Experiences with Light-Weight DXpedition to CEØY with KX3 and Expert 1.3K-FA

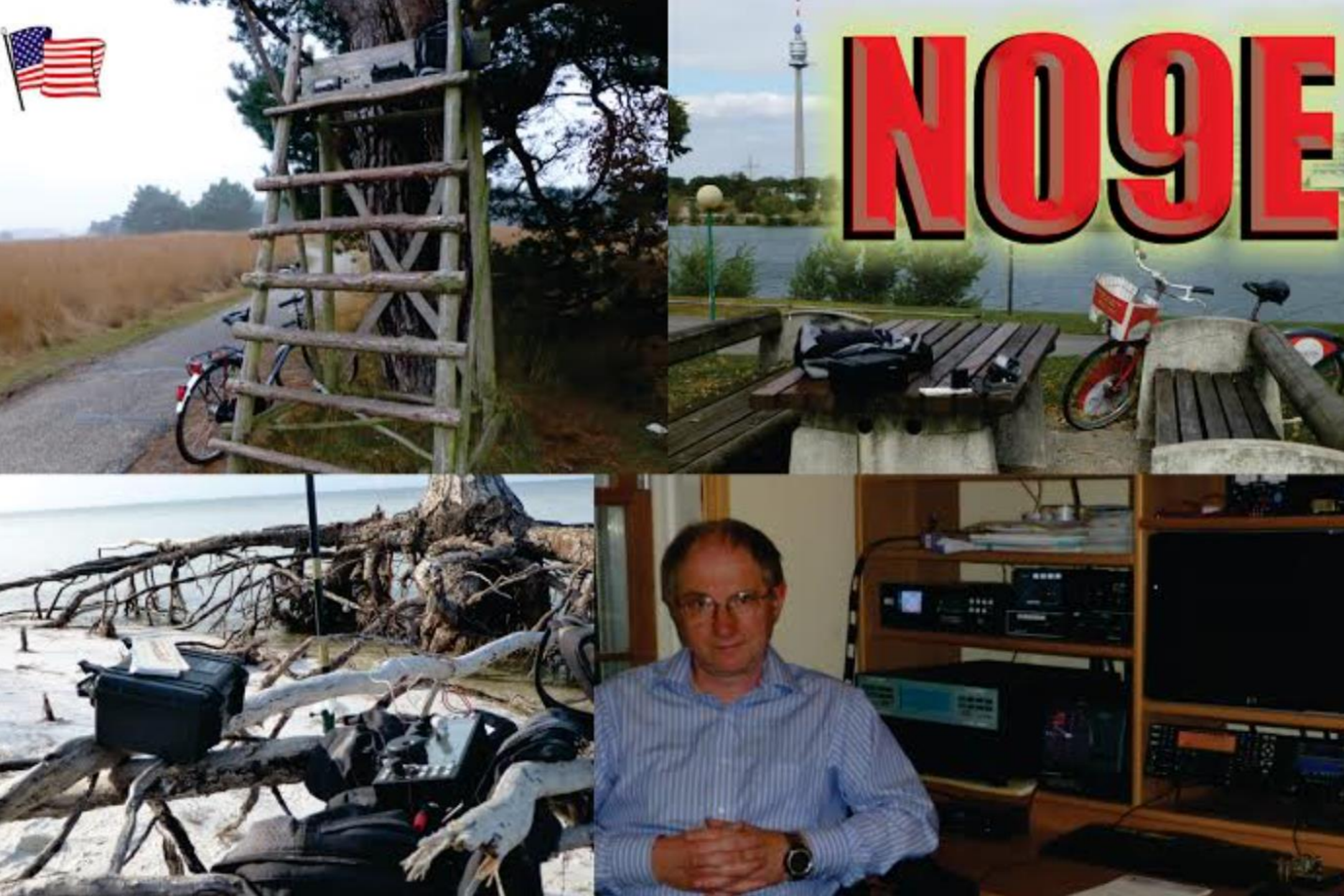
by Ignacy Misztal

NO9E, SP8FWB, VK2ISF, 7P8NO

SP8FWB & NO9E

- Licensed 1972
- Homebrewed tube radios 1972-73, Transistor radios 1974-75
- DXCC in SP
- NO9E since 1986 (all in one sitting)
- Now 9BDXCC and honor roll

- Operated from
  - ***NA: W, VE, KP2***
  - ***SA: PY, CX, LU, VE, CE, CE0Y***
  - ***AF: ZS, ET, 7P8NO***
  - ***OC: VK2ISF, ZL***
  - ***AS: TA, JA, 4X***
  - ***EU: DL, EA, EI, ES, F, G, GI, GM, HA, I, LA, OE, OH, OH0, OM, ON, OZ, OH, PA, SM, SV9, SP, TA***


NO9E


ELECRAFT K2 TRANSCEIVER
BAND+
DISPLAY
BAND -
ANT 1/2
MENU
NB
MODE
A/B
A>B
PRE/ATT
AGC
XFIL
RIT
XIT
MSG
KEYER
POWER
RATE


KH6/NO9E

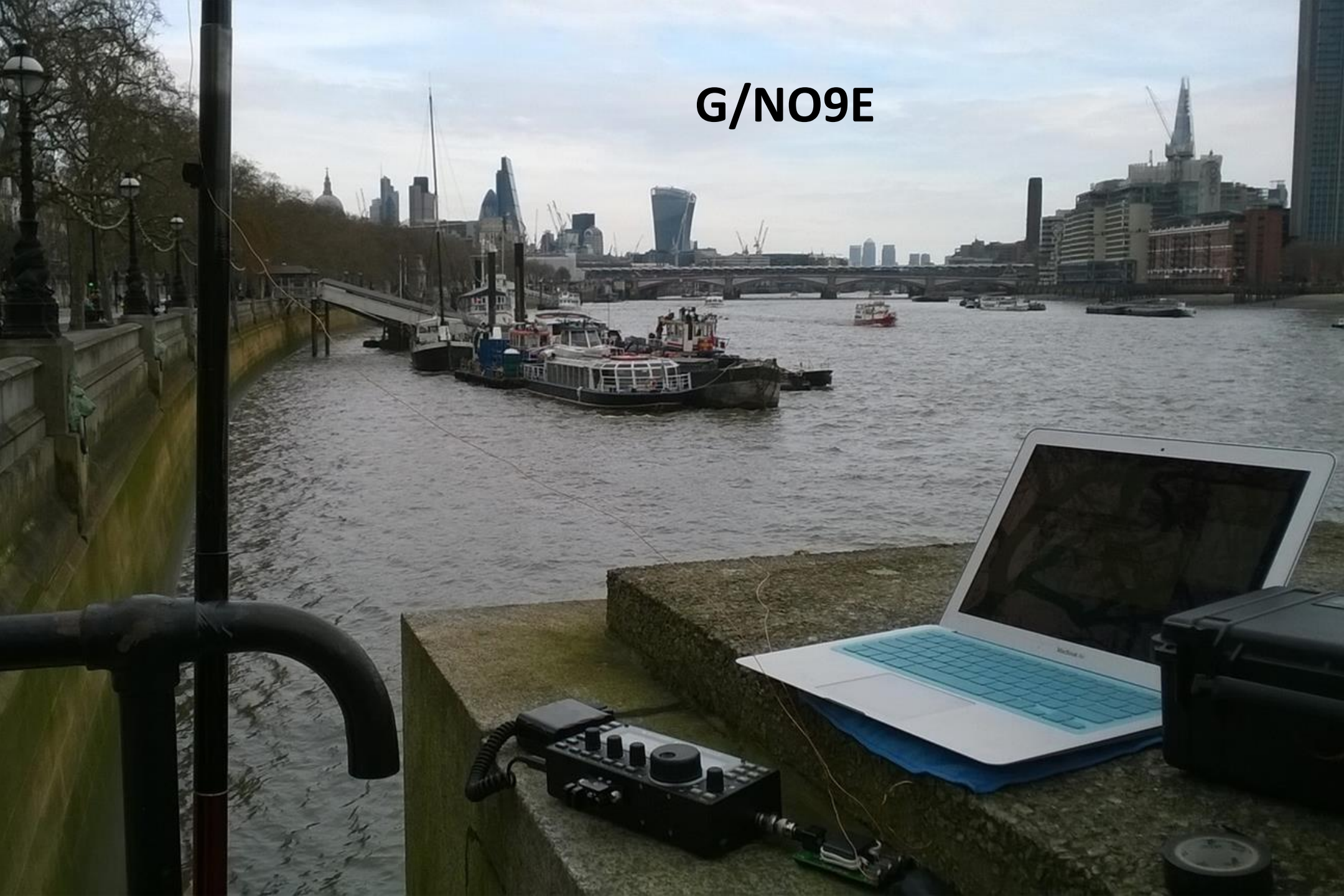
ZS/NO9E


Hefty
OPEN
ELECRAFT KX3 TRANSCEIVER
AMATEUR RADIO STATION
MINILOG
CALL SIGN
N0YE
BOOK NO 2/KX3
SANGEAN
PORTABLE SHORTWAVE
REEL ANTENNA
SANGEAN
PORTABLE SHORTWAVE
REEL ANTENNA


Powerizer
(For LI-ION Pack)
MODEL: 3P30-L3016
INPUT: AC100~240V
50/60Hz 0.4A
OUTPUT: DC16.8V/1.8A
Caution: For use with 14.8V
LI-ION Pack only
Indoor use only
E243187
LISTED
Class 2 transformer
13LE
CE
AA PORTABLE POWER CORP


FLUEGER
AUTOMATIC
MODEL • 1195
1:1
4:1
A
GND
B
RF INPUT


4X4/NO9E


G/NO9E


GI/NO9E


OH0/NO9E


OH/NO9E

SWR / Status
Tune
>3.0
2.0
1.5
Z-11 Pro
LDG
Tune
Store
L Up
Hi/LoZ
L Dn
Thresh
C Up
C Dn
Auto
Func
FUSE
ICOM


C Up
L Up
Func
C Dn
L Dn
Tune
SWR / Status
Z-11 Pro
LDG
ICOM
HF/VHF/UHF TRANSCEIVER IC-7000
MODE
P.AMP
ATT
TUNER
/CALL
MENU
NB
ADJ
NR
LEV
MNF
ADJ
ANF
BAND
F-1
F-2
F-3
F-4
ICOM HM-151


12.8V 20Ah
Warning
JETSTREAM
METER
GAMMA

VK2/NO9E


7P8NO


ELECRAFT
RCL
STORE
SCAN
REC
ATU TUNE
ANT
XMIT
TUNE 0
MON
NORM
PWR
PRE
ATTN
APF
SPOT
CMP
DLY
NR 1
NB 2
NTCH 3
CWT 4
PITCH 5
VOX 6
TX
ALT
REV
TEXT
SPLIT
PF1
PF2
OFS
CLR
KHZ
MENU
Expert 1.3K - FA
1.8 - 50 MHz Solid State
INPUT
ANT
BAND
TUNE
ON
CAT
DISP
OFF
SET
PWR
OP
Fully Automatic
Linear Amplifier


EXPERT 1.3K-FA
FCC ID: 2ADK5GC324809
Serial No.: 161700437
100/255 Vac
Made in Italy
ANT.4
ANT.3
ANT.2
ANT.1
SO2 R
INPUT 2
INPUT 1
AUX
USB
PORT
ALC2
RY2
CAT2
ALC1
RY1
CAT1


SPE CAT

KX3 + Expert 1.3k-fa

- Expert 21 lb
  - ATU up to 3:1
  - Automatic 110/220CV conversion
  - 1.3kW with about 10 W drive (IMD3 ~ 30 db)
- Kx3 2 lb
  - Up to 12-15W
- Total < 30 lb

What compact antenna(s) with compact KW?

- Single band dipole or vertical
- + wideband tuner for multiband operation
  - Size + noise
- Parallel dipole or vertical – 2 to 3 bands

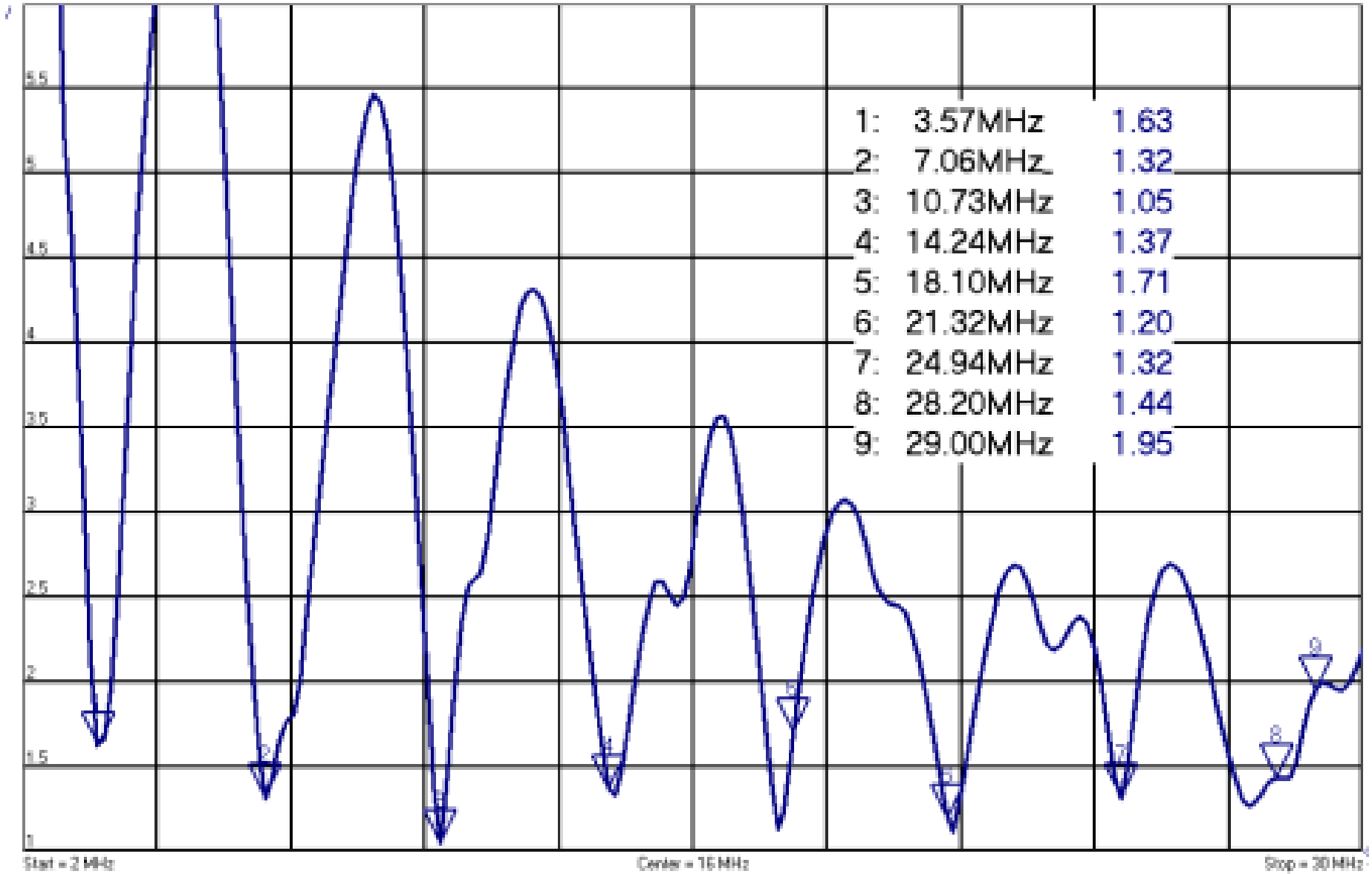

MFJ VERSA TUNER III
1.5 KILOWATT ANTENNA TUNER
MODEL MFJ-962C
TRANSMITTER
ANTENNA SELECTOR
ANTENNA
SWR
INDUCTOR
LAMP
METER
ELECRAFT KX3 TRANSCEIVER
INPUT
ANT
BAND
TUNE
Expert 1.3K - FA
1.8 - 50 MHz Solid State
Fully Automatic
Linear Amplifier
CAT
DISP
SET
PWR


MFJ
Watts
FORWARD
REFLECTED
SWR
SWR
ANT
C-UP
L-UP
TUNE
MODE
C-DN
L-DN
POWER
SWR 1 1.2 1.5 2 3 ∞
PWR 0 25 50 75 100 300
HI x10
MFJ IntelliTuner™
AUTOMATIC ANTENNA TUNER
1500 Watts SSB / CW
MODEL
MFJ-998
RCS-4
1 2 3 4
ON
PWR
OFF
SELECT
AMERITRON
remote coax switch
1 2 3 4 5
AMERITRON RCS-8V REMOTE COAX SWITCH

160-**40-20-15-10**

160-**80-40-**30-**20-17-15-12-10**

Endfeds from myantennas.com


1: 3.57MHz 1.63
2: 7.06MHz 1.32
3: 10.73MHz 1.05
4: 14.24MHz 1.37
5: 18.10MHz 1.71
6: 21.32MHz 1.20
7: 24.94MHz 1.32
8: 28.20MHz 1.44
9: 29.00MHz 1.95
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
Start = 2 MHz
Center = 16 MHz
Stop = 30 MHz


ELECRAFT KX3 TRANSCE
RCL
STORE
SCAN
REC
ANT
TUNE
ALT
REV
TEXT
SPLIT
PF1
PF2
RX
TX
MON
NORM
PWR
CLR
TX
XHZ
MENU
NR 1
NB 2
NTCH 3
CWT 4
PITCH 5
VOX 6
Expert 1.3K - FA
1.8 - 50 MHz Solid State
INPUT
ANT
BAND
TUNE
CAT
DISP
SET
PWR
ON
OFF
Fully Automatic
Linear Amplifier


Easter Island
Hanga Roa
Atamaca Desert
Bolivia
STATE OF MATO GROSSO DO SUL
STATE OF MINAS GERAIS
Paraguay
Asuncion
STATE OF SÃO PAULO
São Paulo
STATE OF PARANÁ
Chile
STATE OF SANTA CATARINA
STATE OF RIO GRANDE DO SUL
Córdoba
Uruguay
Santiago
Buenos Aires
Argentina
Montevideo
Puerto Varas
Patagonia


Easter
Island


South Pacific Ocean
Easter Island
(Rapa Nui)
Hanga Roa
Hanga Piko
Mataveri
Mataveri International Airport
Anakena
Cape Nord
A Tonge
Papa Tekena
Point San Juan
Vai Mata
Vai Taru Kai Ua
Caleta Anakena
Nau Nau
Point Rosalia
Maikati Te Moa
Volcano Terevaka 507 m
Te Pito Kura
Hekii Bay
La Pérouse
Tau A Ure
Taharoa
Cape O'Higgins
Te Pou
Volcano Puakatike 378 m
Cape Cumming
Motu Ko Hepoko
Motu Tautara
A Kivi
Mount Pui 302 m
Maunga Ana Makaria 185 m
POIKE
Volcano Rano Raraku
Cape Roggeveen
Motu Marotiri
Vaka Kipo 216 m
Maunga O Tu'u 300 m
Maunga Te Kahu Rano
HATU HI
Tongariki
Huiaki
Point One Tea
Tahai
Mount Tuutapu 270 m
Maunga Kosa Miro Ocore 194 m
OROI
Point Cuidado
Hanga Tetenga
One Makihi
Tu'a Tahi
Huri A Urenga
Runga Va'e
Oroi
Akahanga
Ura Urenga Te Mohino
Te Ata Hero
Ana Kai Tangata
Maunga Orito 220 m
VAIHU
Point Baja
Hanga Te'e
Tarakiu
Hanga Poukura
Hanga Hahave
Vinapu
Baseepu Harbour
Orongo
Volcano Rano Kau
Point Kikiri Roa
Motu Kau Kau
Cape South
Motu iti
Motu Nui
Road or major track
Minor track
Populated place
Vinapu Ahu (ceremonial platform)
Moai
Petroglyphs
Ruins
UTM projection (WGS84 datum)
Scale: 1:372,050
Santiago
CHILE
BRAZIL
ARGENTINA

Problems and Questions

- Does make sense to go to CE0Y – intense work and few preparations ➔problems?

- CQ WW SSB –opportunity or curse?
- If CQ WW – what band?

- Conditions very unstable
  - 10-15 m may be dead
  - Frequent lousy conditions in 2016 (G1 and G2)

Rank	Call	Year	Category	Score	QSOs	Zn	Cty	I
1	CE0ZIJ	1984	SO HP ALL	451,440	1,300	43	77	
2	CE0AE	1976	SO HP ALL	369,740	917	48	92	
3	CE0AE	1984	SO HP ALL	251,370	699	51	75	
4	SM2AGD/CE0	1972	SO HP ALL	174,625	490	58	67	
5	W6JXV/CE0	1983	SO HP ALL	9,331	101	16	15	

Gobierno de Chile

MINISTERIO DE TRANSPORTES Y TELECOMUNICACIONES
SUBSECRETARÍA DE TELECOMUNICACIONES

LICENCIA DE RADIOAFICIONADOS EXTRANJEROS

NOMBRE	MISZTAL IGNACY
SEÑAL DISTINTIVA	CE2/NO9E; CE0Y/NO9E
DOMICILIO	NATANIEL COX N° 1054
COMUNA	SANTIAGO
PROVINCIA	SANTIAGO
OTORGADO	22/08/2016

LICENCIA 43-4

REGIÓN RM

VENCE 15/11/2016

VISTO LO DISPUESTO EN LA LEY Y REGLAMENTO DEL SERVICIO DE AFICIONADOS A LAS RADIOCOMUNICACIONES, EL PORTADOR ESTÁ AUTORIZADO PARA INSTALAR Y OPERAR UNA ESTACIÓN DE RADIOAFICIONADOS COMO:

POTENCIA : 1200W

ZONA : TODAS.

Otorgado de acuerdo convenio entre Chile y ESTADOS UNIDOS .

Se autoriza a operar estaciones móviles terrestre.

Subsecretaría de Telecomunicaciones

REPUB. DE CHILE
SUB SECRETARIA DE TELECOMUNICACIONES

FRANCISCO MIRANDA OLIVOS
Jefe Depto. Servicios Públicos

POR ORDEN DEL
SUBSECRETARIO DE TELECOMUNICACIONES

FIRMA AUTORIZADA


Via
PG5M
Ahu Tahai
Hanga Roa
Pia Taro
Hotu Matua
Kai Tuoe
Camino Vaitea Anakena
Google


Cabañas Tokerau
Cabañas Krava Inn
CABAÑAS
KI TE RANG
Cabañas Te Pito Kura
Cabañas Honu Nui
El Museo Antropológico
Padre Sebastián Englert
Cabañas Hare Mi

Carry on with Expert – 22 lb
Carry on with KX3 + cables + accessories – 25 lb
Spiderbeam 12m pole – 5 lb
Main suitcase – 5 lb extra:

- Antenna analyzer aa 230Pro
- Five small fiberglass poles (4-8m)

Total about 60 lb (with packing)


Friday morning….


MyAntennas.com
MEF-330-2K
End Fed Half Wave
antenna transformer
3-30 MHz
Power 2kW ICAS
Made in USA


Haŋa Kio'e
PARQUE NACIONAL
RAPA NUI
Haŋa Kao Kao


PORO TU


MANUEL


MAORI TUPUNA

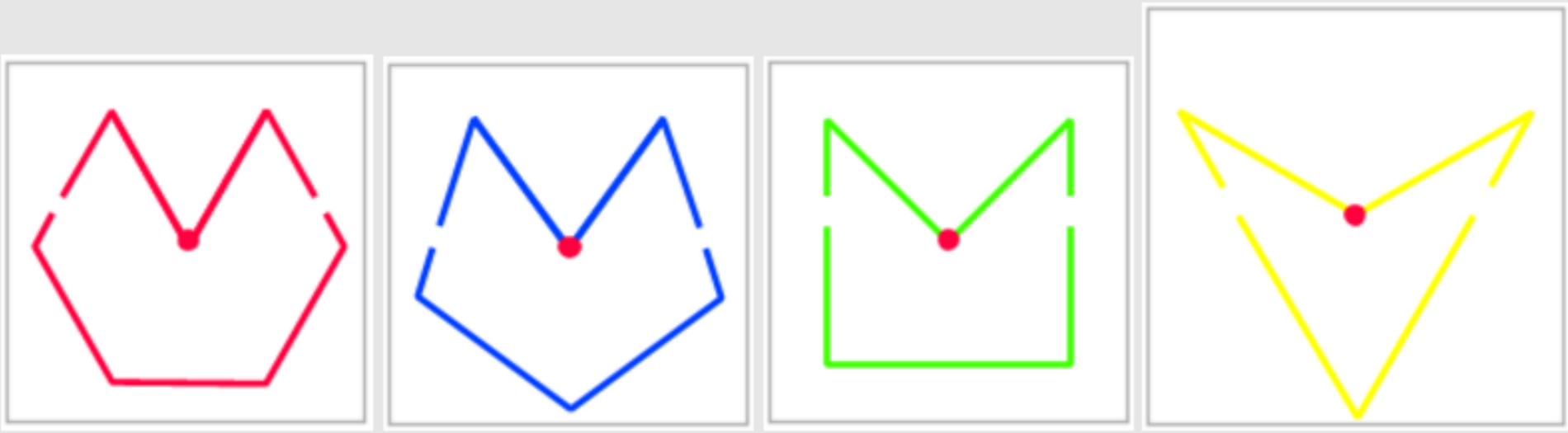
Contest on Saturday

- Morning: lots of stations on 15 and 10m
- Nobody hears CE0Y/NO9E
- After some time, spotted on 15m and pileup
- Visits by locals - frequency lost
- RFI on and off
- 2 PM – pileup on 15m
- 5 PM – pileup on 10m
- 7 PM – great pileup on 20m for 1 h, then conditions over
- A few stations on 40m – usually after a few tries
- No work after 11 PM – cold outside


Jose
CE0YHO
Esteban
XQ3UP

Issues

- RFI noise
- RFI noise
- …
- No foot switch
- MOX hard to press
- VOX great but sensitive to wind
- 2 voice memories in KX3
  - programmed into N1MM+
  - Could use 4
- Lenovo 100S laptop – no direct Fn keys



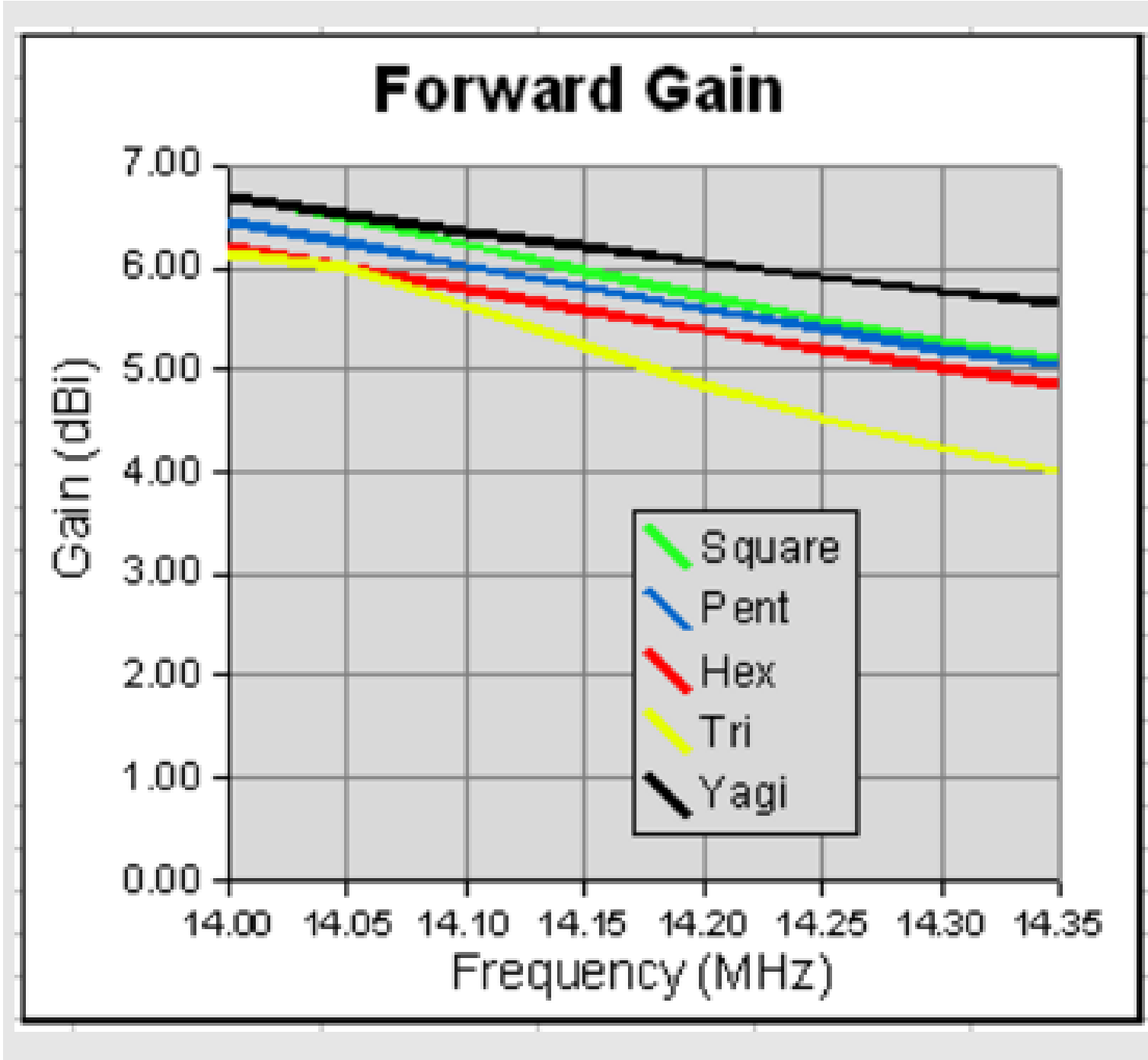
A systematic approach was taken to "optimise" the wire dimensions for 20m versions of the four antennas:

- The reflector length was adjusted to place the peak F/B at 14.150 MHz.
- The driver / reflector end spacing was adjusted to achieve a peak F/B ratio in excess of 30dB whilst tryin
- The driver length was adjusted to try to place the minimum SWR mid-band.

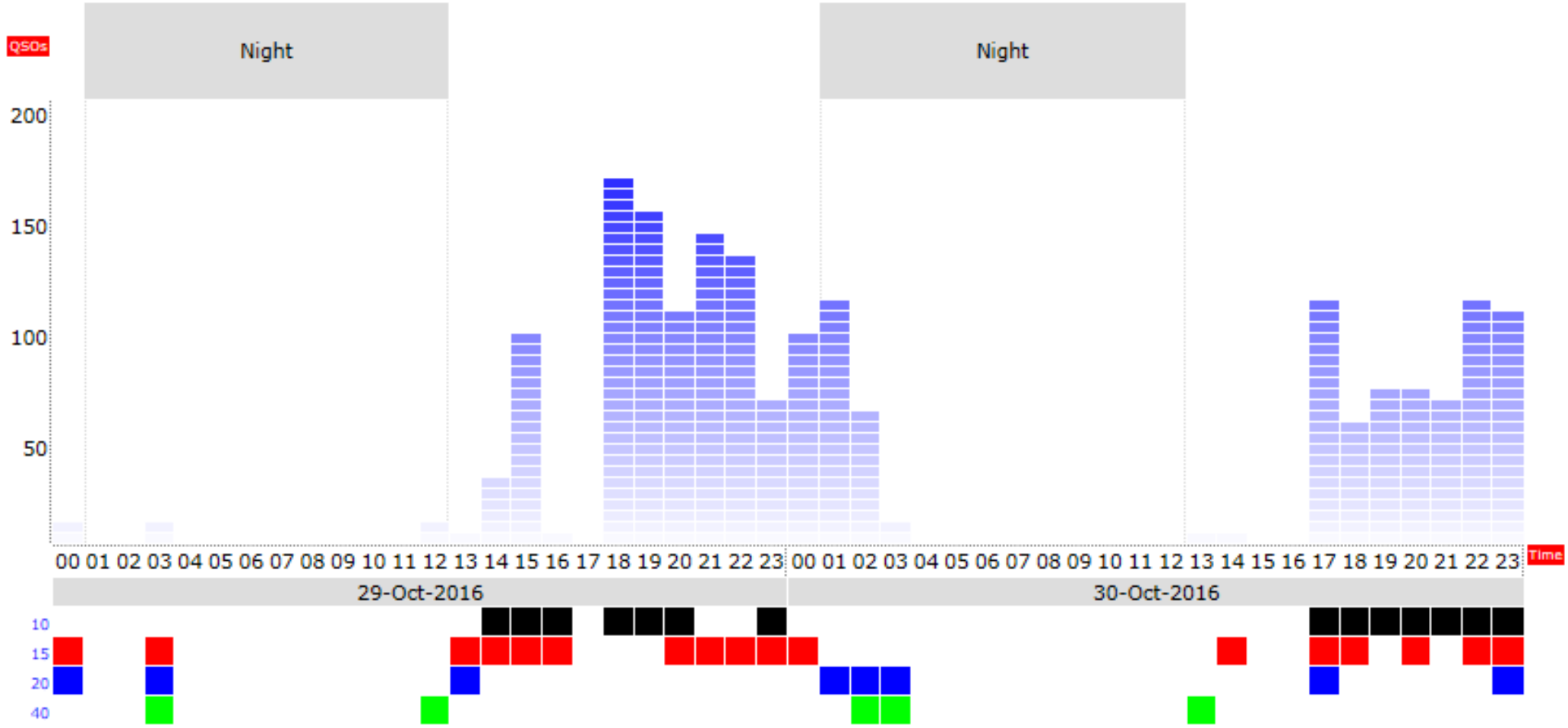
The final dimensions, using #16 gauge wire, which evolved from Free Space performance optimisation, were:

- Hex beam: half-driver 219", half-reflector 207.8", end spacing 30", turning radius 130"
- Pent beam: half-driver 219", half-reflector 208.7", end spacing 24", turning radius 135"
- Square beam: half-driver 218", half-reflector 210.5", end spacing 22", turning radius 145"
- Tri beam: half-driver 212", half-reflector 212", end spacing 40", turning radius 170"

http://www.karinya.net/g3txq/wire_beams/


Forward Gain
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
Gain (dBi)
14.00
14.05
14.10
14.15
14.20
14.25
14.30
14.35
Frequency (MHz)
Square
Pent
Hex
Tri
Yagi

Qs by hour


QSOs
Night
Night
200
150
100
50
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Time
29-Oct-2016
30-Oct-2016
10
15
20
40

Band	QSOs	Pts	ZN	Cty	Pt/Q
7	22	62	11	14	2.8
7	2	6	2	2	3.0
14	171	438	17	30	2.6
21	801	2267	24	59	2.8
28	682	1910	17	34	2.8
Total	1678	4683	71	139	2.8

Score: 983,430

1 Mult = 8.0 Q's

Band	NA	SA	EU	AF	AS	OC	All	%
10	565	71	4	6	50	8	704	40.3
15	583	70	58	6	116	12	845	48.4
20	114	38			8	12	172	9.9
40	5	2	9		7	1	24	1.4
%	72.6	10.4	4.1	0.7	10.4	1.9		

Possibility of better score

if inside – 30% more QSOs, 1.5 mults → double score

if no RFI – twice QSOs, twice mults → quadruple score

if no RFI and inside → 6 times?

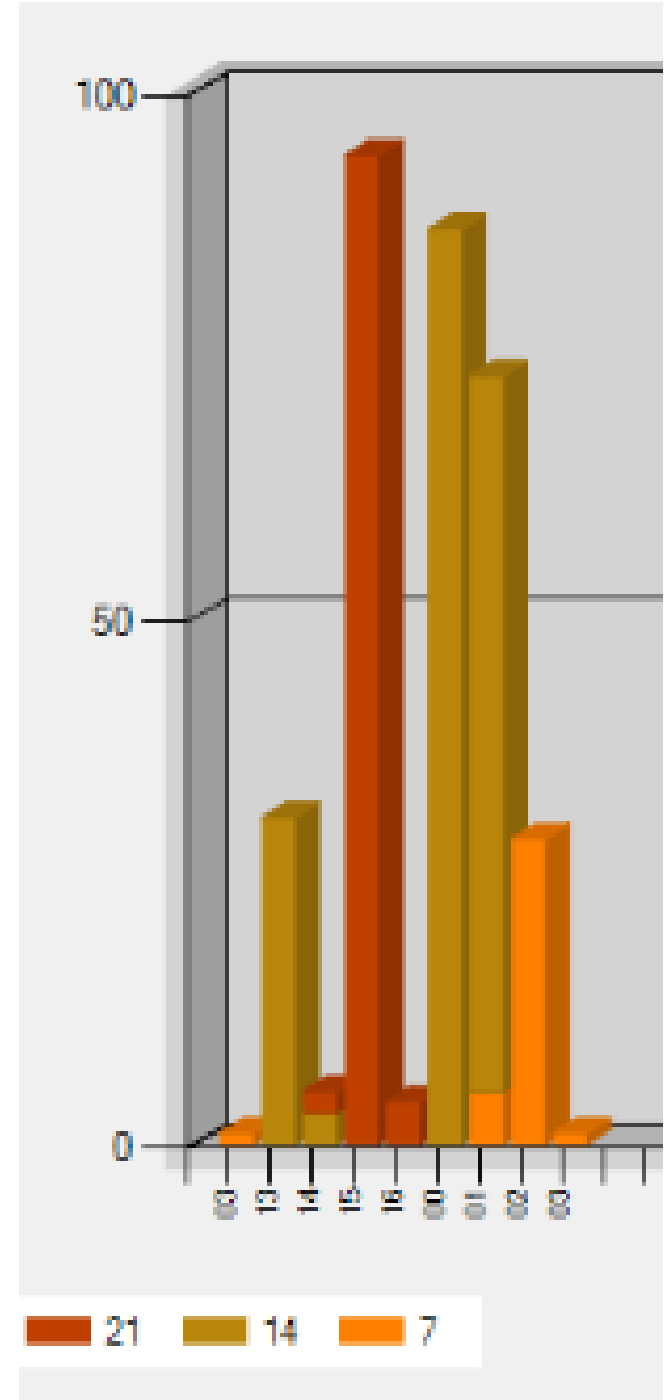

OUT
IN
CLIPPING LEVEL
0 3 6 9 12 15
PASS BAND
MIC
RF SPEECH PROCESSOR
TRANSCEIVER
BAND+
BAND-
FREQ ENT
SCAN
MSG
REC
ATU TUNE
XMIT
PRE
ATTN
APF
SPOT
CMP
DLY
TX
MODE
A/B
DATA
A►B
TEXT
SPLIT
RIT
XIT
RX
TX
OFS
CLR
RATE
DISP
KHZ
MENU


Pacific Ocean
Terevaka Volcano
Mt. Pui
Poike Volcano
Rano Raraku Quarry
Hanga Roa
Hanga Piko
Mataveri
International Airport
Rano Kau Volcano
Easter Island
(Rapa Nui)

MSR


MAHINA

Band	Mode	QSOs	Pts	Mlt
7	CW	36	36	11
14	CW	189	189	22
21	CW	100	100	19
Total	Both	325	325	52



Is kx3 fit for dxpedition

- Convenient controls - but hard buttons
- Reliability

- Ineffective speech processor
  - Lots of dupes, especially on 20m
  - Hard working on 40m, 3db would help

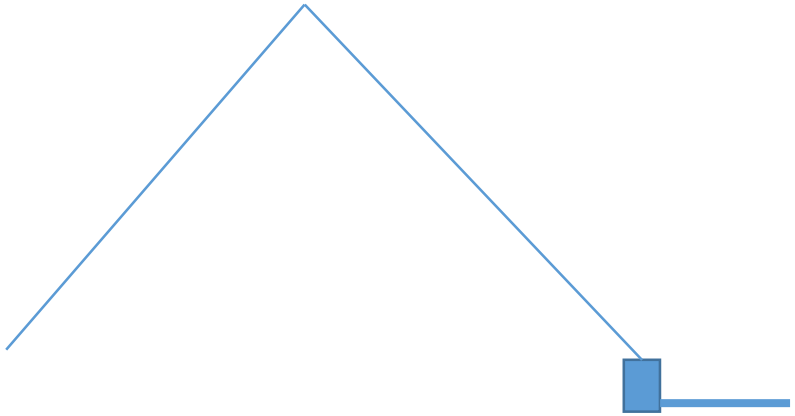
- 2 voice memories

- I/Q for panadapter + CW skimmer

Is endfed do-it-all antenna?

- 80 works on 160 with swr < 3:1
  - Probably 40 works on 80
  - How endfed works? Box not too hot. Ground losses?
- Beam with 20ga greatly superior to endfed
- K3 and beam ≈ 1.3k + endfed
  - Batteries, coast and solar batteries
- Endfed always good second antenna

Inv V – probably as good as regular inv V



Probably same performance
as with 9:1 unun + balun

As vertical: ground losses

How to deal with RFI?

- Noise canceller
  - Needs power
  - Takes time to cancel
  - Extra cables

Remote antenna

1.3k can use one input as antennas

- Active vertical
  - Wideband
  - noisy
  - needs power

- Remote radio via Wi-Fi
  - Needs lots of power
  - Complicated setup
  - Delay

How to deal with RFI - loops

- Tuned loop
  - needs tuning

- Wideband loop (Pixel, Wellbrook)
  - needs power
  - weak signal

- Compact boxes of Wideband loop (Wellbrook ALA100)

Come a day earlier and screen accommodations – if area not too busy

Unsung heroes

CQ Magazine, Oct 2017

The SSB weekend of the CQ World Wide DX Contest is this month, often featuring activity from rare locations. Those operations aren't necessarily major DXpeditions. Here's NO9E's story of his one-ham contest expedition to Easter Island (CEØY) during last year's CQWW SSB Contest.

Easter in October

Impromptu CQWW Contesting From CEØY

BY IGNACY MISZTAL,* NO9E

Photo A. Tourists from around the world visit Easter Island to see the nearly 900 ancient statues, or moai, built by early residents. They are thought to possibly represent deified ancestors. (Photos courtesy of the author)

Last October, I had to attend a conference in Chile, my first-ever visit to that country. It was a very busy

Access by Boeing's Dreamliner 10 is facilitated by a 2-mile-long runway built by the U.S. to provide an emergency

vision of visiting a unique island was far from being on the air all the time.

With the contest, another question

Conclusions

Different experience with compact KW

- You are heard
- Intense pileups if right QTH
- Simple antenna not bad
- Possible without extra luggage

Many components useful for improvisation – small size enough for KW

RFI serious problem everywhere – consider options

Consider low-weight beam and low weight mast