	Sent	receive	Callsign	6m	2m	1.25m	70cm	23cm	Mode	Date	Time	Source	source	Gr	estation	Gr	LATITUDE	LONGITUDE	MARKER	COLOR	NUMBER	LEGEND	Comments
126	GORB3210@GMAIL.COM		Y		KD0QNC	Y	Y		Y		PH	9/10/2016	2220	N0LD/R	EM17	EM17gr			37.74173	-97.430362	dot6	black		KD0QNC	UNCERTAIN OF BANDS
127	KD0WUF@GMAIL.COM		Y		KD0WUF		Y		Y		PH	1/23/2017	0135	KF0M	EM17io	EM18um			38.501922	-96.263697	dot6	black		KD0WUF	FM ON 2M AND 70CM
128	AIZU_SAMURAI@HOTMAIL.COM		Y		KD5AMD		Y		Y		PH	9/11/2016	2332	N0LD/R	EM15	EM15io			35.606076	-97.287847	dot6	black		KD5AMD	UNCERTAIN OF BANDS
129	KYLE@KA5D.COM		Y		KD5EUQ/R	Y	Y		Y		PH	6/11/2016	2038	KC5W/X	EM13rs	EM10di			30.345552	-97.723362	dot6	black		KD5EUQ/R	Now KA5D
130	KD5IKG@ARBL.NET	713-302-1579	Y	Y	KD5IKG/R	Y	Y	Y	Y		PH	9/10/2016	2038	KC5W/X	EM13rs	EM10ck			30.436667	-97.793333	cross6	red		KD5IKG/R-713-302-	COMPETITION!
131	KD5VQ@YAHOO.COM		Y		KD5VQ	Y	Y				PH	9/11/2016	0247	KC5W/X	EM13rs	EM15pl			35.474961	-96.692396	dot6	black		KD5VQ	UNCERTAIN OF BANDS
132	GSTUART2@SBCGLOBAL.NET		Y		KE0HOO				Y		FM	1/23/2017	0237	KF0M	EM17io	EM17fp			37.66664	-97.577125	dot6	black		KE0HOO	UNCERTAIN OF BANDS
133	KE5Q@ARBL.NET		Y		KE5Q		Y				PH			K5S/W	EM25hr	EM13qs			33.037018	-96.651363	dot6	black		KE5Q	UNCERTAIN OF BANDS
134	KF0M@ARBL.NET		Y	Y	KF0M	Y	Y		Y		PH			K5S/W	EM25hr	EM17io			37.606076	-97.287847	star6	green		KF0M	UNCERTAIN OF BANDS

Re: ARRL June VHF Contest (10-11 June 2017) participation - N0LD/Rover

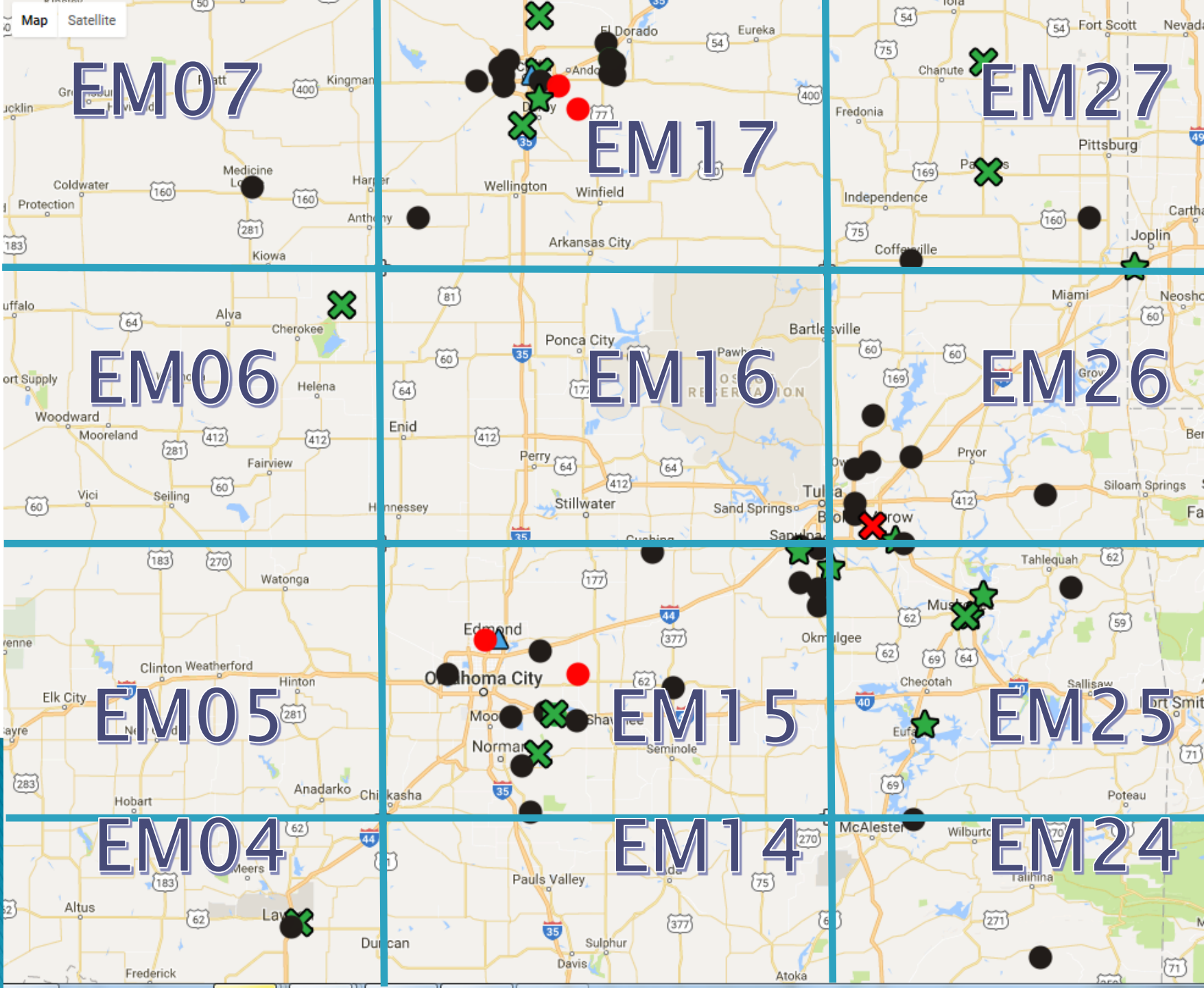
Richard Johnson

6/6/2017 08:52 PM

To: Randy Wing;

Am posting to WARC, wichita area, MARC, McPherson area, Salina club, SEKARC which is SE Kansas and west Missouri, up to KC area, and several others along your route. Good luck, have fun. My 440 will be limited to about 25 watts, but will try. FM could do 50

Richard



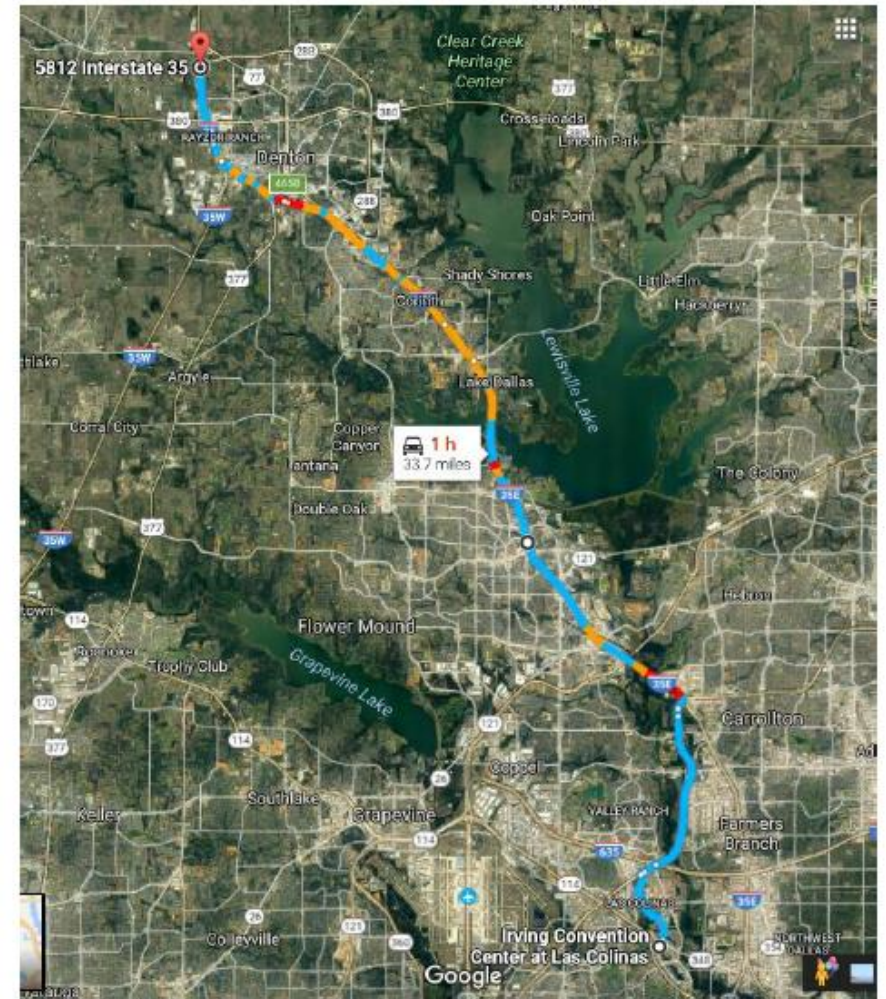
Google Map the Itinerary

- ▶ Allow about 25% of travel time for breaks
 - You need water, food, gas, and sanity
- ▶ Think about who you will make contact with at your stop – what is reasonable
 - Short stops – 15 minutes
 - Medium stops – 30 minutes
 - Long stops – 1 hour
- ▶ Creating detailed itinerary helps while executing the route – sets expectations

NOLD ARRL VHF Contest Rover Operation 10 June 1 PM through 11 June 11 PM, 2017

Randy Wing, NOLD – Harvey Jones, W0HGJ – Samantha Wing, KCOMTM – Nick Farlow, KBOYHT

We will drop off Samantha in Oklahoma City at 6 PM on June 10th. Will pick up Nick at 6:30 PM.



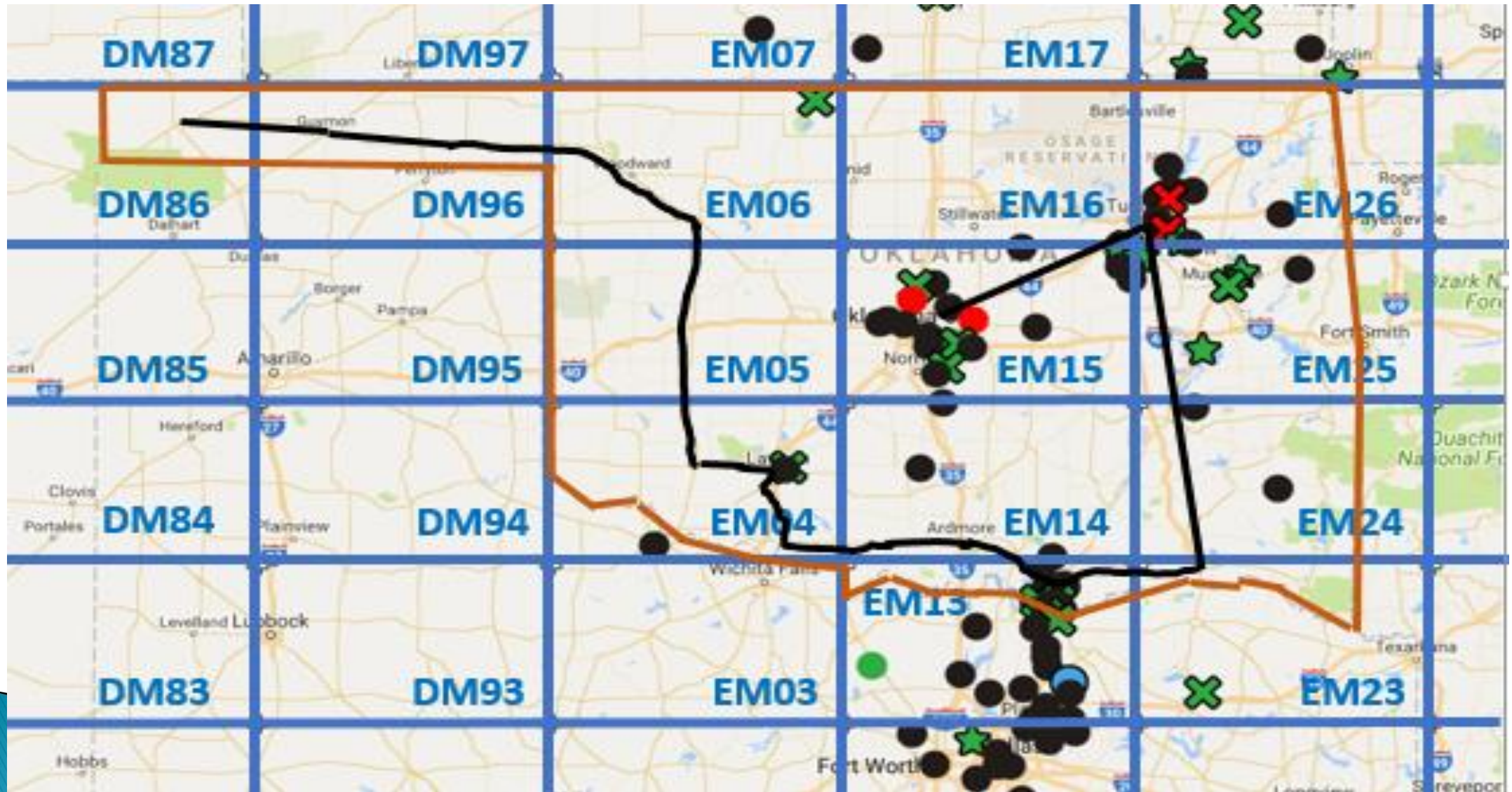
Start 1:00 PM – 20 minutes in the parking lot at the Irving Convention Center – EM12

Depart 1:20 PM – Irving Convention Center - 1 hour travel time to Denton, TX – Arrive 2:10 PM – EM13

Operate 10 minutes at a stop near Denton, TX

Depart at 2:20 PM from Denton, TX – EM13

Our Theme – Work All Oklahoma Grids!



Designing a Mount for Four Horizontal Gain Antennas

- 1 ½" schedule 40 PVC
- Wood mount for bolting to the Tahoe roof rack
- PVC cement the “layers” together
 - for a lego stacking approach
 - for strength



Lego Shelves



Station 1 - SSB 2m, 1.25m, 70cm, 23 cm



Laptop harness over seat back



Station 2 – SSB and Digital 6m



Station 3 – FM 2m & 70cm

- ▶ No picture!
- ▶ Kenwood TM-D710 radio

Final Antenna Layout



N3FJP Networked VHF Contesting

N3FJP's VHF Contest Log 5.2 www.n3fjp.com

File Settings Band Mode View Recall Help

■ Current Band & Mode **Recent Contacts** ○ Last 20 ● All

Rec	Call	Rcvd	Grid R	Snt	Grid S	Date / Time	Bnd	Mode	Pnts	Operator

Score Statistics

Total Contacts 0

Total QSO Points 0

Total Multipliers 0

Total Score 0

QSOs / Hr (Last 20 min) 0

QSOs / Hr (Last 60 min) 0

Call **Rec** **Grid** **Snt**

DN43	DN53	DN63	DN73	DN83	DN93	EN03	EN13	EN23	EN33	EN43	EN53	EN63	EN73	EN83
DN42	DN52	DN62	DN72	DN82	DN92	EN02	EN12	EN22	EN32	EN42	EN52	EN62	EN72	EN82
DN41	DN51	DN61	DN71	DN81	DN91	EN01	EN11	EN21	EN31	EN41	EN51	EN61	EN71	EN81
DN40	DN50	DN60	DN70	DN80	DN90	EN00	EN10	EN20	EN30	EN40	EN50	EN60	EN70	EN80
DM49	DM59	DM69	DM79	DM89	DM99	EM09	EM19	EM29	EM39	EM49	EM59	EM69	EM79	EM89
DM48	DM58	DM68	DM78	DM88	DM98	EM08	EM18	EM28	EM38	EM48	EM58	EM68	EM78	EM88
DM47	DM57	DM67	DM77	DM87	DM97	EM07	EM17	EM27	EM37	EM47	EM57	EM67	EM77	EM87
DM46	DM56	DM66	DM76	DM86	DM96	EM06	EM16	EM26	EM36	EM46	EM56	EM66	EM76	EM86
DM45	DM55	DM65	DM75	DM85	DM95	EM05	EM15	EM25	EM35	EM45	EM55	EM65	EM75	EM85
DM44	DM54	DM64	DM74	DM84	DM94	EM04	EM14	EM24	EM34	EM44	EM54	EM64	EM74	EM84
DM43	DM53	DM63	DM73	DM83	DM93	EM03	EM13	EM23	EM33	EM43	EM53	EM63	EM73	EM83
DM42	DM52	DM62	DM72	DM82	DM92	EM02	EM12	EM22	EM32	EM42	EM52	EM62	EM72	EM82
DM41	DM51	DM61	DM71	DM81	DM91	EM01	EM11	EM21	EM31	EM41	EM51	EM61	EM71	EM81
DM40	DM50	DM60	DM70	DM80	DM90	EM00	EM10	EM20	EM30	EM40	EM50	EM60	EM70	EM80
DL49	DL59	DL69	DL79	DL89	DL99	EL09	EL19	EL29	EL39	EL49	EL59	EL69	EL79	EL89
DL48	DL58	DL68	DL78	DL88	DL98	EL08	EL18	EL28	EL38	EL48	EL58	EL68	EL78	EL88
DL47	DL57	DL67	DL77	DL87	DL97	EL07	EL17	EL27	EL37	EL47	EL57	EL67	EL77	EL87

Ready to begin!

Please select your band and mode from the menu options!

Possible Duplicates Any Portion

DM42 Total = 0

Bearing: Miles: Cont:

Start tracking op time 00:00:00

Band: 6 Mode: PH

N0LD/R
RS(T)
EM15
 View Bands

7:45:46 AM
11:45:46 UTC

WSJT-X - 6m digital operation

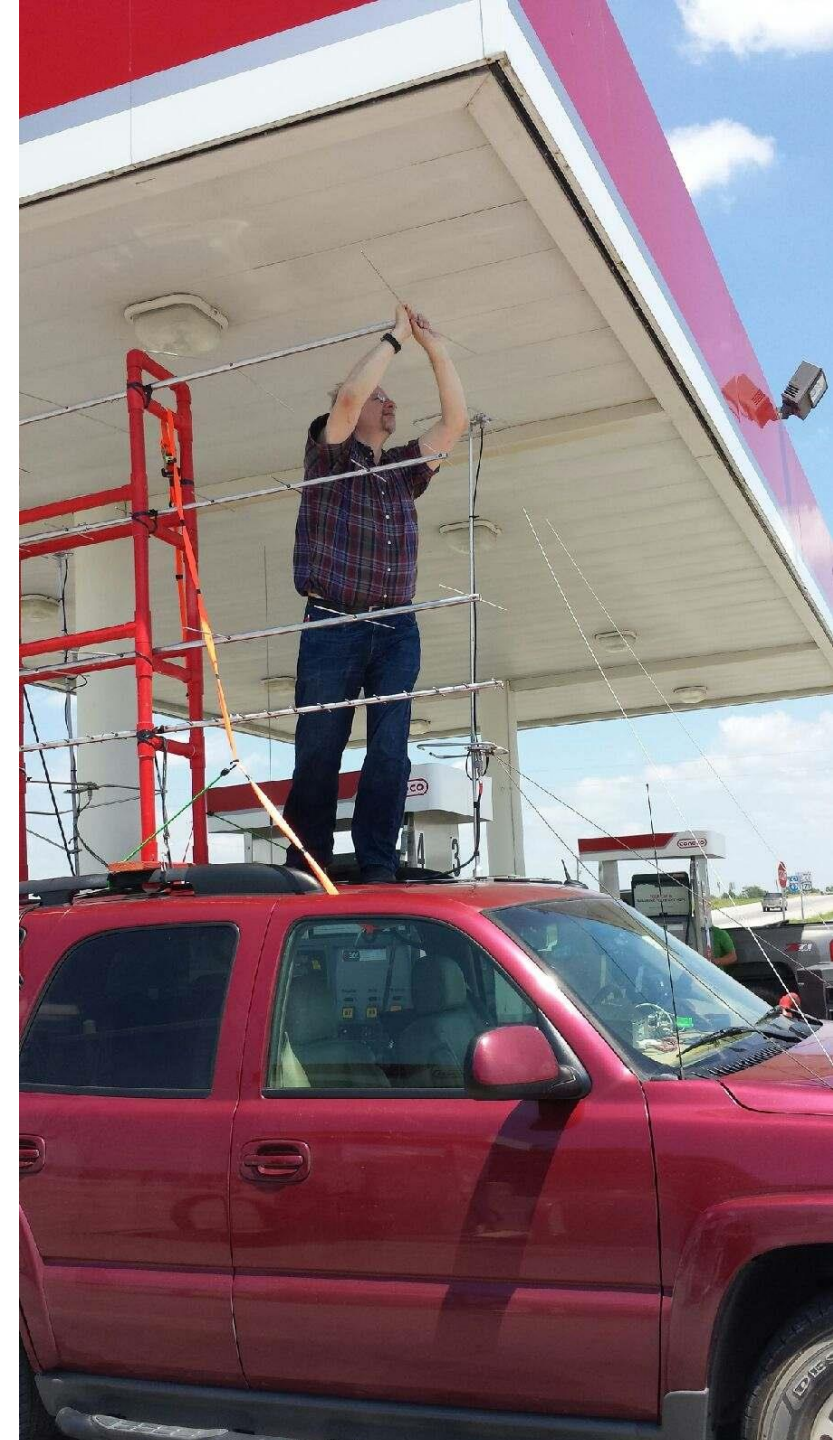
The screenshot displays the WSJT-X v1.7.0 software interface, which is used for 6m digital operations. The main window is titled "WSJT-X v1.7.0 by K1JT" and includes a menu bar with options: File, Configurations, View, Mode, Decode, Save, Help.

The interface is divided into several sections:

- Band Activity:** A window showing a grid for monitoring activity. The columns are labeled UTC, dB, DT, Freq, and Message.
- Rx Frequency:** A window showing a grid for monitoring received frequency. The columns are labeled UTC, dB, DT, Freq, and Message.
- Wide Graph:** A window titled "WSJT-X - Wide Graph" showing a frequency spectrum. The x-axis is labeled with values 500, 1000, 1500, 2000, 2500, 3000, 3500, and 4000. A red box highlights a signal at approximately 1500 Hz.
- Control Panel:** Located at the bottom, it includes a frequency display (2190m), a power level indicator (0.000 000), and various control buttons such as Log QSO, Stop, Monitor, Erase, Decode, Enable Tx, Halt Tx, and Tune. It also features a "Generate Std Msgs" section with a list of messages and a "Tx even/1st" checkbox.
- Status Bar:** At the bottom, it shows the current mode (FT-847) and the active message (JT9+JT65).

Pending Improvements

- ▶ Full voice keying using MFJ-434
- ▶ Full 2m digital
- ▶ Allow a little more time for stops, less grids
- ▶ Increase visibility of rover activity B4 the contest
- ▶ *Interest others in VHF contesting!*



START-OF-LOG: 3.0
CREATED-BY: N3FJP's VHF Contest Log 5.4
CONTEST: ARRL-VHF-JUN
CALLSIGN: N0LD/R
LOCATION:
CATEGORY-OPERATOR: MULTI-OP
CATEGORY-STATION: ROVER
CATEGORY-TRANSMITTER: UNLIMITED
CATEGORY-POWER: LOW
CATEGORY-ASSISTED: ASSISTED
CATEGORY-BAND: ALL
CATEGORY-MODE: SSB
CLAIMED-SCORE: 20610
OPERATORS: N0LD, KB0YHT, W0HGJ, KC0MTM
NAME: Randy Wing
ADDRESS: 17301 Reasnor Dr
ADDRESS-CITY: Choctaw
ADDRESS-STATE-PROVINCE: OK
ADDRESS-POSTALCODE: 73020-3918
ADDRESS-COUNTRY:
EMAIL: n0ld@arrl.net
QSO: 144 PH 2017-06-10 1822 N0LD/R EM12 K5ND EM12
QSO: 432 PH 2017-06-10 1825 N0LD/R EM12 K5ND EM12
QSO: 50 PH 2017-06-10 1827 N0LD/R EM12 K5ND EM12
QSO: 144 PH 2017-06-10 1836 N0LD/R EM12 K5QE EM31
QSO: 144 PH 2017-06-10 1840 N0LD/R EM12 K5LLL EM10
QSO: 144 PH 2017-06-10 1847 N0LD/R EM12 AA5AM EM13
QSO: 432 PH 2017-06-10 1840 N0LD/R EM12 AA5AM EM13

Log & Score



Consider joining the fun!