



NEW  
CASTLE

KENT

SUSSEX

# ***Adventures in HF Ham Radio from Lewes, DE ...etc***

***Ray Sokola K9RS***

***SARA Meeting***

***3/19/2015***

# *A little history*

- *I grew up in Delaware and graduated from the University of Delaware with an EE degree*
- *Left Delaware for 38 years after school*
- *Returned 2 years ago*
- *While away, I had pretty good stations in:*
  - *Illinois (twice)*
  - *Indiana*
  - *New Mexico*
  - *Pennsylvania*

# K9RS

*New Mexico*



**K9RS QTH 1990-1997 Albuquerque, New Mexico**



**K9RS**  
**Perkasio, PA**  
**2006-2012**

# ***Move to Lewes***

- ***No Antennas?***
- ***What can you do with stealth antennas?***
- ***Can I be happy with wires in the woods?***
- ***How competitive can I be?***
- ***I like the beach and Agave but will I enjoy Ham Radio?***

**K9RS QTH**



Blockho

Google earth



1992

Imagery Date: 7/3/2010

38°46'25.02" N 75°09'07.90" W elev 11 ft

eye alt 2728 ft





N

Google earth



1992

Imagery Date: 7/3/2010

38°46'28.76" N

75°09'09.98" W

elev

13 ft

eye alt

327 ft



# ***Giving it a try at Lewes QTH***

- ***Closed on house June 2013***
- ***First put up an Off Center Fed Dipole***
- ***Next a fan 40-20-10 dipole***
- ***Then put up 4 wires for 80 Meters***
- ***And an inverted L for 160 Meters***
- ***All 'invisible'***





ASTM D-1785 NSF-pw-g] WELL CASING IC-0 (ASTM F-480 (R&F-wg]) PVC-DWV ASTM D2

ASTM D-1785 NSF-pw-g] S-L-M 3A NC 019/L3 0197



*The 4 wires for 80M seemed to  
work pretty well*

*So...*

*I decided to try a single band 80M  
effort in 2013 CQ WW CW*

# ***CQWW CW 2013***

**SINGLE OPERATOR ASSISTED**

**HIGH POWER**

**3.5 MHz**

**K9RS/3.....248,880**

**N6SS/7.....207,834**

**K4JPD.....126,420\***

***K9RS/3 681 QSO's 27 Zones 109 Countries***

***4 Phased wire verticals (4 Square) in the woods***

***\*K4JPD - 3 element rotatable 80M yagi at 170 feet***

# *Other competition results*

Score

Contacts

Multiplier

## **2013 10 Meter CW only**

K9RS	941,176	1,668	142
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## **2014 ARRL DX SSB**

K9RS	1,972,869	1,448	457
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## **2014 ARRL DX CW**

K9RS	4,492,395	2,803	535
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# ***ARRL CW DX 2014***

**Band QSOs Mults**

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**160: 42 40**

**80: 209 74**

**40: 440 97**

**20: 538 104**

**15: 716 110**

**10: 858 110**

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**Total: 2803 535 Total Score = 4,492,395**

# CQWW CW 2014

Call: K9RS

Class: SOAB HP

Operating Time (hrs): 20

Summary:

Band	QSOs	Zones	Countries
160:	35	11	31
80:	226	26	97
40:	339	28	104
20:	213	38	121
15:	326	34	122
10:	419	31	120
Total:	1558	168	595

Total Score 3,396,876

*Missed 5 Band DXCC  
In 20 hours by 3 countries  
On 80 Meters*

# ARRL 10 Meter Contest 2014

SO CW Unlimited HP

Call	QSOs	Mults	Op Time	Score	Club
<a href="#">KP2Q(K3TEJ)</a>	2486	165	26	1,640,760	FRC
<a href="#">N9NC</a>	2258	170	26	1,535,440	YCCC
<a href="#">K9CT</a>	2021	171	23	1,382,364	SMC
<a href="#">K6LL</a>	2112	161	25	1,360,128	AOCC
<a href="#">N3RS</a>	1963	171	24.25	1,342,692	FRC
<a href="#">K9RS</a>	1973	169	26	1,333,748	FRC
<a href="#">N4BP</a>	2150	150	24	1,290,000	FCG
<a href="#">N5FO</a>	2026	159	26	1,288,536	AOCC
<a href="#">K07AA</a>	1815	171	23	1,241,460	AOCC
<a href="#">WU2X(K5GO)</a>	1858	165	28	1,225,620	YCCC

***K9RS 6<sup>th</sup> place finish on CW!***



***I was relearning:***

- ***A dipole is a pretty good antenna***
- ***Two element antennas are very good***
- ***Lot's can be done with wires and trees***
- ***It was possible to have fun!***

# Performance Rating for 20-10 Meter Antennas

10

World Record Potential

Large mono/multi-monobander stacks, etc. (verticals on salt water)

8

Lots of Enjoyment

Larger mono/multi-monoband Yagis

2 ele Yagi / smaller multi-monobanders >35'

6

Experiencing Fun of Radio

High efficiency trapped triband Yagi >35'

>95% horizontal dipole @ >35'

4

Some Fun, much frustration trying to work DX

Low efficiency trapped triband Yagi >35'

2

Missing a Lot

Trapped Vertical Over Ground

1

Lightbulb

Less than Dipole

-18dBd

< -10dBi

Dipole in Clear

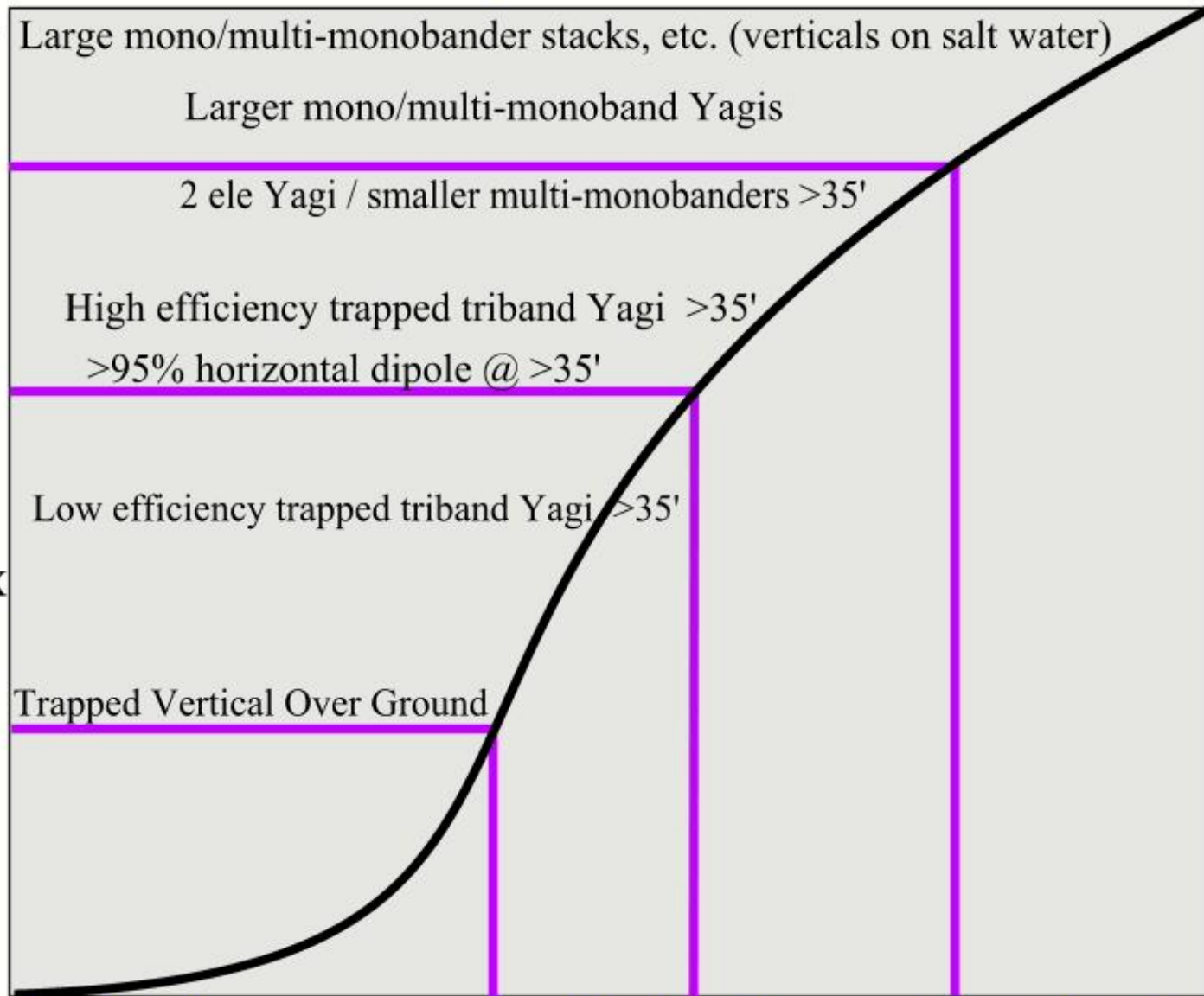
0dBd

7-8dBi

Greater than Dipole

+8dBd

> 15dBi



# NCJ Article

# NCJ

NATIONAL  
CONTEST  
JOURNAL

\$4

January/February 2015

www.ncjweb.com

Volume 43 Number 1

## Contest Results Issue!

- Results: March Sprint SSB
- Results: September Sprint CW
- Results: October Sprint RTTY
- NAQP and Sprint Rules
- Analyzing Competitive East Coast Sprint CW Scores
- Optimizing Stubs
- Looking at *Linux*

**Top:** K0RF shows us how he uses his "maintenance tower" to keep his 80 meter beam working. Veteran station builder W9RE offers the benefit of his expertise in "Station Tending," inside.

**Bottom:** Why is Zone 9 so easy to work? Hint: It's because of what happens in this room. Read about "Jumanji," inside.



\*\*\*\*\*  
ALL FOR ADC 197  
0006014604NCJ4301 ISSUES LEFT 9 P0  
RAYMOND L SOKOLA K9RS  
609 JACKSON AVE  
P-1 P47  
WILMINGTON DE 19804-2217

# NCJ Article

Ray Sokola, K9RS / k9rs@yahoo.com

## What It Takes to Build a Contest Station

Ham radio contests consist of signals on the air, and you can't have a signal without a station. How do contest stations get built? From an engineering or construction perspective, that's a very straightforward question that many NCJ articles have addressed. But, for many contesters, especially younger and newer contesters, the challenge isn't so much procuring and installing the Yagis, towers, and radios. It's also arranging your life, your relationships, and even your job in such a way that building a contest station is even possible. And, of course, finding a piece of land where you can make it happen.

Not all contesters build stations of their own; some very famous and capable contesters have spent their entire contesting careers as guest operators. My time in contesting has certainly included a lot of guest operating, but in a profession that as prompted several moves over the years, I've usually managed to put up a tower or two wherever I've landed. In Albuquerque, New Mexico and Indianapolis, Indiana, for example, I installed an 89-foot ink-up tower with a 2 element 40 meter Yagi and a KT34XA tribander. In Chicago I had a variety of towers, while in Perkasie, Pennsylvania, I had stacks on 40 thorough meters and 4 squares. In Lewes, Delaware, it is wires and whatever else I can up in the trees.

I like to share some reflections and observations on the tradeoffs and compromises that went into making a contest station happen.

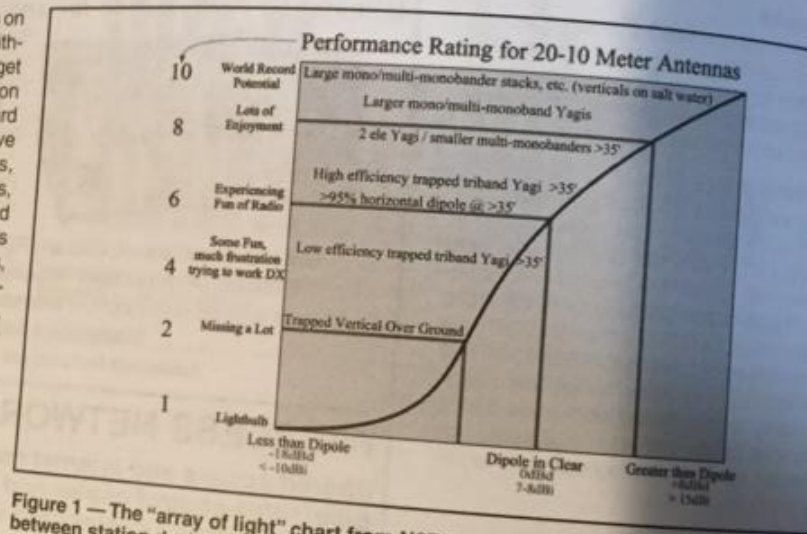


Figure 1 — The "array of light" chart from N6BT offers some insights into the tradeoffs between station design and contest performance. [Courtesy of Tom Schiller, N6BT]

patent covering cell phone duplexing. I liked thinking about the whole system and putting it together, and then never stopping the experimentation at trying to improve. Ham radio has been a big part of my life. There were always other things, of course, such as family, school, career, and sports that fought for priority with ham radio and because I always figured out a way to accommodate them.

This beat the 2 element 40 meter Yagi at 60 feet by a wide margin. Between education, work, family, and radio there are a lot of interrelated decisions to be made and priorities to set. I grew up and was first licensed in Delaware. Since then I put together satisfactory stations in Illinois, Indiana, New Mexico, and

# *K9RS Lewes Totals...so far*

*14,927 contacts*

## *DXCC*

**Mixed 272**

**SSB 195**

**CW 252**

**Digital 107**

Band	Countries
160	80
80	150
40	148
30	30
20	216
17	28
15	194
12	27
10	201

## ***Remember:***

- ***'Invisible' antennas***
- ***Less than two years***

***Did anyone contact any  
W1AW portable stations  
last year?***

# ***2014 Centennial Overall***

- ***W1AW portable operations completed nearly 3.5 million QSOs in 2014***
- ***W100AW completed about 70,000 QSOs***
- ***As many as 1 million QSLs from these will be sent in 2015 from the ARRL***
- ***Also...***
  - Nearly 16,000 stations achieved at least 1,000 points in the Centennial QSO Points Challenge. About 2500 stations reached the Top Level at 15,000 points.***



# ***W1AW portable***

## **ARRL Celebrates 100 Years in 2014**

- W1AW on the air from every state and most territories
- Each State active 2 weeks during the year
- Delaware weeks were:
  - 1/15/2014
  - 11/26/2014
- Maximizing W1AW/ contacts quickly became very competitive

Rank	Call	QSO's
25	K6FW	1982
26	K3JL	1974
27	WB5GNR	1867
28	W1RM	1898
29	K8EUR	1899
29	W9JA	1897
31	K1RO	1896
32	N4KG	1897
33	AA4A	1891
34	K8PO	1845
35	K1HTV	1861
35	KD0A	1862
37	W1WC	1854
38	WA0KDS	1850
39	K8JH	1845
40	W5ADD	1846
41	W7BQ	1822
42	NC4RB	1819
43	N7ELL	1828
44	K4XU	1802
45	K6XN	1791
46	AC4G	1801
47	K0AWU	1774
47	KB0YH	1780
49	K4ADR	1787
344	K9RS	996

# ***W1AW/3 DE Operators***

***Karl N8NA***

***Ray K9RS***

***Roy K1RY***

***Art N3DXX***

***Jon AA1K***

***Chick NW3Y***

***Martin W3MLK***

***Jerry KB2GCG***

***Bill KB3KYH***

***Ed K3CWF***

***John K3JL***

***Paul WA3QPX***

# *W1AW/3 DE 1<sup>st</sup> week totals*

## Band Mode QSOs

1.8 CW 736  
1.8 LSB 157  
3.5 CW 1488  
3.5 LSB 1241  
3.5 RTTY 233  
7 CW 1492  
7 LSB 1315  
7 RTTY 317  
10 CW 816  
10 RTTY 122  
14 CW 1193  
14 RTTY 397  
14 USB 922  
18 CW 818  
18 RTTY 150  
18 USB 184

## Band Mode QSOs

21 CW 727  
21 RTTY 441  
21 USB 655  
24 CW 469  
24 RTTY 123  
24 USB 159  
28 CW 660  
28 RTTY 13  
28 USB 765  
50 CW 1  
50 USB 4

**Total All 15,598**

# *W1AW/3 DE 2<sup>nd</sup> week totals*

## Band Mode QSOs

1.8 CW 578  
1.8 LSB 217  
1.8 RTTY 42  
3.5 CW 1178  
3.5 LSB 849  
3.5 RTTY 167  
7 CW 2612  
7 LSB 1645  
7 PSK3 81  
7 RTTY 324  
10 CW 731  
10 RTTY 434  
14 CW 1985  
14 PSK3 186  
14 RTTY 16  
14 USB 2248  
18 CW 547  
18 RTTY 257  
18 USB 1223

## Band Mode QSOs

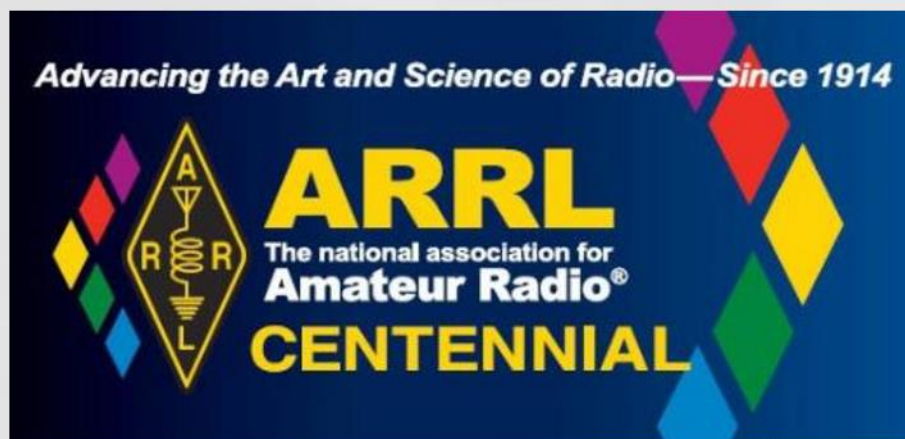
21 CW 1382  
21 PSK3 38  
21 RTTY 79  
21 USB 1241  
24 CW 756  
24 RTTY 229  
24 USB 722  
28 CW 1661  
28 PSK3 7  
28 RTTY 108  
28 USB 1189  
50 CW 9  
50 USB 7  
144 JT65 79  
144 USB 1

**Total All 22,829**

# ***W1AW/3 K9RS***

- **First week – 5,000 + contacts**
  - Surprised by the demand
  - Didn't need to have a big signal (and I didn't)
  - Operated a lot because I wanted DE to be well represented
- **2<sup>nd</sup> week – 4,500 + contacts**
  - Still lot's of demand
  - Thanksgiving & CQWW CW
  - First 1,500 QSO's all CW FT857 & AP8A Vertical
  - We had more operators in DE!

# W1AW Portable Operations Final Results



Scott Tuthill  
K7ZO  
Idaho Team Leader

Rev A. Jan 28, 2015



January 28, 2015

# Total QSOs and % Breakdown

## QSO Counts

Band / Mode	CW	Phone	Digital	Band Total
160	47,805	26,945	7,833	82,583
80	98,633	90,703	26,676	216,012
40	209,786	251,227	53,913	514,926
30	158,463		47,619	206,112
20	266,287	399,003	103,631	768,921
17	191,506	231,864	59,744	483,114
15	219,849	254,365	72,482	546,696
12	110,131	113,161	34,230	257,522
10	123,700	166,093	34,593	324,386
6	3,157	7,764	437	11,358
2	80	2,043	1,203	3,326
1.25	21	94	6	121
70cm	51	317	118	486
>903	40	72	31	143
Satellites	1570			1,570
Mode Total	1,429,509	1,543,681	442,516	<b>3,417,276</b>

## % Breakdown (as % of overall total)

Band / Mode	CW	Phone	Digital	Band Total
160	1.4%	0.8%	0.2%	2.4%
80	2.9%	2.7%	0.8%	6.3%
40	6.1%	7.4%	1.6%	15.1%
30	4.6%		1.4%	6.0%
20	7.8%	11.7%	3.0%	22.5%
17	5.6%	6.8%	1.7%	14.1%
15	6.4%	7.4%	2.1%	16.0%
12	3.2%	3.3%	1.0%	7.5%
10	3.6%	4.9%	1.0%	9.5%
6	0.1%	0.2%	0.01%	0.3%
2	0.002%	0.1%	0.04%	0.1%
1.25	0.001%	0.003%	0.0002%	0.004%
70cm	0.001%	0.01%	0.003%	0.01%
>903	0.001%	0.002%	0.001%	0.004%
Satellites	0.046%			0.046%
Mode Total	41.8%	45.2%	12.9%	100.0%

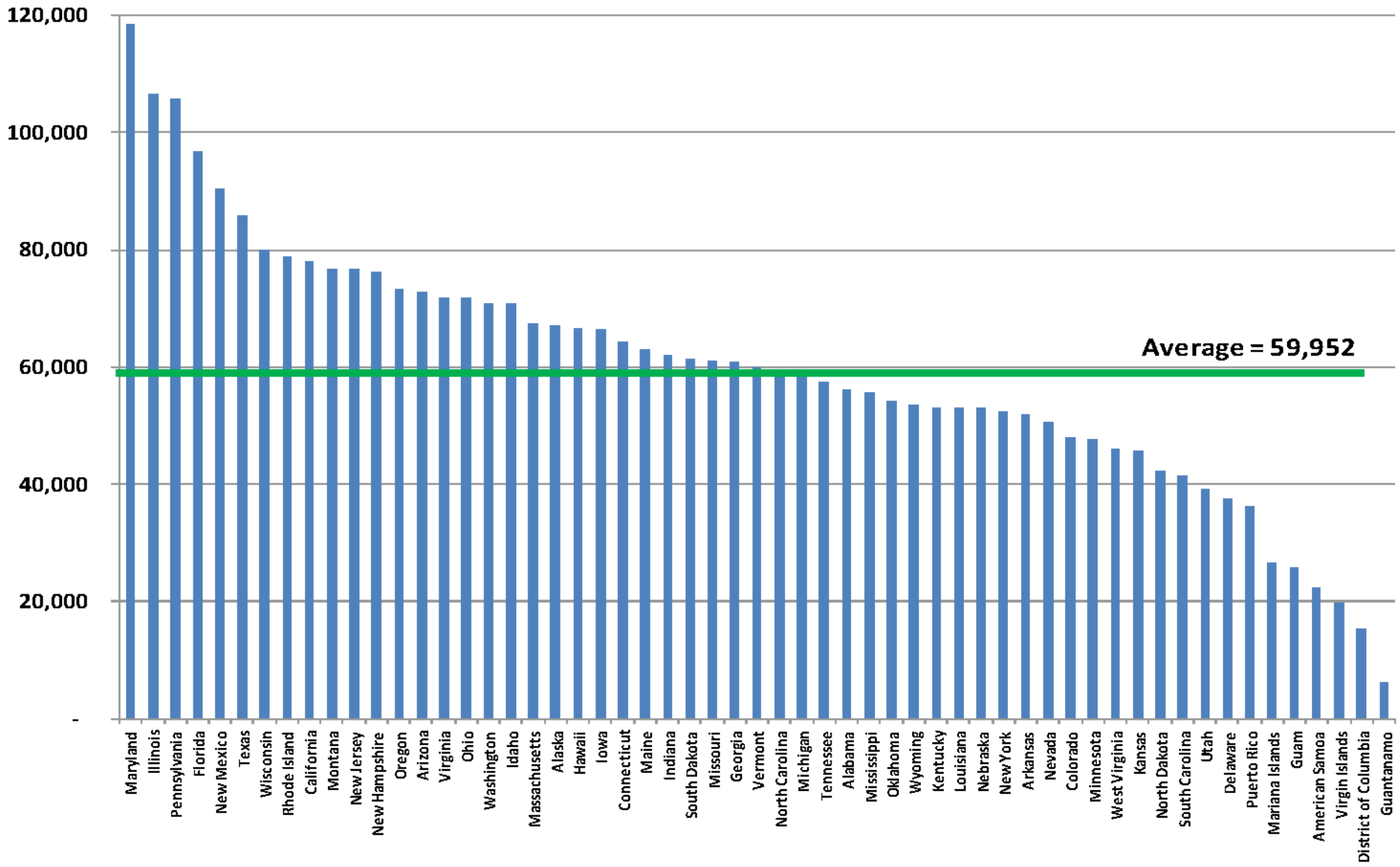
These tie to the band/mode detail on the web site as posted on Jan 27, 2015. In some cases the reported band total does not equal the sum of the mode totals.



January 28, 2015



# Total W1AW Portable QSOs by each State and Territory



January 28, 2015



***CQ WW SSB Trip to Aruba  
P40S***

***N3DXX***

***K4ISV***

***K9RS***

***Multi-operator***

***Single transmitter***

***Cook's Radio Retreat – P49V***





P49V



***P49V is a very nice station***



*It's good to have  
extra help in the  
multi-operator  
category*









# CQWW SSB Top Ten Multi-Op Single Transmitter

M/S HP						
Call	QSOs	Zones	Countries	Op Time	Score	Club
<a href="#">CN2AA</a>	12700	187	747	48	35,369,646	
<a href="#">P33W</a>	10805	174	695	48	27,089,337	
<a href="#">CN2R</a>	9818	176	681	48	25,041,540	
<a href="#">PJ2T</a>	9201	163	566	48	19,741,320	
<a href="#">P4ØS(@P49V)</a>	8667	165	569	48	18,741,956	FRC
<a href="#">4O3A</a>	9713	184	728	48	18,182,544	SKY CC
<a href="#">EI7M</a>	9000	166	660		17,100,000	
<a href="#">9A1P</a>	7965	175	698	48	15,115,995	WWYC
<a href="#">IR4M</a>	7430	175	690	48	14,916,060	ICC
<a href="#">VE3EJ</a>	6489	176	656	48	14,645,696	CCO

# 2014 CQ WW SSB Call: P4ØS

Operator(s): K4ISV K9RS N3DXX

Station: P49V

Class: M/S HP

QTH: Aruba

Operating Time (hrs): 48

Location: South America

Summary:

<u>Band</u>	<u>QSOs</u>	<u>Zones</u>	<u>Countries</u>
160:	21	8	17
80:	247	19	60
40:	1414	30	101
20:	1564	38	135
15:	2028	36	124
10:	3393	34	132
Total:	8667	165	569
Total Score		18,741,956	

***Thanks!***

***...see you in the next competition?***