



160m operations from
KH8 American Samoa

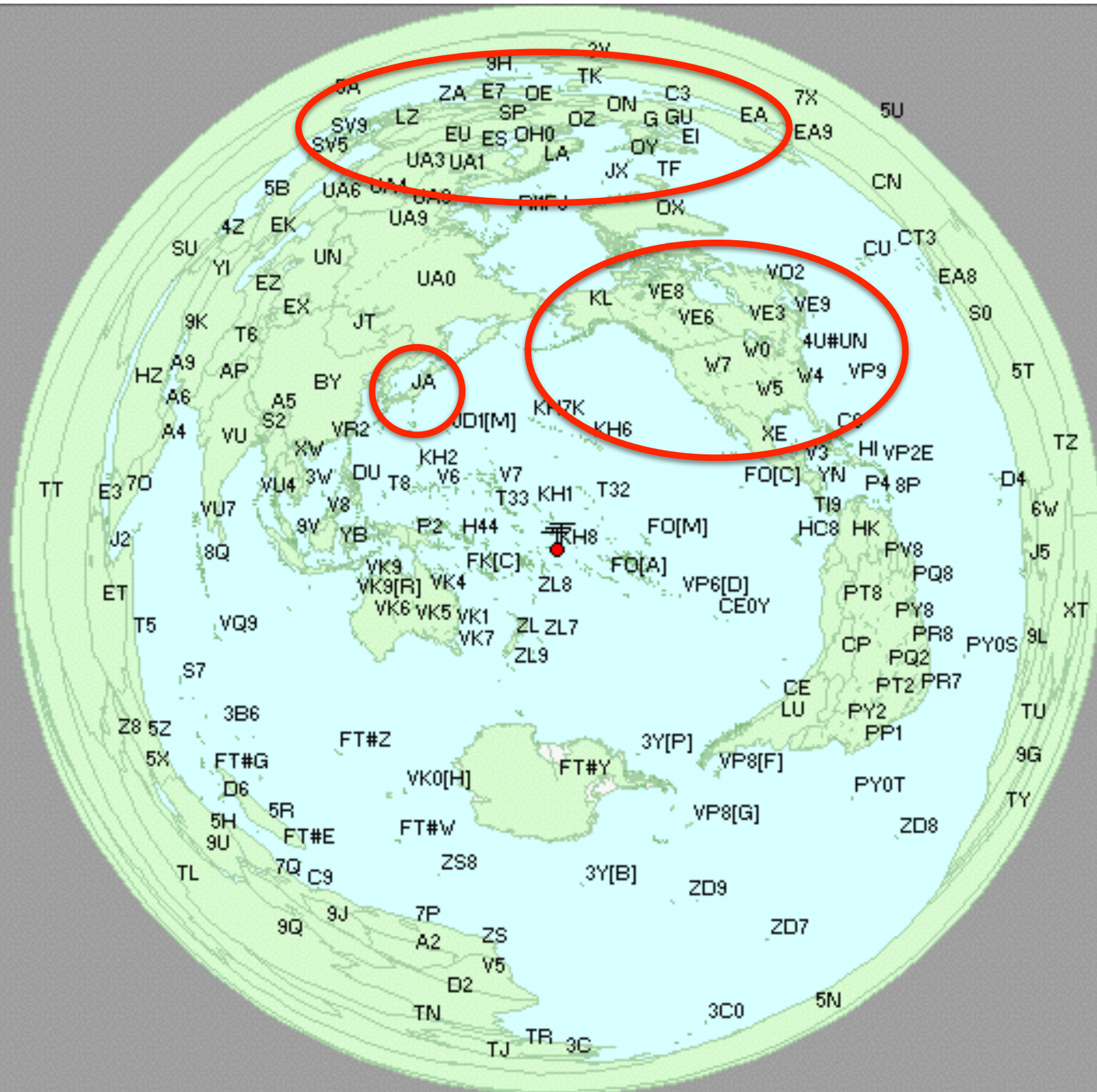
W8A/N8A and future

Masahiro Kitagawa

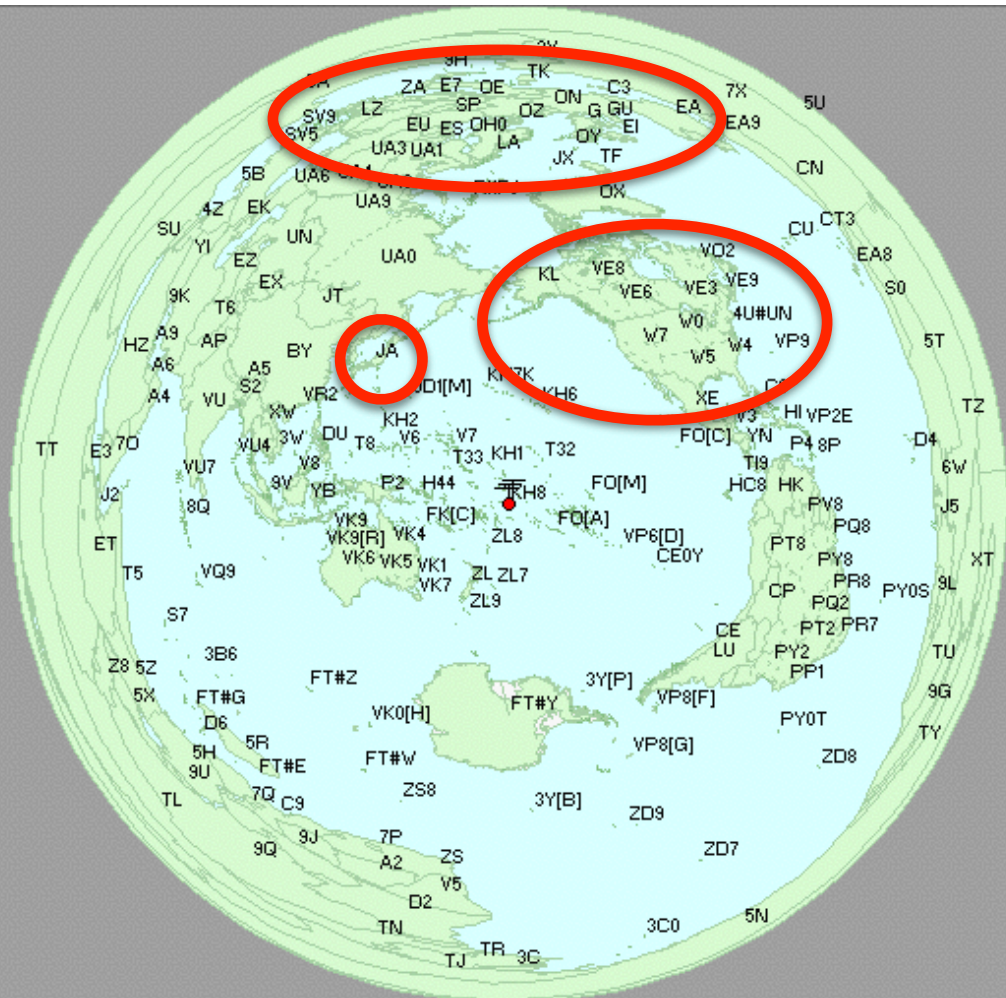
JH3PRR, KH8B, MOITU

22 Aug. 2014 Tokyo Topband Meeting

The world from KH8



Where should we go?

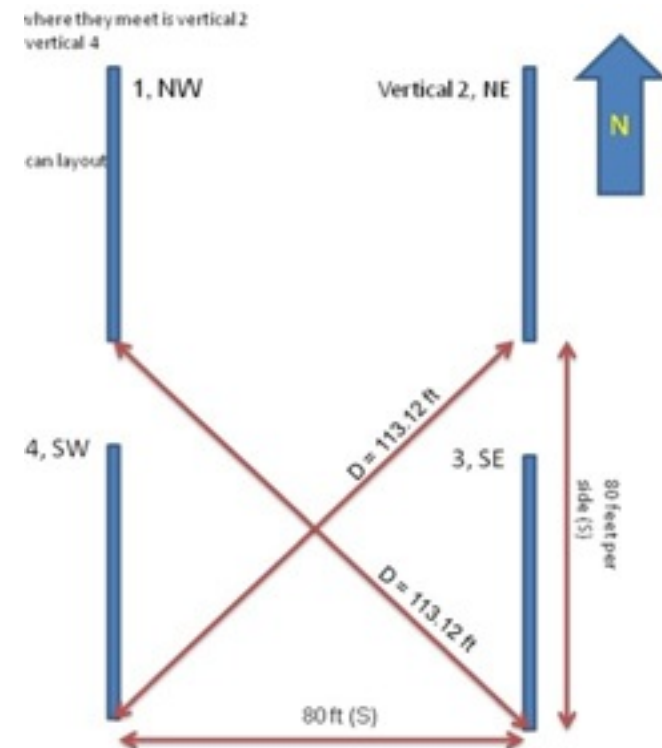




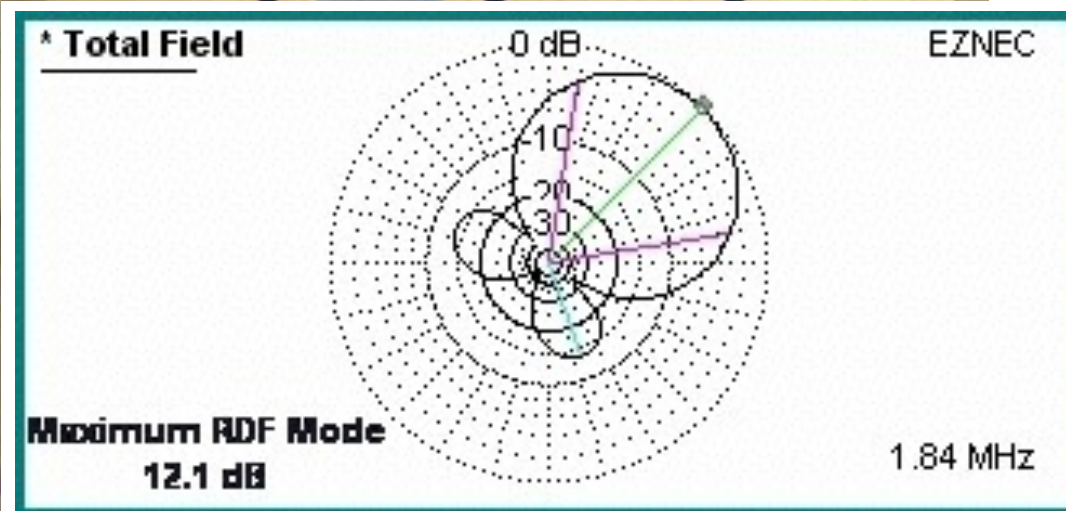
Our Lodge



Unpacking RX 4SQ Array



feed coaxes, elements
delay lines, **guy ropes**



<http://www.hizantennas.com/>

Spiderbeams are up!

But I will never do it again



160m Vertical is up!

18m Spiderbeam glassfiber pole

Top hat 4 wires (8m long each)

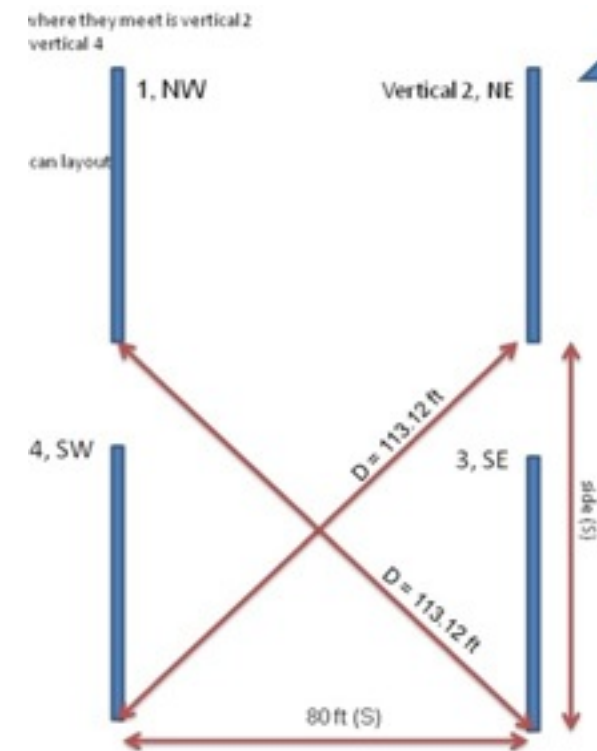
16 QWL grand radials

LC matching box



So where is RX 4SQ?

- Ground rod does not penetrate more than a half feet almost everywhere!
- I have searched for 24 feet square points in entire Lodge property in vain
- We are on the huge ROCK! covered by very thin layer of soil
- We had to give up RX 4SQ



Reversible Beverages

- Still have to find 4 points for ground rods, but the length of Beverage is arbitrary
- North-South 100m, East-West 150m approx.



W8A/N8A Antennas

- 160m Vertical
- 80m Vertical
- 40m Vertical
- 30m Vertical
- 20-10m Spiderbeam with 40m DP
- 20-10m Spiderbeam with 30m DP
- 6m F9FT



W8A statistics

Band/Mode breakdown

Band	CW	PH	RTTY		Total	Total %
160	451	0	0	0	451	1.9%
80	848	78	0	0	926	4.0%
40	3103	135	0	0	3238	13.8%
30	2175	0	246	0	2421	10.4%
20	2553	824	327	0	3704	15.8%
17	3465	221	220	0	3906	16.7%
15	3498	114	292	0	3904	16.7%
12	2307	152	476	0	2935	12.6%
10	1349	437	113	1	1900	8.1%
Totals	19749	1961	1674	1	23385	

DXCC by Band/Mode breakdown

	CW	PH	RTTY		Total
160	19	0	0	0	19
80	56	8	0	0	56
40	89	23	0	0	90
30	88	0	32	0	88
20	99	67	43	0	104
17	97	33	20	0	98
15	97	13	22	0	99
12	82	23	25	0	86
10	50	17	10	1	53
Totals	140	83	66	1	143

Continent By Band

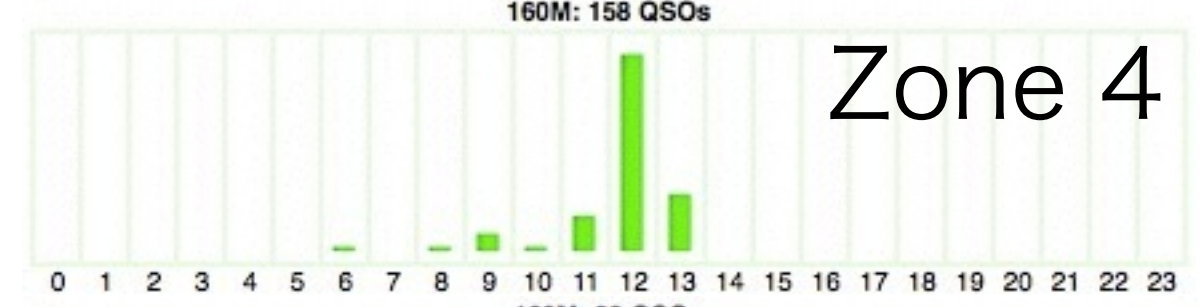
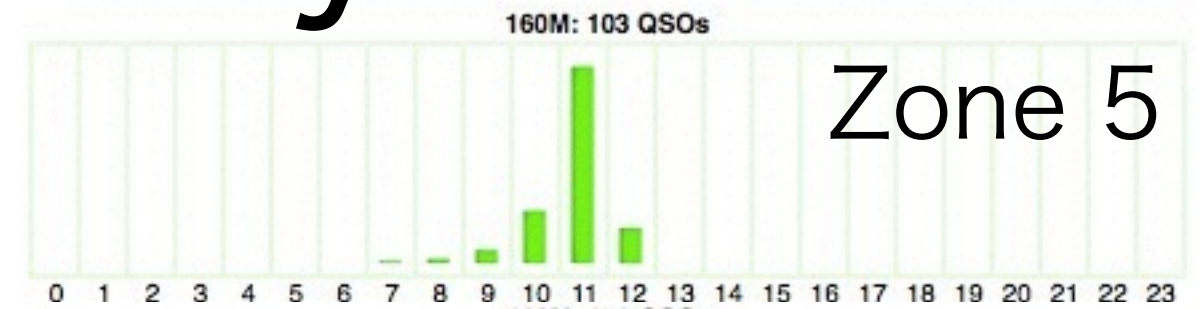
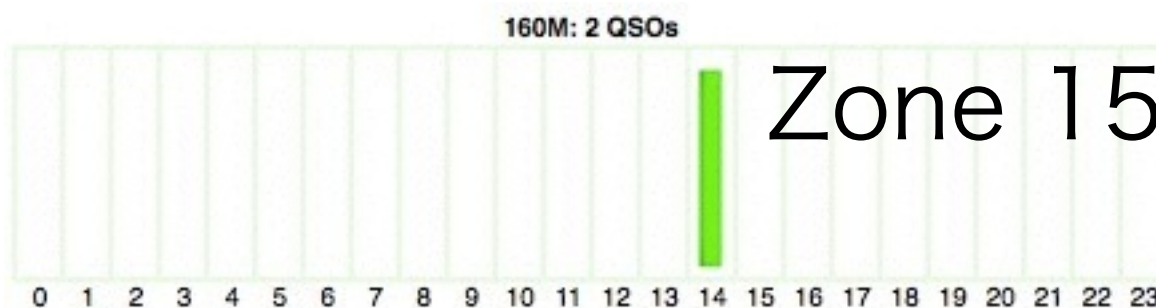
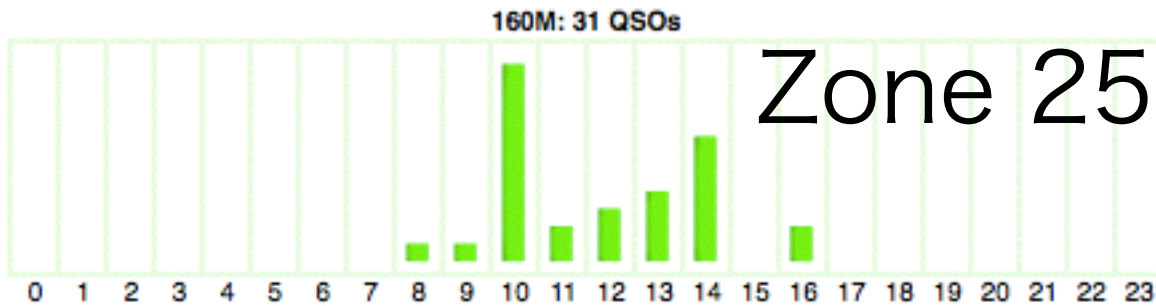
Band	160	80	40	30	20	17	15	12	10	Total	Total %
AF	0	0	7	11	19	29	19	13	4	102	0.4%
AN	0	0	0	0	2	1	1	1	0	5	0.0%
AS	41	327	1250	774	950	1120	1131	533	365	6491	27.8%
EU	18	245	870	738	1905	990	574	353	88	5781	24.7%
NA	356	293	975	790	649	1581	1965	1847	1274	9730	41.6%
OC	36	59	99	76	103	94	89	91	72	719	3.1%
SA	0	2	37	32	76	91	125	97	97	557	2.4%
Totals	451	926	3238	2421	3704	3906	3904	2935	1900	23385	



K3 with sub-RX + 2K-FA 1.5kw
 K3 + KPA500 + KAT500 500w
 3rd K3 was dead

W8A 160m by Zone

KH8 SS 0517z / SR 1737z



from ClubLog W8A page

W8A Lowband LP Europe

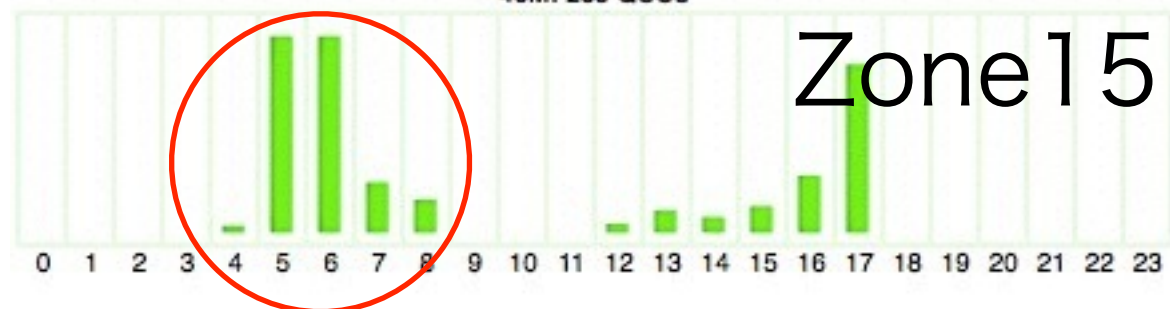
40M: 227 QSOs

Zone 14



40M: 233 QSOs

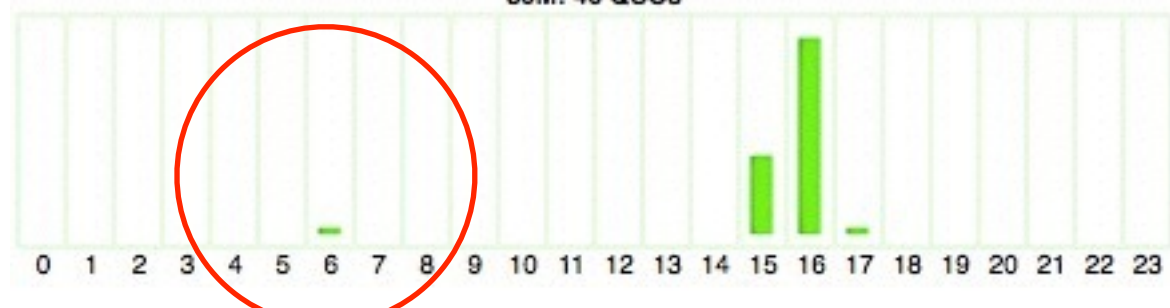
Zone 15



80M: 30 QSOs



80M: 40 QSOs



40M: 368 QSOs

Zone 16



40M: 57 QSOs

Zone 20



80M: 171 QSOs



80M: 8 QSOs

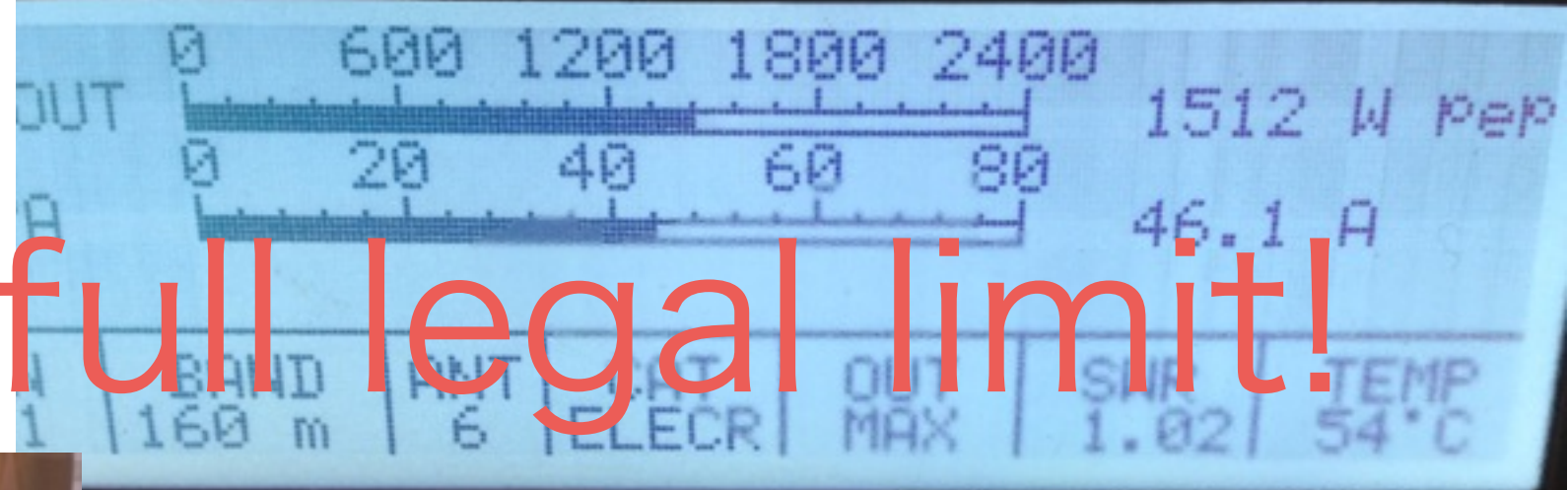


- LP on 40m for Zones 14 and 15 dominant

KH8 SS 0517z / SR 1737z

- LP on 80m for Zone 14 (UK) effective from ClubLog

Running full legal limit!



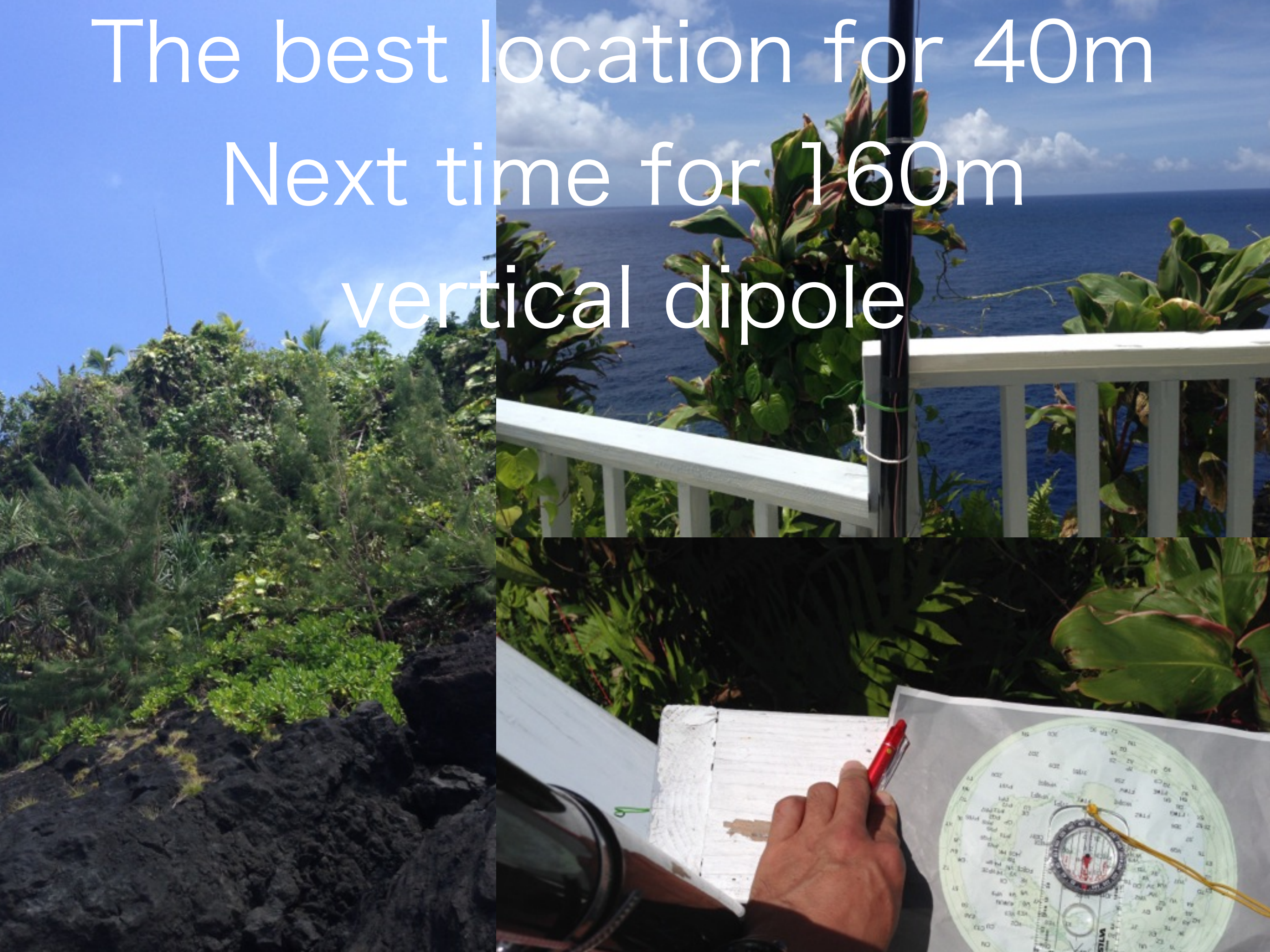
- SPE Exert 2K-FA powered by 230V Range/Dryer outlet
- Yet weak like a barefoot?
- Elecraft K3 with sub-RX Diversity receiving
- We hear better than most of the callers on 160m



Why W8A was so weak on 160m? (compared to 80m)

- **Prop**agation: NA was not so bad. 356 Qs on 160m vs. 296 Qs on 80m
- **Bad GND**: High GND R -> Inefficient Vertical
 - 5W8A was stronger (same ANT, **fewer radials, only 500W**, but **beach location**)
- Antenna location: Not bad but not the best

The best location for 40m
Next time for 160m
vertical dipole



The best QTH in Tutuila Isle?

Probably YES!

- remote from mountains



W8A

- remote from towns
- 230V for 1.5kW
- Tsunami safe

Possible RX ANT improvement

- Short RX Vertical with ground radials,
Phased by
 - Coax delay line (if ANT separation is fixed)
or
 - Phase Controller: DXE-NCC-1
(QST Aug. 2014, p.52), or
 - ANAN-100D/200D phase
variable diversity



\$599.95



RX short verticals

Hi-Z vs. Low-Z?

- Hi-Z vertical
 - is susceptible to nearby objects; Trees, Buildings, Wires, Antennas, Metals
 - is non-resonant (wideband)
 - requires amplifier at feed point for Z conversion
 - suffices with short GND rod
- Low-Z vertical
 - is less susceptible to nearby objects
 - does not need amplifier at feed point
 - is resonant (mono bander) and a little longer
 - requires better ground radials

TNX to W3LPL's presentation
in Contest Univesity
at ARRL Centennial Convention

Low-Z RX short vertical

TNX to W3LPL's info

- W8JI (first described)

http://www.w8ji.com/small_vertical_arrays.htm

- W5ZN and N4HY (more detailed)

<http://www.w5zn.org/160%20Meters.html>

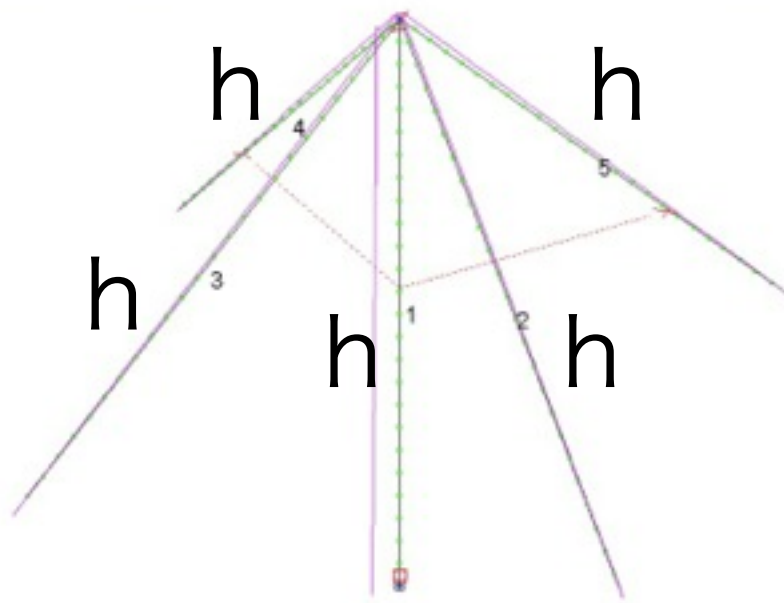
Design, Construction & Evaluation of the 8
Circle Vertical Array for Low Band Receiving
(PDF available for download)

2010 Dayton Hamvention Antenna Forum

<http://www.kkn.net/dayton2010/w5znn4hy.pdf>

RX short vertical array

From W5ZN's presentation



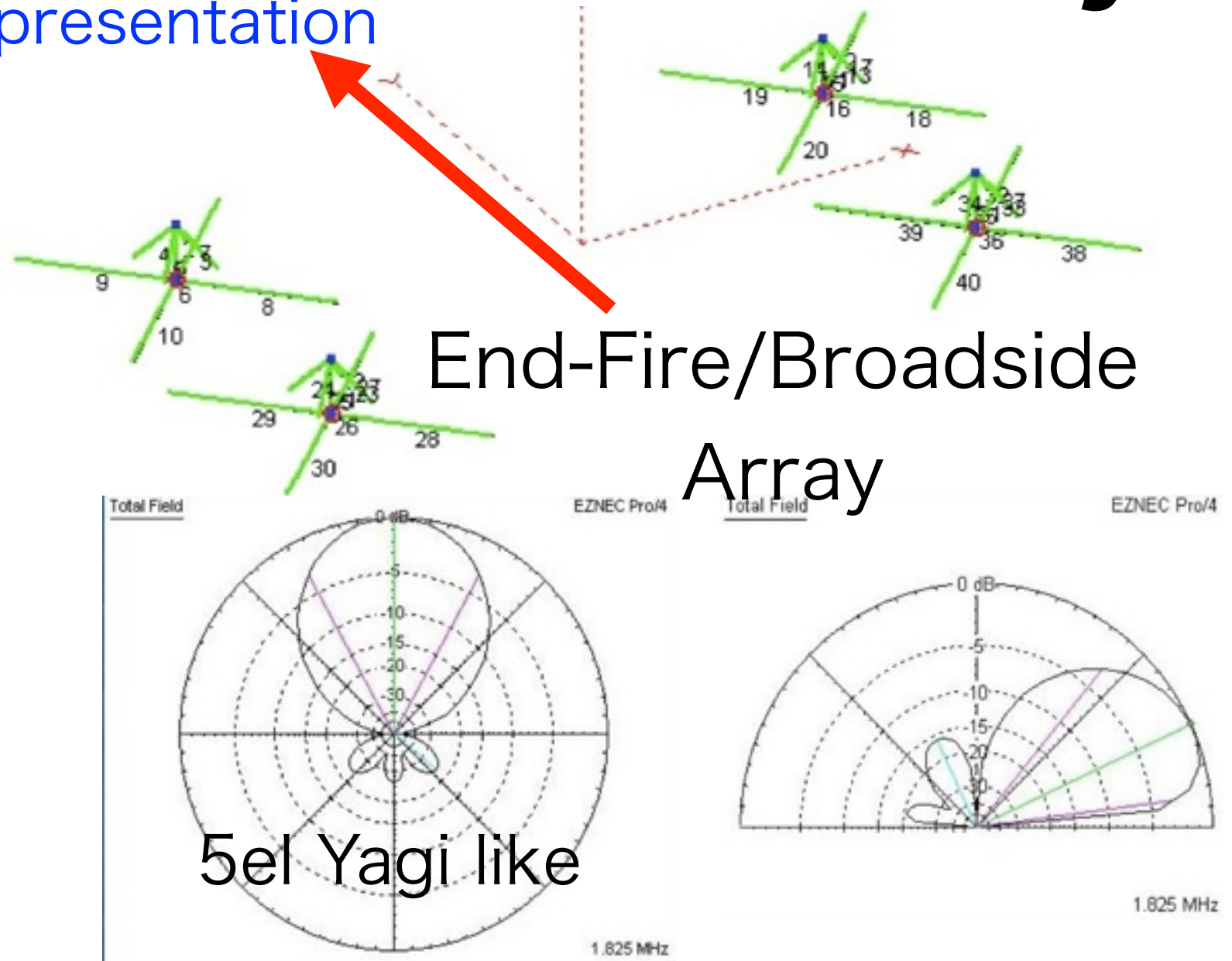
$h=25\text{ft}=7.6\text{m}$

Base loading

$30\mu\text{H}@160\text{m}$

$2\mu\text{H}@80\text{m}$

+R for lowering Q



- End-Fire array will be realistic for DXpedition & JA
- Separation $< 1/4$ WL for highest band

W5ZN ANT farm

Photo & Data from W5ZN's
presentation & Web

160 Meter DX Standings
224 DXCC Countries
37 Zones

Recent New Countries Worked on 160 Meters
Winter 2013/2014 Season

11-14-13	K9W	Wake Island	LoTW
11-20-13	Z81X	Republic of South Sudan	LoTW
11-20-13	W8A	American Samoa	LoTW
01-15-14	4K6FO	Azerbaijan	LoTW
02-18-14	DP1POL	Antarctica	LoTW
3-8-14	7Z1SJ	Saudi Arabia	Direct
3-15-14	9J2T	Zambia	LoTW

beaming to
W8A

KH8B

21-27 Oct. 2014 for CQ WW PH
160m CW before and after contest
See you!

If you need 160m engineer/operator
for your next DXpedition,
please let me know!



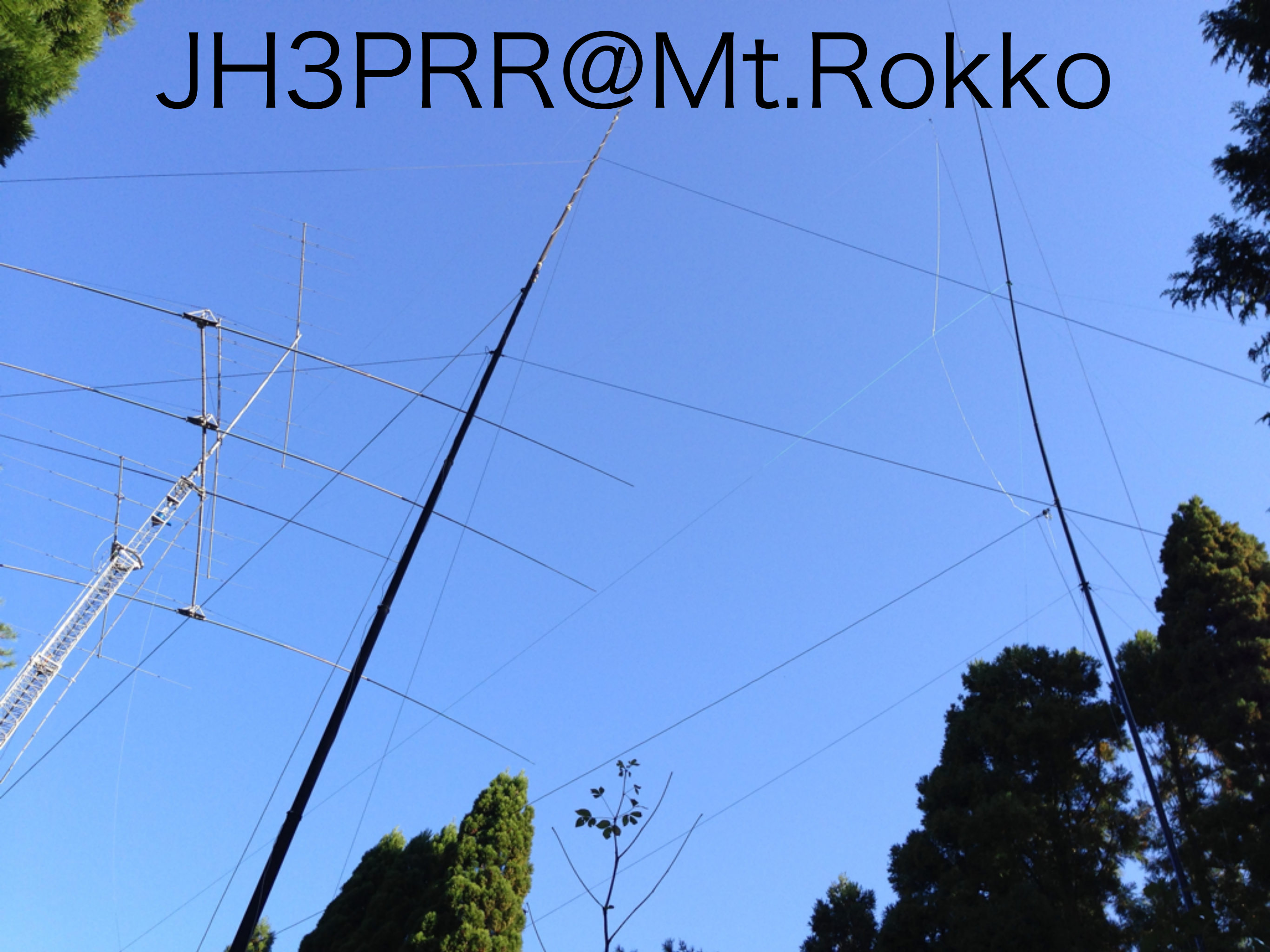
EXTRA CLASS
ACCREDITED VOLUNTEER
EXAMINER

Name Masahiro Kitagawa

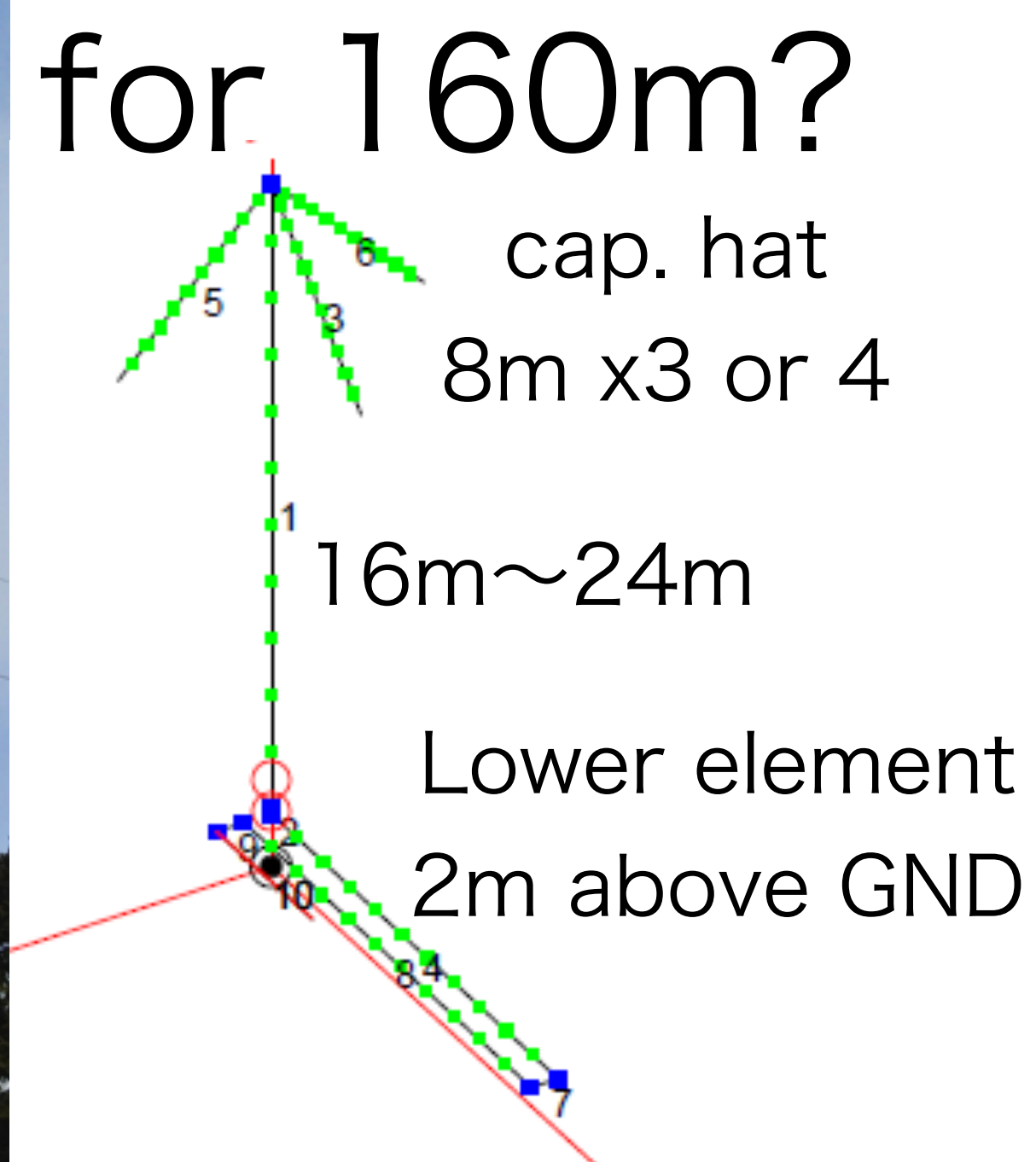
Call sign KH8B

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Vertical Dipole for 160m?



Stub match



TNX for your attention!
de JH3PRR, KH8B, M0ITU