

- Some Facts of Life About Modeling 160-Meter Vertical Arrays—Part 5
- Resuscitation of a Caribbean DX Legend
- Results: January 2001 NAQP CW and SSB Contests
- Why I Don't Do SO2R
- NCJ Profiles: K5RC

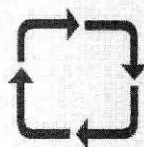
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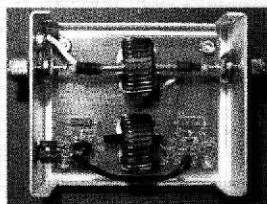
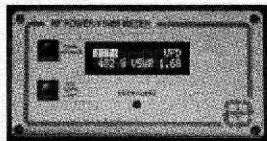
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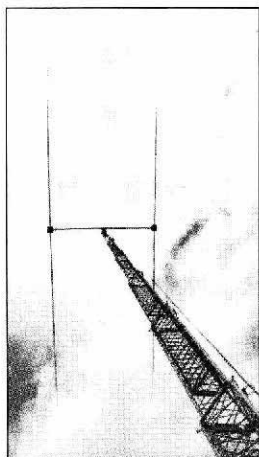
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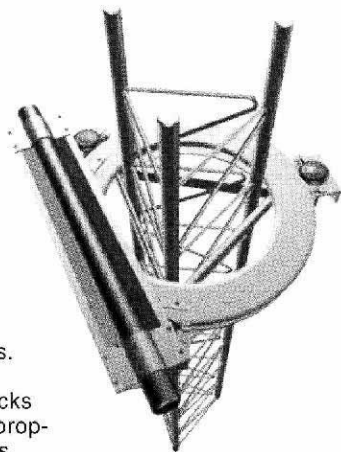


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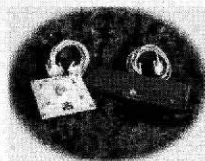
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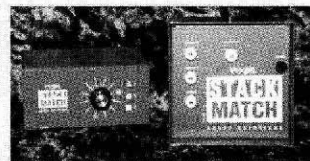
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TABLE OF CONTENTS

3 Editorial *Dennis Motschenbacher, K7BV*

FEATURES

4 Some Facts of Life About Modeling 160-Meter Vertical Arrays— Part 5: The Use of Multiple Ground Qualities in Lieu of Radials

L. B. Cebik, W4RNL

9 ARRL Club Competition—Status Report from the Contest Advisory Committee, July 2001 *Ned Stearns, AA7A*

11 Resuscitation of a Caribbean DX Legend *Tom Kravec, W8TK*

13 JOTA 2001: Scouting and Ham Radio; Together Again in 2001

Jean Wolfgang, WB3IOS

14 Why I Don't Do SO2R *Fred Laun, K3ZO*

15 NCJ Profiles—A Texan Rides West—Tom Taormina, K5RC

H. Ward Silver, N0AX

37 Shorts

COLUMNS

17 VHF-UHF Contesting! *Jon K. Jones, N0JK*

18 RTTY Contesting *Wayne Matlock, K7WM*

20 Contest DXpedition List *Steve Nace, KN5H*

21 Contesting For Fun *Brian Kassel, K7RE*

23 Contest Expeditions *Kenny Silverman, K2KW*

24 Propagation *Carl Luetzelshwab, K9LA*

25 Contest Tips, Tricks and Techniques *Gary Sutcliffe, W9XT*

26 Contest Calendar *Bruce Horn, WA7BNM*

27 International Contests *Joe Staples, W5ASP*

CONTESTS

29 Results, January 2001 NAQP CW Contest *Bob Selbrede, K6ZZ*

33 Results, January 2001 NAQP SSB Contest *Bruce Horn, WA7BNM*

NCJ Advertising Index

Array Solutions: [Cover II](#)

ARRL: [38, 39](#)

Atomic Time, Inc.: [42](#)

Bencher, Inc.: [23, 42](#)

Buckmaster: [41](#)

Cable X-Perts: [1](#)

Clark Electronics: [16](#)

Command Technologies: [39](#)

ComTek Systems: [10](#)

Force 12: [44](#)

Gap Antenna Products: [36](#)

Geo Distributing: [10](#)

ICOM America, Inc.: [Cover IV](#)

Idiom Press: [41](#)

IIX Equipment, Ltd.: [22](#)

K1EA Software: [44](#)

K0XG, R. Hassell-Bennett: [22](#)

Mike's Electronics: [42](#)

Productivity Resources: [41](#)

Roy Lewallen, W7EL: [14](#)

Ten-Tec: [40](#)

Texas Towers: [Cover III](#)

Top Ten Devices: [40](#)

Unified Microsystems: [37](#)

W2IHY, Julius D. Jones: [41](#)

West Mountain Radio: [16](#)

WriteLog for Windows: [10, 37](#)

XMatch: [13](#)

Smell the Roses

A fortunate set of circumstances occurred that resulted in me being able to meet Andre, PY0FF, in person. We had a great time keeping each other and our friends laughing at Dayton this year. Andre invited me to come out to Fernando de Noronha to operate WPX CW. Since I was going to be in Brazil on business around that time anyway, this was an offer I quickly accepted.

There was almost no time for me to acclimate myself to his station layout or the propagation in that part of the world. I arrived with only enough time to take a quick tour of the small island, experience the world-class cooking talents of his lovely wife Morena and try to sleep off the effects of the long flight and jet lag. But as much as I wanted to make a decent showing from his fine station, I was pleased to realize that I wasn't feeling the pressure I sometimes put on myself. At first I felt kind of guilty as I was not pacing the floors, chain smoking cigarettes, going over every minute detail of the station repeatedly and generally driving everyone around me nuts with my hyper behavior. This time, no one asked me, "Do you call this Fun?"

Instead, I settled with accepting things as they were and simply decided to do the best I could under the circumstances. I found that having put myself in that frame of mind allowed me to really "smell the roses" of contesting like never before. I cruised through the contest almost in an observer mode, operating while watching myself operate as well (if that makes any sense). I entered some sort of zone that allowed me to function at a high degree of efficiency—yet without all the gut knots, anxiety and stress frequently experienced in past high-exposure operations. A claimed third place finish behind N6TJ at P40T and YT1D at 3V8BB only put frosting on the cake.

Randy, K5ZD, one of the most successful testers active today, recently posted the following on the cq-contest reflector that contained words that seemed to at least partially explain this milestone for me.

"The only way to really appreciate the great operators is to sit next to them for awhile listening to the same audio they are. You will quickly see what makes them good. They get things fast and accurately. They know when to ask for repeats. They understand the 'game' of contesting and how to motivate/manipulate the people inside the radio to do what they want.

"The other thing you will notice is that they are not spending all of their brainpower to work the contest. Their experience, skill and talent allow them to handle the mechanics of contesting with ease. They can hold a conversation with you without apparently giving up any contesting skill. Visit a multi-multi and watch the back and forth that goes on between quality ops, whether verbally or using the gab function. I learn something from every multi-op I visit."

Although I am far, far, from being the great operator he refers to, I found some of the second paragraph hitting home. I believe that I lucked into a new mode of operating that I hope every serious tester will dis-

cover. Most of us believe that this contesting thing is supposed to be fun, but we rarely take actions that will insure that we are in a frame of mind to find the fun that is taking place under the rage of ragged nerves and acid filled stomachs.

The next time you enter a contest, hang a note on the rig that says, "Smell the Roses." By doing so, I hope that once the opening hour jitters are over, you will be able to step back away from the audio attack on your ears and observe yourself in the crowd. Take note of how well you are—or are not—fitting in with the others. Are you struggling and seemingly swimming upstream, banging into boulders?

Examine your contesting personality. Are you presenting a professional fine-tuned yet friendly appearance or one that—while fast paced—seems to be curt and lacking human qualities? Most of all, learn from your observations of yourself and implement improvements where needed right on the spot.

I believe if you try this you will find that contesting is more enjoyable for you and that you will move upwards to new levels of performance as you discover operating improvements that are both eye opening and rewarding.

WRTC2002—A Family Thing

While taking part in various fund raising activities for WRTC2002, I have been frequently asked if non-competitors can take part in the fun or will they be treated like "outsiders." The answer is that one most certainly does not have to be an actual World Radiosport Team Competition competitor to take part. I hope many of you are saving your pennies so that you can make WRTC2002 a family affair. The Finns promise that the entire week—July 9th through 16th, 2002—will be "family friendly."

I cannot think of a better way to expose your family or significant other to the international goodwill side of our hobby. They are guaranteed to meet people from all the corners of the Earth in a warm, friendly, setting that insures easy conversation and smiling faces.

Speaking of traveling, Peter Chadwick, G3RZP, dropped me a note to state, "There are a few points regarding Finland that Ari, OH1EH, did not mention in his article 'WRTC—Onward to 2002!' in the *May/June 2001 NCJ*.

1. If you avoid the expensive hotels, the Finnish beer is very reasonably priced, and is good. Although a lager beer, it does have 'body' to it. You do not need to go for one of the international 'export' beers unless you really want to. I know this subject is important—I was with a lot of testers at Dayton recently!

2. Finland has some really delicious food. Unless you are a vegetarian, do try reindeer meat in one of the traditional Finnish dishes. [Yes, *Virginia*, they DO eat red-nosed reindeer in Finland—'BV]

3. My experiences with reasonably priced hotels in Helsinki have been uniformly good.

4. I've found that the suburban train service around Helsinki is good and pretty reasonable in price."

The United States may be known for having "a chicken in every pot" but the Finns are known for having a "sauna in practically every home and vacation cottage." While working my way towards the Aland Islands (OH0) before jumping off for an OJ0 DXpedition a couple years ago, the OH guys even pushed me into experiencing this rather hot, sweaty, allegedly healthy ordeal.

Jukka, OH2MA, picked me up in Helsinki and drove me north and west to Tempere where we met up with Seppo, OH1VR. Seppo then led us out of town to his lakeside summer cottage. The lake was still plenty cold since the snow and ice had only recently melted away. Seppo let me get on the air. I made a quick 400 OH/K7BV QSOs with his fabulous station, and then Seppo declared it was time for the three of us to get into the sauna, a Finnish national pastime if not obsession.

Not wanting to display any masculinity concerns, I quickly stripped nude, tossed my clothes in a pile and strutted through the cottage as if I shared my midriff mid-life crisis with guys all the time. I felt pretty silly when I looked over my shoulder to see my two new friends glancing questioningly at each other as they modestly wrapped towels around themselves...

Twenty relaxing minutes later, three squeaky clean bright red bodies streaked naked out of the sauna in a full run and jumped into the lake for a cool-off. I wish I had thought about the fact that the lake was covered with ice only weeks before... Brrrrrr!

Talk about a wake-up shock to the ol' body! My pink bod became a frigid blue in no time at all, so I "Ooo'd" and "Ahhh'd" my way back to the sauna, one chilly stone and sharp pinecone at a time. When it was time to cool off again, I cautiously baby-stepped into the lake since I had already made a fool of myself far more times than my daily allotment allowed. Other than feeling like an idiot and having my masculinity scarred for life, I must admit the experience was exhilarating and I did sleep like a rock that night. I did find it curious, though, that the two OHs made me sleep in a room by myself...

73, Dennis Motschenbacher, K7BV

Our Cover

Geoff Howard, W0CG, has penned several articles for the Caribbean Contesting Consortium's newsletter, *Signals from the Point*, detailing the purchase, restoration and renovation of what is now known as *Signal Point*. This incredible world class station is located on the west coast of the island of Curacao. The location's ham radio heritage runs deep; its future now seems secure.

Tom Kravec, W8TK, has condensed the information in those articles and put together "Resuscitation of a Caribbean DX Legend" for the *NCJ*. Thanks to both of them—and the other members of the CCC—for letting us share this story with our readers.

Steve Bolia, N8BJQ, took the ocean view and shack photos (that's Jim Livengood, KP2L, modeling the club's tee shirt). Geoff snapped the "aerial" view of the property from the top of one of the towers. ■

Some Facts of Life About Modeling 160-Meter Vertical Arrays—Part 5: The Use of Multiple Ground Qualities in Lieu of Radials

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The final technique for simplifying the modeling of radials caught me by surprise. It consists of using the facility in *NEC* that allows two ground qualities—a set radius for an inner set of values, and from that point onward, some other values. The reasoning goes that a set of radials in effect improves the ground quality. Therefore, setting the inner radius to the length of the radial system at a high conductivity value, with a lesser value from that point outward, would largely replicate the effect of a radial system without requiring the modeling of radials.

Since the practice has some currency in various quarters, it deserves an examination, even if we know in advance that the interaction of buried radial systems is quite different from a simple soil quality improvement. We need to see to what degree the modeling technique yields something useful, even by way of indicators of antenna performance. To this end, let's go back to the very beginning of our work in this series and take a further look at the classic $\frac{1}{4}\lambda$ monopole.

The $\frac{1}{4}\lambda$ Monopole Over Various Modeled Ground Systems

We have come a long distance from our starting point of looking at $\frac{1}{4}\lambda$ monopoles both over radials systems and directly connected to ground with no radials in the model. We have been using the categories of soil quality in **Table 1** as our benchmarks along the way, having established the relative fairness of the spread of values in **Part 2**.

Table 2 reviews the modeled values in *NEC-4* of a 25-mm diameter monopole over various size radial systems and soil qualities, when the 2-mm diameter radials are buried 0.001- λ below ground (about 6.5 inches at 1.83 MHz, our test frequency).

To consolidate the numbers in a different way, **Figure 1** graphs the gain in dBi of the monopoles, with each line representing a different soil quality and the individual lines tracing the numbers of radials from 4 to 128. The largest differentials appear in the region from 4 to 16 radials and over the poorest soils. We should not neglect the actual numbers for the gain values.

Figure 2 provides comparable curves for the source resistance calculated by *NEC-4* for each of the cases graphed for gain in **Figure 1**. As we would expect, the highest values of source resistance and the greatest rates of change occur when the radials are few and the soil is less than "Good" quality.

We have also looked at the type of model that uses no radials, but connects the $\frac{1}{4}\lambda$ monopole directly to ground. In earlier examinations, we looked only at the use of the *MININEC* ground. In **Table 3** are values for direct connection to both the *MININEC* and the Sommerfeld-Norton (*S-N*) ground in *NEC-4*. (The values for a *NEC-2* ground may differ, since there is a distinct difference in the treatment of wire approaching and touching ground in the two systems.

Table 1
Soil types used in the study.

Soil Type	Conductivity (Siemens/meter)	Permittivity (dielectric constant)
Very Poor	0.001	5
Poor	0.002	13
Good (Average)	0.005	13
Very Good	0.0303	20

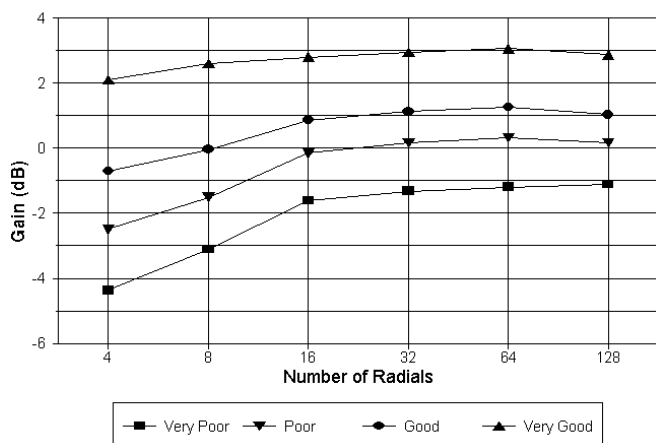


Figure 1—Gain values for a $\frac{1}{4}\lambda$ monopole over various size buried radial systems and different soil qualities. The radiating element is 0.25-meter in diameter. The tapered radials have a maximum diameter of 2 mm and are located 0.164-meter below ground.

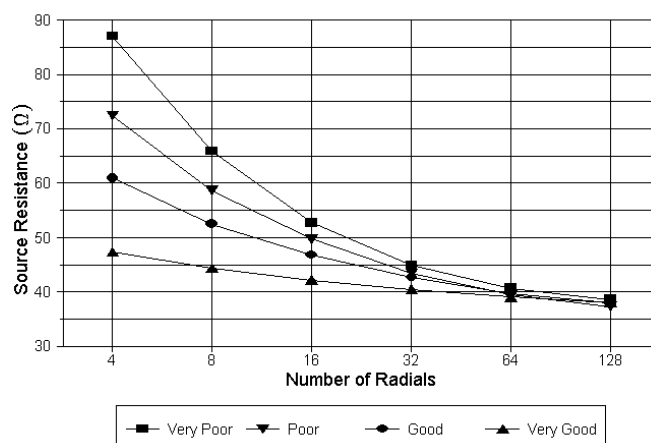


Figure 2—Source resistance values for a $\frac{1}{4}\lambda$ monopole over various size buried radial systems and different soil qualities. The radiating element is 0.25-meter in diameter. The tapered radials have a maximum diameter of 2 mm and are located 0.164-meter below ground.

Table 2

40-meter tall vertical monopole, 25 mm in diameter. 40.96-meter ($1/4\lambda$) radials, 2 mm in diameter, tapered segmentation: 0.001 to 0.04- λ per wire; radials 0.001- λ below ground; NEC-4.

Soil Type	Gain (dBi)	TO Angle (degrees)	Source Impedance ($R + jX \Omega$)
4-radials: 32 wires; 62 segments			
Very Poor	-4.37	27	$87.04 + j25.31$
Poor	-2.49	25	$72.45 + j19.47$
Good	-0.71	23	$60.96 + j20.42$
Very Good	2.10	17	$47.34 + j14.52$
8-radials: 56 wires; 110 segments			
Very Poor	-3.11	28	$65.90 + j18.09$
Poor	-1.51	25	$58.63 + j15.18$
Good	-0.04	23	$52.43 + j15.94$
Very Good	2.60	17	$44.34 + j12.60$
16-radials: 104 wires; 206 segments			
Very Poor	-1.61	28	$52.71 + j12.43$
Poor	-0.16	25	$49.71 + j12.18$
Good	0.86	23	$46.79 + j12.83$
Very Good	2.79	16	$42.20 + j11.18$
32-radials: 200 wires; 398 segments			
Very Poor	-1.32	27	$44.89 + j7.54$
Poor	0.17	25	$43.44 + j9.55$
Good	1.12	22	$42.67 + j10.46$
Very Good	2.94	17	$40.48 + j10.03$
64-radials: 392 wires; 782 segments			
Very Poor	-1.19	27	$40.68 + j4.11$
Poor	0.32	25	$39.43 + j7.08$
Good	1.26	22	$39.73 + j8.50$
Very Good	3.05	17	$39.06 + j9.07$
128-radials: 776 wires; 1550 segments			
Very Poor	-1.12	28	$38.60 + j2.18$
Poor	0.17	25	$37.32 + j5.29$
Good	1.03	23	$37.91 + j6.99$
Very Good	2.87	17	$37.94 + j8.27$

Table 3

Direct connection values. 40-meter tall vertical monopole, 25 mm in diameter, direct connection to ground (no radials), fed at the lowest segment; NEC-4.

Soil Type	Gain (dBi)	TO Angle (degrees)	Source Impedance ($R + jX \Omega$)
A. MININEC ground			
Perfect			$37.08 + j6.12$
Very Poor	-1.00	27	
Poor	0.31	25	
Good	1.41	23	
Very Good	3.16	17	
B. Sommerfeld-Norton ground			
Very Poor	-2.26	27	$49.32 + j8.11$
Poor	-0.89	25	$48.78 + j10.52$
Good	0.31	22	$47.65 + j11.48$
Very Good	2.48	17	$43.36 + j10.21$

NEC-2 does not permit buried wires, although NEC-4 handles buried wires routinely so long as certain modeling conventions are met.) **Figure 3** graphs the pair of gain curves that result from one soil quality to the next. The NEC-4 S-N curve roughly tracks the values from the 4-radial portion of Table 2. However, the MININEC curve reaches values not achieved by even the 64- and 128-radial portions of Table 2.

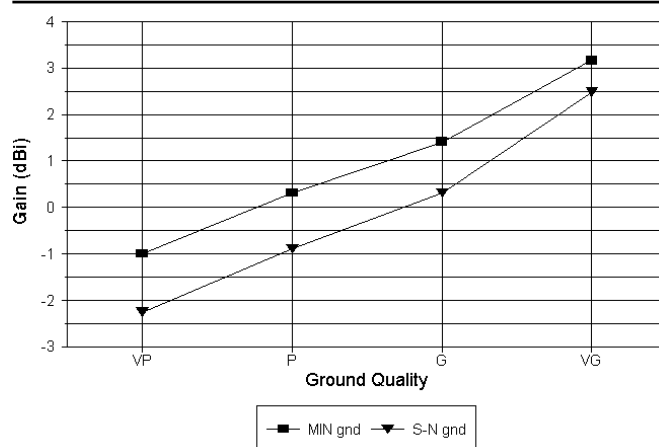


Figure 3—Gain values for a $1/4\lambda$ monopole over MININEC and S-N grounds without modeled radials.

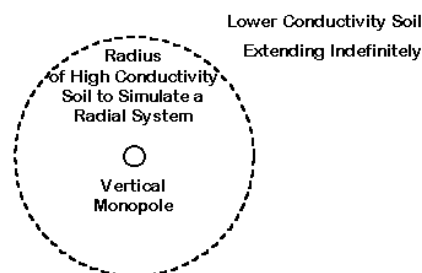


Figure 4—A monopole over a dual ground-quality system used to simulate radials. The area inside the circle is modeled as high conductivity soil to represent the effect of radials. The area outside of the circle is lower conductivity soil that corresponds to the actual ground quality.

The technique that we shall try to compare to these modeled results appears in **Figure 4**. We set the monopole touching ground. Beneath the antenna and for a radius of $1/4\lambda$ (40.96-meter), we set the soil quality to some higher value. In these tests, we shall use a conductivity of about 0.03 S/m, corresponding to Very Good soil. From that radius outward, we shall use Very Poor soil for the contrast.

Theoretically, NEC calculates the source impedance and currents from the inner radius soil quality, and would do so even had we specified the dividing boundary radius as zero. The far field is calculated using the second or outer ground quality. For the sake of this test, I used *EZNEC Pro*, which permitted runs using either NEC-2 or NEC-4 and gave access to the MININEC ground as well as to the standard NEC grounds (the high accuracy Sommerfeld-Norton ground calculation system and the “fast” or reflection coefficient calculation system). The results appear in **Table 4**.

The values shown for the NEC ground calculation systems are in the table largely for reference. They are not considered usable by most modeling software experts. Tradition has used the MININEC ground as a basis for simplified modeling. However, the gain figures for both cores using a MININEC ground exceed the highest value of far-field gain found in Table 2 for all but Very Good Soil. Note that the far-field gain is supposed to be a function of the outer soil quality, which was set at Very Poor. As well, the dual ground quality system

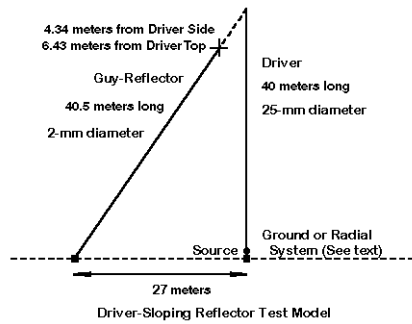


Figure 5—The 2-element sloping-reflector array used as a test model.

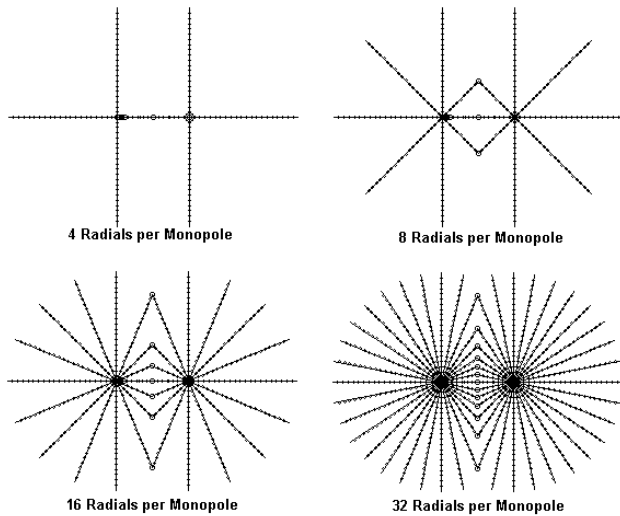


Figure 6—The four configurations of intersecting buried radial systems surveyed with the 2-element sloping-reflector array.

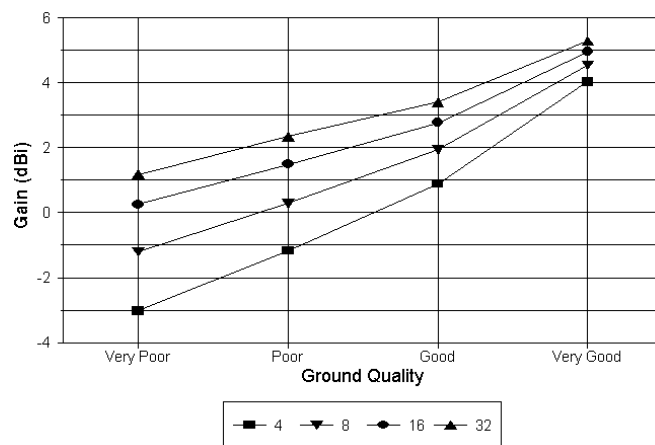


Figure 7—Gain values for 2-element sloping-reflector arrays employing 4, 8, 16 or 32 buried radials over a range of soil qualities.

Table 4

Direct Connection Values: 40-meter tall vertical monopole, 25 mm in diameter, direct connection to ground (no radials), fed at the lowest segment. Dual ground: inner to 40.96-meter radius, Very Good; outer, Very Poor.

Ground System	Gain (dBi)	TO Angle (degrees)	Source Impedance ($R \pm jX \Omega$)
A. MININEC Ground			
NEC-4	3.16	27	$37.08 + j6.12$
NEC-2	1.89	29	$37.08 + j6.12$
B. "Fast" NEC Ground			
NEC-4	2.12	29	$35.14 + j5.37$
NEC-2	-5.07	29	$179.5 - j163.0$
C. Sommerfeld-Norton NEC Ground			
NEC-4	1.21	29	$43.36 + j10.21$
NEC-2	0.04	29	$56.79 + j9.58$

Table 5

Two-element parasitic array. Driver: 40-meter tall vertical monopole, 25 mm in diameter. Reflector: sloping 2-mm guy, 40.4 meters long; intersecting 40.96-meter ($1/4\lambda$) radial system, 2 mm in diameter, 0.001λ below ground, uniform segmentation; NEC-4.

Soil Type	Gain (dBi)	TO Angle (degrees)	Front-to Back Ratio (dB)	Source Impedance ($R \pm jX \Omega$)
4 radials per element				
Very Poor	-3.03	28	5.89	$102.8 + j53.58$
Poor	-1.17	26	6.14	$86.89 + j44.75$
Good	0.88	23	7.04	$75.31 + j47.33$
Very Good	4.03	17	8.84	$62.11 + j46.58$
8 radials per element				
Very Poor	-1.20	29	7.58	$82.12 + j50.16$
Poor	0.29	26	7.96	$73.99 + j45.63$
Good	1.94	23	8.62	$68.17 + j47.52$
Very Good	4.54	17	9.73	$59.75 + j47.78$
16 radials per element				
Very Poor	0.25	29	9.40	$67.75 + j49.90$
Poor	1.49	26	9.54	$65.74 + j48.23$
Good	2.77	23	9.96	$63.06 + j48.75$
Very Good	4.95	18	10.54	$57.70 + j48.95$
32 radials per element				
Very Poor	1.18	29	10.43	$60.03 + j48.96$
Poor	2.34	27	10.61	$59.34 + j49.10$
Good	3.40	23	11.04	$58.66 + j49.77$
Very Good	5.29	17	11.26	$55.72 + j50.06$

of modeling does nothing to correct the fact that MININEC ground forces the source impedance to be calculated over perfect ground. At best, the Sommerfeld-Norton ground using NEC-4 yields values of gain and source impedance similar to those for Good soil and 32 buried radials (from Table 2). However, there is a significant difference in the calculated take-off angle for the two models.

With respect to the simple $1/4\lambda$ monopole, at least, there is nothing in the data calculations to suggest that a dual ground system in any way provides usable data as a substitute for a buried radial system of any size. Since the closest correlation appeared in a NEC-4 S-N run, which presumes that one has NEC-4 at hand, one might as well model the buried radials in the first place.

A 2-Element Sloping-Parasitic Vertical Array Test

To determine whether the results for a $\frac{1}{4}\lambda$ monopole, as interpreted, represent a case of excessive finickiness, I went back to a model first examined in [Part 3](#) of this series: a 2-element vertical array in which the reflector is a sloping guy wire. The outline of the array appears in [Figure 5](#). Both the 25-mm diameter driven element and the 2-mm diameter reflector guy are connected to ground—or to a radial system.

Because we wish to discover if there is a usable correlation between a dual ground quality system and a buried radial system, I extended the analysis of the array over buried radials. The $\frac{1}{4}\lambda$ length radial systems for the individual elements intersect—how many times being dependent on the number of radials in each system. I used 4, 8, 16 and 32 radials per element, and the resulting radial systems are sketched in [Figure 6](#).

The results of the model runs appear in [Table 5](#), which provides values for each of our soil qualities for each level of radial system. [Figure 7](#) provides curves for the gain values, where each line represents a different size radial system. The curves are unexceptional. We should note that the gain barely reaches 5.3 dBi with 32 radials per element over Very Good soil.

[Figure 8](#) graphs in a similar way the modeled front-to-back ratios achieved by the array variations. The 4-radial-per-

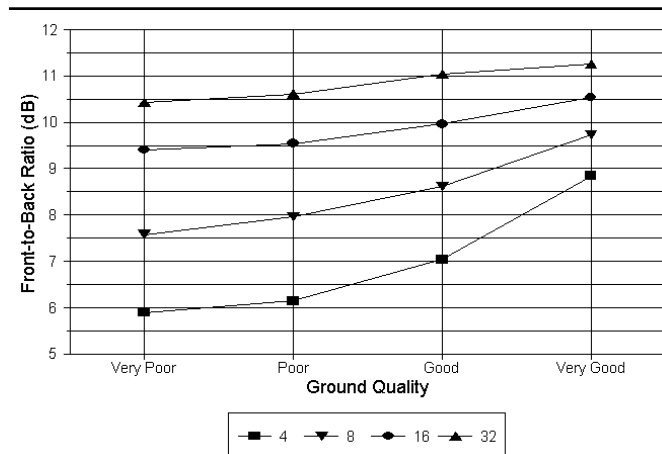


Figure 8—Front-to-back ratio values for 2-element sloping-reflector arrays employing 4, 8, 16 or 32 buried radials over a range of soil qualities.

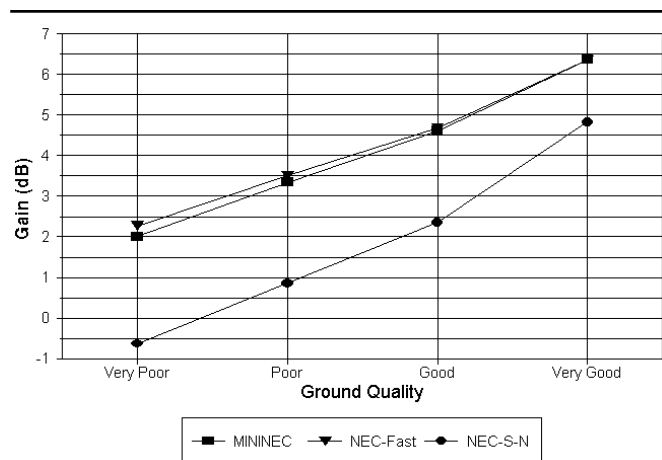


Figure 9—Gain values for the 2-element sloping-reflector array over MININEC, “fast” and S-N grounds without modeled radials.

Table 6

Two-element parasitic array. Driver: 40-meter tall vertical monopole, 25 mm in diameter. Reflector: sloping 2-mm guy, 40.4 meters long; direct connection to ground (no radials); NEC-4.

Soil Type	Gain (dBi)	TO Angle (degrees)	Front-to Back Ratio (dB)	Source Impedance ($R \pm jX \Omega$)
A. MININEC Ground				
Very Poor	2.00	30	11.36	40.19 + j53.02*
Poor	3.34	26	14.25	
Good	4.62	24	17.11	
Very Good	6.36	18	19.50	

*MININEC impedance is over Perfect ground.

B. “Fast” NEC Ground				
Very Poor	2.27	28	6.37	50.40 + j29.73
Poor	3.50	26	8.63	50.14 + j36.48
Good	4.67	23	10.82	51.25 + j42.49
Very Good	6.35	18	14.66	46.64 + j49.99

C. Sommerfeld-Norton NEC Ground				
Very Poor	-0.63	29	10.31	69.16 + j38.46
Poor	0.85	26	10.78	65.61 + j42.24
Good	2.35	23	11.81	62.44 + j45.83
Very Good	4.82	18	13.44	53.33 + j48.39

Note: Use of NEC-2 and the S-N ground will yield reports that differ considerably from the values produced by NEC-4. The following listing is simply to display the differential.

D. Sommerfeld-Norton NEC Ground—NEC-2				
Very Poor	-11.0	28	0.58	342.3 - j169.9
Poor	-7.06	26	1.46	180.3 - j77.60
Good	-3.60	23	3.55	122.5 + j 4.20
Very Good	2.94	18	10.16	61.57 + j38.79

element system benefits most from soil quality improvements. However, even over Very Good soil, the model does not achieve an 11.3 dB front-to-back ratio.

If we use a direct connection to ground and no radials, the calculated numbers derived from NEC diverge from those yielded by the buried radial systems. [Table 6](#) gives the modeling results of placing the two elements alone over the range of available grounds, including the MININEC ground, the “fast” NEC ground, and the S-N ground. Once more, the latter two are for reference and the general advice not to use these grounds for such purposes remains applicable.

[Figure 9](#) graphs the gain values for the three sets of NEC-4 runs. Interestingly, the reflection coefficient ground in NEC-4 correlates very well to the MININEC ground. The S-N ground, when used in NEC-4, provides values that coincide roughly with a 12-radial-per-element system, if one can interpolate fairly from the data in [Table 5](#).

The correspondence in gain figures between the MININEC ground and the “fast” ground in NEC-4 disappears if we move to the front-to-back column. Although the “fast” ground curve is roughly congruent with the MININEC curve, the “fast” ground values are 5 dB lower. The S-N ground curve is much shallower, but the values are high, even when compared to the front-to-back values for the 32-radial-per-element buried radial system model.

[Table 6](#) provides S-N ground data for NEC-2, the version used by most hams. Once more, there is a very large difference in the values reported from those yielded by NEC-4 under identical modeling parameter conditions. The values would hardly be useful as anything but artifacts. However, the remaining numbers in [Table 6](#) have equally misleading data values and should also be set aside if one is modeling a buried radial system attached to the array in question.

The final step in our test is whether using a dual soil-quality

Table 7

Two-element parasitic array. Driver: 40-meter tall vertical monopole, 25 mm in diameter. Reflector: sloping 2-mm guy, 40.4 meters long; direct connection to ground (no radials), fed at the lowest segment. Dual ground: inner to 61.43-meter radius ($\frac{3}{8}\lambda$ from array center line), Very Good; outer, Very Poor.

Soil Type	Gain (dBi)	TO Angle (degrees)	Front-to Back Ratio (dB)	Source Impedance ($R \pm jX \Omega$)
A. MININEC Ground				
NEC-4	6.36	18	19.50	$40.19 + j53.02$
NEC-2	6.82	11	18.58	$40.21 + j53.02$
B. "Fast" NEC Ground				
NEC-4	6.03	25	14.43	$46.64 + j49.99$
NEC-2	No usable values			
C. Sommerfeld-Norton NEC Ground				
NEC-4	4.45	25	14.04	$53.33 + j48.39$
NEC-2	3.51	11	9.58	$61.57 + j38.79$

system fares any better than the simple *MININEC* ground. To examine this question, I altered the model to include Very Good ground under the antenna and Very Poor ground at a distance. Since the model involves radial systems that intersect, with about $\frac{1}{8}\lambda$ between element bases, I chose a radius of $\frac{3}{8}\lambda$ for the inner ground quality (61.43 meters at 1.83 MHz). The results of the modeling appear in **Table 7**.

Using the normal *MININEC* ground for the exercise produced excessively high values of gain and front-to-back ratio relative to the buried-radial models—in both *NEC-4* and *NEC-2*. As well, *NEC-2* depressed the TO (*take off*) angle by 7 degrees relative to any other report. Although the "fast" and S-N numbers are provided, once more they are no more than reference reports. The end result, however, is that the dual-ground system provides no usable data or even indicators of data for the array in question.

Conclusion

As expected, the dual-ground modeling technique can be as misleading as any other substitute for a direct and detailed model of a buried radial system. The calculations for the way in which radials interact with a given soil quality when buried is quite different from the calculations for the soil alone. As a result, a radial system is not equivalent with respect to antenna performance to a simple improvement of the soil quality.

Thinking of a radial system as an improvement in soil

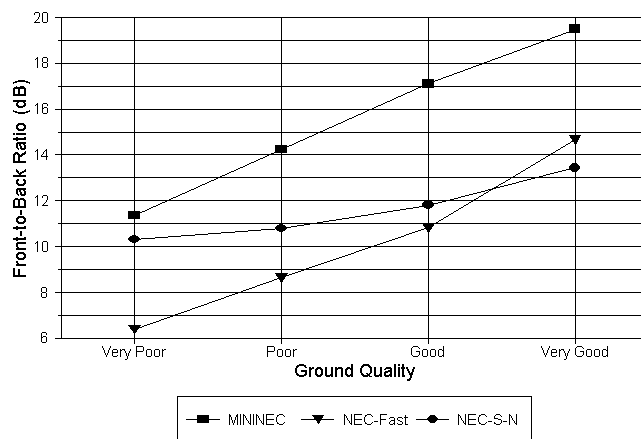


Figure 10—Front-to-back ratio values for the 2-element sloping-reflector array over *MININEC*, "fast" and S-N grounds without modeled radials.

quality may have some utility when the concern is the overall RF ground for a station and its antenna(s). However, that mode of thought can be highly misleading when it comes to calculations that yield potential antenna performance figures. We have looked in review at the results for the standard techniques of simplifying models by placing them without radials over a *MININEC* ground, and the result is simply that both systems of simplification are equally but separately misleading. The only type of modeling that seems adequate to a buried radial system is a buried radial model. Any suggested simplification would require that we first test the simplified model against a full model with all buried radials modeled. If a reliable correlation appears—and it might, as illustrated in **Part 4**—then we can use the simplification. However, once we have the full model, the rationale for simplifying seems largely to disappear.

As one step in the direction of developing more adequate models of vertical antennas and arrays for 160 meters (or any other band, for that matter), this series has tried to set forth some basics of the varied results that different kinds of models produce, as well as to give some perspective on the divergence in reports yielded by the range of ground qualities that we can model. If any theme emerges from these notes, it should be this: to the degree possible, let us model accurately and without shortcut every possible aspect of a 160-meter vertical antenna or array and begin from the ground up. ■

WRTC USA Youth Fund

The Boring (Oregon) Amateur Radio Club is happy to announce the establishment of a tax-deductible fund intended to help defray the travel costs of young USA competitors to the WRTC events. This fund is being administered by the ARRL Foundation.

To be eligible, an applicant must be a US citizen, no more than 25 years old at the time of the WRTC event, and must be selected as a competitor.

Up to \$1000 of the actual travel expenses will be reimbursed per WRTC event, depending on fund availability. If funds are left over, they will be applied to the next WRTC event.

The Boring ARC will verify eligibility and request fund disbursements. You can send your request to the club's

mailing address: 15125 SE Bartell Road, Boring, OR 97009. Include a copy of your receipts.

To contribute to the fund, send your check to the ARRL Foundation Inc, 225 Main Street, Newington, CT 06111. Make your check out to "The ARRL Foundation" and include a note indicating the name of the fund that you are contributing to (WRTC USA Youth Fund, in this case). All contributions of \$25 USD or more will be recognized in *QST*.

For additional information about the ARRL foundation, visit www.arrl.org/arrlf. The Boring ARC Web page is at jzab.com/k7rat.

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ARRL Club Competition—Status Report from the Contest Advisory Committee, July 2001

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In October 2000 the Contest Advisory Committee (CAC) of the American Radio Relay League (ARRL) was given the assignment of reviewing the purpose and regulations surrounding the club competition portion of ARRL contests. The League's Membership Services Committee (MSC) initiated the study after many Division directors received complaints or comments on the way the current program is administered. The MSC asked the CAC to study club definition criteria, club areas and membership requirements, club score submittals, and other aspects of the program and make recommendations on ways to improve it and to address the complaints.

The CAC, led by Chairman Ned Stearns, AA7A, undertook a comprehensive review of the club competition rules. The CAC formed three study groups to look into the following areas:

- The purposes of club competition in ARRL contests.
- The club eligibility criteria for submitting scores in ARRL contests.
- The club category definitions.

Input from the contesting community was solicited by various means, including at conventions, via the Internet and in a previous article in the *NCJ*. The many comments received provided guidance on which elements of the rules were the "hot button" issues. Three main areas have risen to the top of the stack:

- Definition of club areas for the three categories of club.
- Submitting scores for more than one club.
- Membership and meeting requirements for clubs.

Club Areas

The rules currently define the club area for unlimited- and medium-class clubs by a 175-mile-radius circle around the club center. Local clubs define their club area by a 35-mile-radius circle around the club center. The club center is not required to be reported to the League, and the rules do not say how often it may change.

League members in states such as Tennessee and Florida have complained that, given the geography of their states, the circular region makes a substantial number of members ineligible. And members in other parts of the country have suggested changes that would address the needs of their particular geographical situations. Suggestions

included leaving things as is, eliminating geographical boundaries altogether, allowing various state/division/multiple-section combinations, and allowing a rectangle of fixed size but flexible shape to define the club's boundaries. The approach currently favored by the CAC is to allow unlimited- and medium-class clubs to define their club area as EITHER a 175-mile-radius circle OR a rectangle (having the same area as that circle) with up to a 4:1 aspect ratio with the four corners defined by a specific latitude/longitude. The center of the club's circle, or the four corners of the rectangle, would be submitted to the League annually, at the time of filing the affiliated club report. A club could change its definition or center/boundaries not more than once a year.

Multiple-Club Submittal

The issue of submitting single-operator scores for more than one club has been raised several times in the past. Some areas of the country have active local contest clubs as well as regional contest clubs. Many contesters belong to two clubs, in different categories (such as a local club and an unlimited-class club), each of which would like to include the member's score in its total. Having to give the score to one club or the other often leads to hard feelings, and some contesters have reportedly dropped out of one club as a result.

Several specific proposals have been received by the CAC and remain under consideration. One proposal would allow the entire score of an individual to be submitted for BOTH an unlimited-class club AND a medium-class club. Another proposal would allow the entire score to be submitted for BOTH an unlimited-class club OR a medium-class club AND a local club. Other proposals would require that the score be divided between the two clubs. Yet another point of view maintains that no score should count for more than one club. The CAC is considering all of these approaches, and no consensus has yet emerged.

Attendance Requirements

The issues of meeting attendance and club membership criteria have also been discussed extensively in this study. Currently, members of unlimited- and medium-class clubs are required to attend two "meetings" per year in order for their scores to be counted for that club's aggregate total. (Surprisingly, there is NO meeting attendance

requirement for local clubs.) The rules, however, do not define what constitutes a "meeting." Given the nature of club membership these days, as well as the ubiquity of the Internet and its ability to facilitate club operations, it has been suggested that the meeting attendance rules are no longer necessary.

Others have weighed in on this subject, however, stating that the meeting attendance requirements are necessary to keep the club competition from being infiltrated by "paper clubs." The CAC has heard these arguments, but it has faith in the club affiliation processes currently in place at the League; we assume that the club reporting structure and criteria for affiliation will keep "paper clubs" from becoming a problem. One option currently being discussed would require that a contester whose score is to count for any class of club competition be a "member in good standing" and leave the definition to the individual club.

Other Aspects

The CAC's discussions of several other aspects of the club competition produced a reasonable degree of agreement on recommendations to the MSC.

Number of Categories

We did not see a need to change the number of categories.

Minimum Number of Entries for an Unlimited-Class Club

Data from recent contests do not suggest a change in the minimum for the unlimited category (currently 51), but more analysis is needed. It may be desirable for the definition to use the number of members, rather than the number of entries.

Expedition Scores

Currently a club member must operate within the club's territory (except for DXpeditions in the ARRL DX Contest). It should be workable to count scores from any location (appropriate to the contest).

Multi-Operator Scores

Currently, if at least 66% of the operators in a multi-op entry are members of the same club, the entire score goes to that club. We have recommended dropping the 66% requirement and, instead, allocating the multi-op's score among participating clubs in proportion to their numbers of members among the operators.

Guest Operator and Station Licensee

Currently, for the score from a single-operator entry by a guest operator to count toward a club's score, both the guest op and the station licensee must be members of that club. This requirement on the station licensee should be dropped.

Discussion continues within the CAC and the MSC. Your past comments and suggestions are appreciated. If you have other feelings on the club competition, please make them known to your Division's CAC representative. A listing of CAC members is available on the ARRL Web site. The CAC's recommendations will be forwarded to the MSC for consideration and possible action. It is important to recognize that, in many ways, the deliberations of the CAC are similar to those of a civil grand jury. We do not have the power to implement changes in the way contests are administered or adjudicated. We respond to assignments from the MSC and make recommendations based on our discussions. The MSC may or may not take further action.

If the MSC and the League implement any changes in the club competition, they will not take effect until the 2002 contest season. ■

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Resuscitation of a Caribbean DX Legend

Tom Kravec, W8TK
tkravec@columbus.rr.com

Curacao, the middle of the “ABC islands” (Aruba, Bonaire, Curacao) is separated from Venezuela by 35 miles of salt water. It was first settled in 1527 by the Spanish, and later by the Dutch who established it as a major center of trade for their West India Company. The island is geographically inhospitable, with less than 10% being arable, and with no source of fresh water. Curacao, however, did provide the Dutch with the finest natural deep-water harbor in the Caribbean.

In the centuries since it was first settled, the island's economy has depended on slave trade, phosphate mining and, most recently, shipping and refining of petroleum from Venezuela. Since all consumer goods and food must be imported, and with the decline of phosphate mining and the automation of the oil industry, the people of Curacao are turning increasingly to tourism as their major industry. On the positive side, the island lies south of the hurricane belt, and is seldom threatened by bad weather.

While Dutch is the official language, English is taught in all schools and the people of Curacao boast a literacy rate of 98%. Although the island is served by the major airlines, it has not yet become popular with American tourists.

Ham Radio History

In the '60s, Chet Brandon, an American ham, quit the rat race and bought the *Coral Cliff Hotel* on the west coast of Curacao. In 1967, John Thompson, W1BIH, assembled a team that included W4KFC, W4GF, W3GRF, W1TX and W1FJ to operate the CQWW CW contest from there. Antennas were set up Field Day-style, with an 80-meter dipole held off the ground by a 10-foot pole. The magical propagation from that location resulted in a world high score for the contest that year. W1BIH repeated the feat in the next few years, and finally bought a piece of oceanfront property adjacent to the hotel.

John built a small concrete-walled house and, in 1973, began 25 years of contesting from that vacation spot. At first he had to use W1BIH/PJ2 as a call, but eventually he talked the authorities into issuing him PJ9JT, a much less cumbersome and eventually quite famous call. Many times the CQ or ARRL contests were won from this QTH, sometimes by John alone, sometimes by a team. Even into the late 1990s,



Noel, W9ELF and Jim, KP2L, test the equipment prior to the 2001 ARRL CW Contest.

PJ9JT continued to dominate the DX contests.

The Caribbean Contesting Consortium

In the mid '90s, a group of Midwestern contesters operated from VP5 in a few contests, and eventually the group coalesced into what is now known as the Caribbean Contesting Consortium (CCC). The initial operations were from rented accommodations, but the group eventually grew tired of hauling equipment and rebuilding a super multi-op station on every trip. Members dreamed of having a competitive permanent station in a warm climate from which to challenge the world.

In 1998, some CCC members heard rumors that W1BIH was about to put his Curacao QTH up for sale, and those rumors were confirmed at that year's Hamvention when flyers advertising the offering of PJ9JT were distributed. John and his wife had left the place suddenly due to a medical emergency, and were never able to return from the States. With its rich history and proven track record in contests, most assumed that some lucky ham or group would quickly snap it up.

Early Scouting Reports

Months later, when I mentioned that I had planned a family vacation to Curacao, Geoff, W0CG, remembered the proposed sale of the property and was surprised to learn that no takers had yet come forward. I toured the island with a realtor, and when I stopped at W1BIH's house, the realtor opened the door but refused to go in. While the yard

had been mowed, the interior of the house had been untouched since John left in a hurry, and it had been taken over by rodents, reptiles and critters of all descriptions, complete with their droppings and puddles. The odor was overwhelming, and the visit did not last long. I concluded that while Curacao was quite an agreeable place, the only remedy for the state of the house was a date with a bulldozer.

Geoff was not as easily discouraged, however, and planned a visit to the island with his wife, Cindy, in July of 1999. He focused on the positive: the house is located in a small, quiet group of about 10 seaside homes, at the end of a dead-end road, and all within the grounds of the former Coral Cliff Hotel. Geoff thought the place “felt right”—a safe haven in a safe spot at the end of a quiet country road, with 100 feet of magnificent oceanfront and a world-beater view across the water to Venezuela. He was sure that appropriate (large!) quantities of Lysol, elbow grease, and paint could resurrect the dilapidated structure even beyond its former glory as a DX haven, and that the property was large enough to accommodate at least a couple sizeable towers.

Testing the Waters

For that July trip, Geoff had brought an HF radio, a small tribander and some wire antennas. He operated from a local hotel and was amazed by the propagation, even with unsophisticated antennas. He was drawn back to visit the house several more times, and began to plot the purchase of the property. The price seemed reasonable, due to the

sorry state of the house and the flagging economy on the island, but initial attempts to work out an equal partnership among the members of CCC, by then numbering about 20, proved problematic.

He put together a small group of members to operate from an apartment on Curacao for the CQWW SSB contest that fall to introduce the island and the property to those expressing interest. A satisfactory business arrangement among members proved elusive, however, due to the uncertainties of foreign property ownership, the status of an island economy and the individual situations of each of the club members. Geoff found that island banks had suspended writing new mortgages, and stateside lenders were not interested in financing foreign property.

Untangling a Mountain of Red Tape

In addition, Geoff found that the island administration was not always easy to deal with. On the CQWW trip, Customs insisted he post a \$5000 bond for the "import" of the radio equipment. The bond was to be returned when the equipment was removed from the island after the contest. He carefully accounted for each and every piece of gear upon his departure, but weeks and months passed with no word about the bond. Telephone calls went unanswered. Finally, he contacted a law firm and enlisted the aid of a local permits agent to grease the wheels of government. Nearly six months passed before most of the bond was returned.

Geoff was further discouraged when he heard from the realtor that the property had been sold to a Dutch couple who planned to level the house and build a new one on the property. Some weeks later though, he got an e-mail from W1BIH saying that the buyers had failed to come up with financing, and the property was again available. He redoubled his efforts to put together a purchase arrangement by CCC, but eventually decided that the only way to secure the property was for him to take on the purchase himself.

A final visit to the island by him and Noel, W9EFL, revealed that the house had deteriorated even further. The yard had been unattended for many months, and brush had grown as high as the eaves, completely enmeshing the tilted-over 50-foot tower and tribander in the back yard. But Geoff and Cindy were undaunted, and they signed a contract to purchase the place, contingent upon being granted permits to erect two new towers of 80 and 100 feet.

Naturally, island red tape required huge amounts of paperwork, including detailed engineering drawings and specifications for the towers. The wheels

of government ground slowly. Geoff's permits agent, who resides on Curacao, agreed to pursue the permits for a reasonable fee, and it is likely that without her assistance, the permit requests would still be languishing in a desk drawer while the house continued its return to nature. Geoff's stateside home equity loan was approved in early September, tower permits were issued in late October, and the place officially became his property on November 1, 2000.

Getting Down to Work

Finally, the work could begin in earnest. The Thompson's hurried departure in 1998 allowed no time to remove food from the cabinets and refrigerator, and the house had been left unattended for two and a half years. The yard was completely overgrown by sticky cactus, and it took Geoff two hours to chop through the brush to reach the mailbox just four feet off the road.

Inside the house, the odor was overpowering, and deep layers of animal droppings covered every horizontal surface. Furniture was chewed to bits, walls were covered with bat guano, broken glass littered the floor, and wall and ceiling panels had been chewed apart, leaving tufts of pink insulation oozing through the gaps and in wet heaps on the ground below the eaves. None of the plumbing worked, and electric power would not come on. The telephone had long since been disconnected, and the kitchen appliances had been reduced to piles of rust.

Geoff managed to sleep the first night by wrapping a towel over his face to stifle the odor. First thing on the agenda for the next morning was a trip to the local grocery store to buy out their supply of brooms, mops, Lysol, Comet and whatever else they had in the realm of cleaning chemistry. But before the cleaning could begin, the water would have to be turned on. Another hour spent taming the cactus with a machete unveiled the shutoff valve near the road, a missing hose bib (which Geoff just happened to have in his suitcase) was installed, and the water flowed! Of course, it had nowhere to flow, since the drains didn't work either. He spent a few hours with a 30-foot drain snake he also carried in his suitcase (doesn't everybody?) digging critter carcasses out of the sink and tub drains, and finally succeeded in opening most of them. The toilets were another matter, however, and eventually had to be replaced. Good thing Geoff is a proficient plumber!

The power distribution box looked like a prop from a Frankenstein movie—all fuses, no breakers—and it was covered with three decades of faded handwritten notes and duct tape. Incomprehensible. He picked up some fuses from the floor,

stuck them into available holes, turned on everything that looked like a switch, and much of the power came on.

Much of the first days were spent throwing out almost everything. Drapes, curtains and furniture all smelled terrible. They were hauled out to the porch where they lay in a mountain of icky, filthy, putrid material. Eventually a garbage truck appeared on the road and took a few bags of trash, and a local, appropriately named Zoom, agreed to haul off the remaining five truckloads in his pickup, for a price.

After a week of cleaning, reinforcements arrived in the persons of Doug, K4LT; Jim, KP2L; and Noel, W9EFL. By this time, the water heater and one of the toilets were working, so the fresh troops found reasonable accommodations amid the ruins. Another expensive trip to town resulted in the purchase of a refrigerator, washing machine, toaster and much paint. Doug attacked the backyard cactus with a weedeater, finally freeing up the tower and tribander.

A (Potentially) Shocking Discovery

Eager to get on the air to sample the legendary propagation, Doug, K4LT, fired up the TS-930 to a temporary antenna and worked a couple stations, after which an honest European gave a 597 report. After some juggling of wires in an attempt to eliminate the hum, a big bang and a smoking radio gave a clue that in Curacao, the green wire is *not* ground, but one of the hot 220 V legs. Shortly thereafter, Jim, KP2L, was attempting to clean the rust from the tower base, when he drew a large arc off the end of the wire brush on the electric drill. A quick test with a VOM showed that the drill case was 220 V above ground! Many days of headscratching and consultations—both local and stateside—began to unravel the mysteries of the 3-phase, 50-Hz house wiring. Only on a subsequent visit to the island was Geoff able to correctly connect the wiring to the local service.

Telephone service was equally sporadic. Calls to the local office eventually resulted in a technician's arrival. He picked up the phone, confirmed that it was dead, and disappeared. Several days and many phone calls later, another tech appeared, reconfirmed that it was dead, and vanished permanently. Geoff tapped into the line of the vacant house next door until a third technician finally materialized and declared the telephone to be in working order.

Signal Point is Born

The first contest operation from the renovated QTH was the CQWW CW in November of 2000. Geoff and Jim were

joined by Jeff, KU8E, but by that time Doug and Noel had returned to the States, so that they could spend the Thanksgiving holiday with their families (*CQWW Committee—are you listening?*). The three remaining ops managed to score 5th place multi-single worldwide (based on uncorrected scores), which they declared not too bad considering they had only a tribander at 50 feet and some temporary wire antennas. All were impressed by the wonderful propagation from the island, as the pileups never relented during the contest period.

Once the house became habitable, plans were spawned for improving the antenna situation. Living on a Caribbean island, one can't just hop down to the local wholesaler for some Rohn 55. In fact, one can't phone an 800 number and expect delivery of antenna supplies on the next UPS truck either. And baggage accompanying a traveler to Curacao isn't going to transport a lot of RF radiator. So the group put together a wish list and gathered towers, antennas, Phillystran, hardline, hardware, tools and coax—some donated by CCC members, some financed by club dues and assessments—and contracted with a shipping company to transport the whole shebang: 5379 lbs, 770 cubic feet, including 32 boxes, 11 bundles and 34

tower sections. Geoff drove all this stuff to the port in Miami in a Ryder rental truck in late April. As we write this, the huge pile of antenna effluvia sits in one bedroom awaiting the arrival of CCC members who have volunteered to work during the summer. Come contest season, the station on Curacao, now

dubbed Signal Point, will be a contender once more!

For more information on Caribbean Contesting Consortium and Signal Point, including photos, and rental information, visit the CCC Web site: asgard.kent.edu/ccc. ■

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JOTA 2001: Scouting and Ham Radio; Together Again in 2001

Jean Wolfgang, WB3IOS
wb3ios@arrrl.org

This year marks the 44th year of Scouting's Jamboree-on-the-Air (JOTA). During this weekend event, Boy Scouts and Girl Scouts from around the world will have the opportunity to contact each other over Amateur Radio and to exchange information about their locations, themselves and their scouting activities.

During JOTA weekend you may hear Scouts operating from an Elmer's shack, a weekend campsite or a backyard picnic.

Do you want to help introduce the Scouts in your area to Amateur Radio? You can download free brochures from www.arrrl.org/FandES/ead/materials/ and copy and distribute them. To help Scouts prepare for the event, consider inviting them to your shack and letting them make a few QSOs before the JOTA weekend. This will give the Troop or Den members a taste of the fun involved, and will also help alleviate any "mike fright"



Jennifer Lee enjoyed operating from her grandfather's (Jack Paule, W5JRP) station during JOTA 2000.

that might occur on the weekend of the event.

JOTA 2001 will begin Saturday, October 20th, 2001 at 0001 (your local time),

and runs through Sunday, October 21st, 2001 at 2359 (your local time).

Worldwide suggested Scout calling frequencies for phone operations are 3.740, 3.940, 7.270(US), 7.290, 14.290, 18.140, 21.360, 24.960 and 28.390 MHz. Suggested CW calling frequencies are 3.590, 7.030, 14.070, 18.080, 21.140, 24.910 and 28.190 MHz. Please help avoid congestion by using these frequencies to establish a contact, and then move to a nearby frequency to carry on the communications.

For added fun, keep a US and a world map handy to mark off the locations of their contacts. Encourage Scouts to experience Morse code by sending their name. (With a little practice, they might even want to try sending it out over the air.) The possibilities are endless! For more JOTA information visit www.arrrl.org/FandES/ead/#scout.

First and foremost: Have fun! ■

Why I Don't Do SO2R

Fred Laun, K3ZO
aalaun@attglobal.net

Dennis, K7BV, asked me to write a piece on why I don't do single operator two radio.

First of all, let me make it quite clear that I have no objection to the use by others of SO2R. I am quite happy to have my competitors use the technique—and I congratulate them for being able to do so. I do not advocate any rules changes that would limit SO2R in any way.

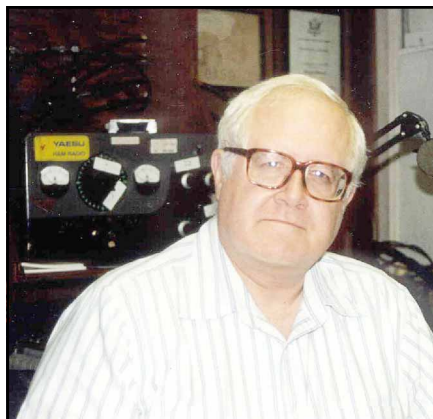
My reason for not using SO2R is purely personal. I like to compete and I enjoy the competition I find here in the USA. That's why I prefer to operate the major contests from my home station rather than from overseas. But for all of my competitive fervor, first and foremost I want to enjoy operating the contest. I don't think operating SO2R would be as much fun for me as operating contests the way I always have. Therefore, I have no intention of changing.

Some would say that this is a sure recipe for me to fall behind. The signs are already there. In this year's WPX CW Contest I will be lucky to be in the top 15 among the SOAB High Power crowd here in the US. Never mind. I had a lot of fun in the contest, and I had no regrets after I saw the other scores on 3830.

Some advocates of SO2R say that in the traditional method of single-operating contests there is a lot of wasted time. While your machine calls CQ for you, you are just sitting there doing nothing. How much more productive it would be if you could be using this "down time" to S&P stations on other bands.

My answer is that for me, this is not "down time." This is the time when I savor the contest and have a chance to think about what is happening, how the propagation gods are behaving, and what unusual stations I have worked or what strange openings I have observed so far. It also allows me to pace myself through a long contest where I know I have to conserve my energy in order to be able to put in my customary 41 or 42 hours of on-air time in a 48-hour contest.

Let's face it; I'm old and fat. I'm not in the kind of physical condition which permits me to go flat out right from the start and hang in there until the end. And—in addition to enjoying contests—I enjoy eating, so I'm not about to change my lifestyle in order to move up in the contest standings. I like my life the way it is. I don't believe in sacrificing my enjoyment of either my life or the contest in order to jump up a couple of places in the final standings. I will do things my



K3ZO

way and gladly accept the results.

In discussing another subject some time back on the cq-contest reflector, I used, as an analogy, the example of the drinker who chugalugs his beer to show

everybody present what a man he is to be able to hold his liquor that well, versus the social drinker who slowly sips a fine wine, savoring every drop, because he truly enjoys the flavor. I consider myself a member of the latter category. Who do you think will have the biggest smile on his face when the imbibing is over, the wine sipper or the chuggalugger?

Besides which, one reason I like contests is because I love QSLing. Whether or not I work 500 QSOs more or less in a 3000-QSO contest, the QSLs will come rolling in just about as fast. Contests are the greatest way in the world for a QSL lover to celebrate Christmas—12 times a year—as that monthly box arrives from the Bureau.

So go ahead, operate your SO2R and enjoy! As for me, call me old-fashioned or out of touch, but I'll just keep operating contests the way I always have, thank you! And I'll still be smiling when the contest is over!

73, Fred, K3ZO

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NCJ Profiles—A Texan Rides West —Tom Taormina, K5RC

H. Ward Silver, N0AX
hwardsil@wolfenet.com

To my readers: This will be the final N0AX-generated NCJ Profiles. Over the past eight years, I've been delighted to make new friends (including the one that I invented and remembering the one long gone) and to introduce you to some of the faces and personalities behind some well-known call signs. Thanks to all of you for your feedback and positive comments. I suppose it's only fitting that my final column will be a profile of the rascal that talked me into this in the first place: Tom Taormina, K5RC.—N0AX

Although these days, K5RC will be putting his call in your log from Nevada, Tom is a Texan—from his call sign to the twang in his voice. It's hard to imagine him as a 13-year-old Novice on Long Island—WV2GGB—yet, there he is now, running 'em in the NAQP (a contest he co-invented) and Sweepstakes. Tom and Midge, K7AFO, moved the "MT-Nest Ranch" west to Virginia City, NV (yes, *Bonanza* country) in 1997, and Tom is now a NCCC member (sorry, TDXS). But most of his contest history was written in the land of the Alamo.

The Lone Star State was also the land of the Texas-sized multi-op. Back then, Tom was known as WA5LES. With Chuck, K5LZO (now SK), several SS records were set, but his true mark of success was causing a rule change, and that badge of honor (regarding transmit interlocks) was received in the late '60s. Tom went on to contribute to the building of the K5RC/K5GA multi-multi station and team, but Hurricane Alicia took care of that in 1983, along with NA5R—which he also built. K5XI's station, which sported a 250-foot 20-meter tower, was his final "Big Project" in the 5th district.

Tom is a fan of state QSO parties and has worked hard to make them a success. Some of his better-known accomplishments are "The Great Armadillo Runs" of 1983-85, where the Texas DX Society activated every county in the 5th call area. Those were followed by "The Armadillo Run of 1986" where 75% of the counties in the US were activated over two weekends. He even led an effort to have "Armadillo County" created during the 1986 Texas Sesquicentennial. Why should DXCC be the only place where you'll encounter a "new one"?

Speaking of DX, in 1964—along with K5LZO—he was one of the first Americans to obtain permission to operate from French Polynesia, signing FP8CB/FO8. He was editor of the *West Gulf DX Bulletin* in the mid-1960s, and



Tom Taormina, K5RC

was a director of the YASME foundation for 34 years.

Long-time testers will certainly recognize K5RC as the editor of *NCJ* for a five-year period in the early '90s. He's also served on the CQ Contest Committee. Professionally, he's a business and management consultant, serving as the managing partner of Productivity Resources, and has been a leader in his field of quality systems for 30 years. Tom has published six books on the subject. Check out www.ConsultPR.com to see what a large part contesting has played in his business life, too (his business partner is K5KG). Not only that, but he also introduced high-strength Chrome-Moly steel mast technology to the amateur contesting arena, making it possible for a number of those big arrays to stay up!

Since this is a "close-the-circle" project for me, I thought that with Tom's background, it would be interesting to ask his opinion on subjects relating to the direction of our niche within Amateur Radio. We started with a backwards glance, discussing the contesting techniques of ten years ago. "In 1991, perhaps the most tedious chore was manually tracking times and band changes in multi-single contests. We had invented convoluted systems of having designated timekeepers maintaining manual records, tracking rates and band openings and queuing operators when they were about to become a



Deep in meditation, Tom searches for enlightenment on 20 meters.

multiplier station or a run station.

Then a peek in the other direction: "I'm certainly not a futurist, but I wrote an *NCJ* column many years ago that alluded to having the computer control our radios while we focused on operating. That has certainly come to pass. The only prediction still in the future is of data being relayed in real time to the contest sponsor from the participants."

Any prognostications on what we'll find on our contest weekends in the fall of 2011? "I think we will see a merging of state QSO parties into common weekends to promote activity and reduce the impact on our families. I do believe we will find a way to upload contest logs in real time to the sponsoring organizations, and, in turn, receive data on who is working whom at any given time. If we could see a map of QSO activity as it is happening, what a great new world of operating strategy we would have to challenge us."

Have contesters changed in the past ten years? "The 'graying' of contesters has led to a bit more conservatism among

us; however, we are a very competitive lot, so the lust for competition combined with the convenience of technology has, in my opinion, led to very little change in who we are. The big change I have noticed is that we have many more distractions for our time. Many former contest junkies are actually spending time with their families and on other activities.

"I clearly remember back when I spent 40 weekends a year on antenna work and contesting. Even though my wife is a ham, that dog won't hunt any more. [I'm not sure that dog ever hunted very well around my place!—NOAX] The best and worst changes are probably the same answer, the lowering of our standards for licensing. As a negative, the art of CW is now destined to slowly pass away. As a positive we have pragmatically found a vehicle to attract more amateurs and to utilize more of our spectrum."

There has been some speculation that the "last great hurrah" of HF contesting is the peak of this solar cycle—as the baby-boomers are building their big stations. Is the current state of affairs something that is stable or even an indicator of higher participation and scores to come? "One of my dearest friends and mentors, W5ADZ, used to count his age in sunspot cycles. He was in his seventh when he became a Silent Key. One of the jewels he conveyed to me is that the solar cycle is like the stock market and housing prices. They have their ups and downs, but the trend has historically been upward. I believe that technology and our competitive spirit will find new ways for contesting to continue for many more solar cycles."

European activity is exploding, while Asian activity is even or declining. How has this changed contesting for you and will the trend continue? "Well, it has certainly handicapped me with my move to the West Coast! China is rapidly moving toward an economic system that will lead to middle-class citizens finding the time and funds for ham radio. By simple demographics, the population of Asia will become a factor in the years to come.

"The WRTC events have been an absolute blessing to contesting as a sport and to the fellowship that is the reason for being a competitor. For those who have not participated in a WRTC event, you have missed an incredible experience of being with your peers in a unique environment of sharing, learning and fun. If only as an observer, I strongly urge every contender to attend WRTC2002.

"Since my move to the West Coast four years ago, I have been like a kid with a new toy—due to the number of rare Asian multipliers I work during contests. I may not win DX contests from Nevada, but I am having more fun!" And isn't that Reason #1 that we do this, folks? ■

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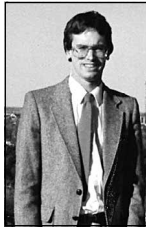
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First-Ever Pacific Northwest/Europe 6-Meter Opening Occurs During the June 2001 ARRL VHF QSO Party!

In my [last column](#), I recapped the action in the 2001 50 MHz Spring Sprint, and closed my comments with the statement “I certainly hope that the great band conditions continue for the June VHF QSO Party. This year’s contest could be a record breaker.” Little did I know just how accurate that prediction would be.



N0JK

This year’s June VHF QSO Party started off with fairly widespread aurora Saturday evening. After the aurora broke up—around midnight—auroral Es occurred. A rare “all night” 6-meter Es opening took place between the Midwest and the East Coast. N0LL reported that he ran 2s, 3s and 8s from midnight to just after local sunrise with good signals. But the best would come later Sunday morning, on June 10th.

Tree, N6TR, was operating the contest from the K7RAT station in Oregon. He had 1500 W on 6 meters feeding a pair of Yagis with 37-foot booms at 45 and 95 feet. At 1700Z, he was splitting the power between the two Yagis—one was pointing towards W6 and the other towards VE6. He worked KF6JBB in DM12 at 1718Z. At 1722 he heard a station with a European accent calling him and copied DF9CY! Christoph, DF9CY, was running only 10 W. Unfortunately, Christoph was experiencing heavy Russian QRM and could not complete the QSO. Tree, now alerted to the path to Europe, switched all the power to the north-pointing Yagi and continued calling CQ. He was rewarded with 13 European contacts in 5 countries! Other stations either heard what was going on or saw posts on the packet/Internet clusters and joined in. A number of stations reported that they thought the spots on the clusters were a joke at first, and disregarded them.

Tree worked the following European stations on 6: G4FUF, ON9CFB, PA5EA, PE1LCH, F2YT, G3SNN, GW4VEQ, ON4ANT, ON4GG, G4IGO, PA2VST, PA7MM and G0LCS. These are the first-ever Pacific Northwest to Europe 6-meter contacts! Tree noted that the signals from Europe were better on the 45-foot high Yagi than on the 95-foot one. Some of the signals had an auroral buzz; others had the slightly watery-sounding, fading type of signal that is typical of “over the

pole” paths. Other stations in the Pacific Northwest that reported making European 6-meter contacts included VE7SL, VE7AGG, VE7XF, VE7DXG, KB7WW, K7RWT, NN7J, and K7OFT.

It didn’t take high power to make it on this opening. PA2VST, running 100 W into a 5-element Yagi, worked VE7SL at 1743Z. VE7DXG, using 150 W and a 5-element Yagi from a mountaintop in CN88, worked ON4GG at 1813Z. The stations running high power and multiple Yagis, however, made the majority of the contacts. They all reported pounding heart rates, disbelief and amazement... “My hands were shaking so much I had trouble turning the VFO” said VE7SL.

W7EW, W7FI and VE7SKA either heard Europeans or were heard in Europe. W7FI noted, “I first got on this band 41 years ago as a 13-year-old. This wasn’t supposed to happen, although I always thought we would have a better shot (at Europe) on sporadic E than F₂. I wasted about 15 minutes—probably when signals were better—believing that the OH2AQ DX Summit posts (oh2aq.kolumbus.com/) were the work of some demented bloke, as occasionally happens. I didn’t log anything, and could only hear very weak signals coming back to ‘RAT and others. I called K7OFT on the telephone, and heard him work ON4ANT on 50.100. I copied ‘ANT at about a 419. I called and got a QRZ from him twice, but then he dropped down and that was that.”

What was the propagation mode for this opening? GW4TEQ speculated “...that the European linkup was attributable to Es, I’m not sure it was Es all the way, though. It could have been some other propagation mode in the middle, and Es at the North American end.” VE7DXG noted some of the European signals were “quite strong, like Au-E.” I suspect that both views are correct. I believe there were Es links at each end and the main propagation mode in the middle was auroral Es. Auroral Es had been worked earlier in the continental US and as the auroral oval moved northward, the auroral E zone would be in position to support this opening. Thus, this 6-meter opening was likely the fortuitous combination of summertime mid-latitude Es and auroral Es. Congratulations to all who took part in this opening and thanks to Jason Timmis, VE7AGG, for his summary of this event.

Concluding, K7RWT observes “I’ve

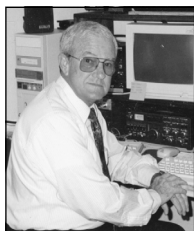
been operating on 6 meters from Portland, Oregon since 1963 and this was the *first European opening* in all of that time that I—or anyone else who has been on the band—has ever seen from here. It truly was a *rare and phenomenal* event.”

Should the Dates for the June VHF QSO Party be Changed?

As I’m writing this column, 2 meters has been open today via Es from Kansas to Florida, Georgia, Alabama, Virginia and CO2OJ in Cuba! This stuff would have been fun to work in the June contest. While conditions were great for many in this year’s June VHF QSO Party, many propagation gurus believe Es tends to peak the last week of June through the first week of July. They believe conditions would be better for the contest if the dates were moved. A study by Ken Neubeck, WB2AMU, titled “A Look into the Causes of Sporadic-E and Related Phenomena” presented in the *Proceedings of the Central States VHF Society 1993* supports this. After analyzing the occurrence of mid-latitude Es openings, Ken found “...that there are strong reasons to suspect that the angle of the earth to the sun plays an important part in this type of propagation.” Thus Es would tend to peak around June 21st when the zenith angle to the sun is at its maximum of 23.5 degrees. These are statistical averages, and a particular weekend could have great or terrible conditions. Based on this data, ARRL Field Day could be expected to see, on average, better Es propagation than the June VHF QSO Party. Often that seems to be the case. On June 23rd, 2001, there was a 3-hour 6-meter opening from the Caribbean to Europe. Jimmy, W6JKV, found that over the years the first week of July is the best period for long haul multi-hop Es from the Caribbean to Europe and the states.

It is unlikely that Field Day weekend would be swapped with the June VHF QSO Party weekend. The June VHF QSO Party, however, *could* be moved to the last weekend of June or the first weekend of July. The Es data tends to indicate that this is worth considering. Should VHF contest ops lobby for a change of the contest dates? Had the June VHF QSO Party not occurred on June 8th through 10th this year, would the Pacific Northwest/Europe opening have been discovered? ■

I believe that in every ham radio contestant's mind resides the wish/hope/dream to be the DX—traveling to those exotic places, operating from the other end, handing out mults... The primary motivation is simple—to have a good time doing it. (The desire to do this ranks right up there with that of possessing bigger antennas, better radios, higher towers...) Our guest columnist this month is John, WA9ALS, who recently realized just such a wish and who overcame all of the trepidation, packed up his family, and journeyed to VP5-land for the RTTY Roundup.



K7WM

A Visit to North Caicos for the 2001 ARRL RTTY Roundup

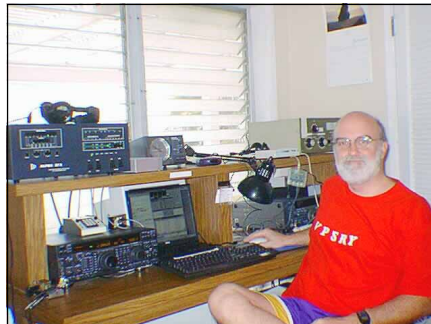
by John Fleming, WA9ALS

How does a little pistol RTTY contestant increase his score? Station improvements will certainly help, but a really fun way is to be DX! I think we all enjoy DXing and following the tales of various DXpeditions, large and small. Well, for this—only my third RTTY Roundup—I decided to take the plunge.

At first the task seemed a little overwhelming, so I began by thinking conservatively. Maybe I should travel to one of the rare RTTY states like South Dakota? I mulled over all the travel, equipment and antenna considerations. All presented various obstacles to a practical plan. One night in July, I stumbled upon another option: the Rent-a-Shack!

While surfing the qth.com Web site, I landed on the page of Bud Foster's (K4ISV) Caribbean vacation home: *La Villa Rose* (www.qth.com/vp5/index.html). I was immediately caught up in the warm, beautiful climate depicted in the many images, and began to imagine myself operating the contest in that tropical environment instead of our usual Indiana January weather.

I wasn't sure how my family would react to a proposal for a trip to Whitby, North Caicos. Although warm and beautiful, it is a fairly remote island without the usual tourist trappings. (Bud warns that this is not for everyone.) Remote and quiet, however, actually sounded good to my XYL, and we figured the kids would have all the diversions



John, WA9ALS/VP5RY, at the controls of the well appointed shack at *La Villa Rose*, North Caicos.

VP5RY

2001 ARRL RTTY Roundup

Band	QSOs	State	Province	DX
80	15	0	0	0
40	297	2	1	14
20	433	43	6	30
15	260	0	0	2
10	335	2	0	3
totals	1340	47	7	49
1340 QSOs points × 103 multipliers =				
138020 (claimed score)				

they needed at the beach. The planning began.

Travel Plans

We had not previously traveled much outside of the US, and had many questions regarding just the travel and amenities considerations (not to mention my many questions on the ham radio aspects). These included—but were not limited to—what to take, safety, passports and air travel arrangements.

The British West Indies consists of two groups of islands—Turks and Caicos—that are located approximately 950 miles southeast of Miami. Providenciales (better known as "Provo") is the main tourist stop in the Caicos group, and is serviced by American and Delta airlines. A little research on the Web soon revealed that I had picked a bad time to travel there. During the week immediately after New Year's the airline rates are high. I was focused on the Roundup, however, and didn't want to let that be the deciding factor. This might be a once-in-a-lifetime experience!

Reservations were made for six—my wife, my three harmonics, my mother-in-law and me! After arrival on Provo, we would have to make arrangements to

travel to North Caicos via Global Airlines, a regional carrier that would take us there via twin-engine airplane (more on that later!).

Although passports are acceptable if you have them, they are not required for US citizens traveling to the Turks and Caicos. Adults need only a birth certificate and a photo ID. A birth certificate is all that's required for children.

Our list of questions only grew longer as fall turned into winter. Fortunately, Bud was very responsive to our e-mails, and he sent us a nice mailing detailing things such as house rules, important telephone numbers and places to visit.

Gearing Up

Once travel arrangements were in place, I began to think about what to take for contest operation. I think you'll agree that the station Bud provides is very amply equipped. It is set up for two-rig operation with an FT-1000MP/Alpha 87A and a Kenwood TS-950S/Alpha 78, and there's even a spare transceiver and amplifier! The antenna farm consists of a 10-element Bencher triband Yagi, a 2-element Cushcraft 40-meter Yagi and inverted Vs for 80 and 160 meters, all supported by a 50-foot tower.

Although several world records have been set from *La Villa Rose* on SSB and CW, no one had operated a RTTY contest from there before. Having an FT-1000MP there to use simplified things considerably for me as that is my main rig at home. I only needed to take my cables and keying interface. I didn't know anything about the Kenwood, however, and I didn't want to get involved with making cables for a rig that I didn't have available for pre-trip testing. I decided to take my IC-706MKIIG as a second rig to use for possible two-radio operation.

I managed to pack the '706, a CT-17 level interface, a PC keyboard, a USB mouse, a USB hub, two USB serial adapters, a Hal DXP-38, all the necessary interface cables (including new duplicates) and a Heil headset in a single hard-sided carryon suitcase. Everyone assured me there would be no trouble getting through airport security with this stuff, but I carried photocopies of my US license and a copy of *QST* and *CQ* magazines just in case.

Bud has a computer set up there that has CTloaded, but that software doesn't include built-in RTTY support. Having some experience with the "nuances" of *Windows*, I didn't trust that I would be

able to get everything I had in mind going on a computer that I knew little about. The only thing that made sense was to take my own laptop, pre-configured and tested with all of the software and hardware that I intended to use. This was somewhat time-consuming, but was actually a lot of fun. Besides the Roundup, I wanted to operate some SSB, PSK31 and MFSK16, so I loaded on the appropriate software and my logger, DX4WIN.

The Paper Chase

My VP5 licensing was handled by Jody Millsbaugh, VP5JM, through the local magistrate's office. For a \$20 fee, you can apply for a license to use VP5/ in front of your home call. This license is good for the calendar year beginning in January, and it apparently can't be applied for until December of the previous year. For an additional \$20, you can also secure a call sign valid only for a special event, such as the Roundup. I thought this option was well worth it, and managed to get the call sign VP5RY. I was afraid that call sign recognition algorithms in some of the RTTY contesting programs might pick out my home call from VP5/WA9ALS—but not the VP5 part—leading to errors in logging and increasing the possibility of repeats.

As the time approached for our departure, I grew nervous about not actually having the licenses in hand yet, but Bud reassured me there would be no problem. I can't believe how long I waited before it occurred to me that I should begin acquainting myself with the communication rules that apply in that area! Would I be under British amateur rules, limited to 400 W? It turned out that IARU Region 2 regulations apply, allowing up to 1500 W.

Just before departure, Jody assured me that the licenses had been granted, but I didn't actually have the papers in hand until *after* I got back home. As a newbie to DXpeditioning, this made me very nervous, but I guess it's not particularly uncommon! I don't know exactly what I expected, but I was really surprised and pleased to finally receive nice 8x10-inch certificates—suitable for framing—for each of the licenses: VP5/WA9ALS and VP5RY.

We're Off!

Finally on January 2nd at about 5 AM, on a bitter cold day with much snow on the ground, we took off for Indianapolis to start our journey. We were scheduled to depart at 7 AM on American Eagle, nonstop to Miami. The plane was pretty small. It had two seats on either side of the aisle and I couldn't stand up without bending over. I'll admit to some preflight jitters as I watched them deicing the

wings in the dark.

Of course, the flight to Miami was uneventful. From there we were transferred to a much larger jet for the trip to Provo. When we touched down on Provo, I fully expected to be kicking back on a sunny beach within a couple of hours, but this was not to be the case! Getting through customs, I'm told, is usually quick and painless. We stood in line for almost two hours before we could get through.

We tried to barter for a decrease in the airfare price for our jump to North Caicos. The rate that Global Airlines demanded was higher than Bud had indicated. (Later telephone communications with Bud resulted in the better rate for our return trip.)

My wife and her mother left me with the kids and went off in a taxi to purchase groceries and water for the week. That took a couple of additional hours. All the while the clouds were building, and I was getting preflight jitters again. Finally we boarded the twin-engine plane, and I was happy to discover that our pilot was a ham! The flight to North was fun, but we just barely beat the rain.

Ground Fall

Once safely on North, Mack, our liaison to *La Villa Rose*, greeted us. On the short van trip from the airport, Mack filled us in on a "problem with water in the house." It turned out that the water storage tank had sprung a leak, and water would pour out whenever the pump ran. As I was quickly adjusting to his dialect, he explained that a new tank should be coming over by boat, but the time of delivery was uncertain. Fortunately, the leaking tank was in the garage, which had a stone floor.

I would never believe that we'd have any chance whatsoever of getting emergency plumbing service on that remote island that same evening, but just a few hours later the repair was complete! Mack enlisted the services of a local plumber. He actually uninstalled a new tank from his church and installed it at *La Villa Rose*, having to entirely rework the associated plumbing in the process. The job was done by about 10 PM. Wow!

We were pleased to find everything just as Bud had described—except the weather! It stormed off and on for about four days. There was no problem with lightning, but it was gray, rainy and only about 70 degrees F—not the most ideal beach weather, but the kids still enjoyed it, and I had a radio to operate!

Exploring North Caicos

We had several "local" experiences. *La Villa Rose* has a motorbike, which my son Wes and I took exploring one day.

About 15 miles from home, we had a flat tire and ended up riding back home in the back of a Belonger's (local jargon for a "resident islander") pickup. Fortunately, the locals are very friendly and helped us several times, although nothing moves very quickly there (unless, of course, Mack has something to do with it!). At first, I had quite a bit of difficulty getting anyone to take an interest in fixing the motorbike. After I told Mack about it, however, it was picked up, repaired, and delivered back to the house within a few hours! Mack can make things happen on North.

Despite the small size of the island, there are lots of churches, and on Sunday my family attended some local services that were within easy walking distance. Most of the homes on the island are quite modest to say the least. The Whitby elementary school, the police station and several commercial establishments looked nice, but some of the other buildings and homes were in various states of disrepair.

La Villa Rose is located about midway along the north coast of North Caicos, and the shoreline is beautiful! We rarely saw people along the beach—perhaps 2 or 3 groups of people might walk by during an entire day. The water was gorgeous and just the right temperature! We didn't get into serious snorkeling, but we did have fun using swim masks to check out the fish.

Pre-Contest Operations

I worked some 10-meter SSB with the 'MP and the Yagi just to get familiar with the station equipment. I just had to try out the Alpha 87A, and it is a delight to use! Not unexpectedly, however, I quickly saw how even a not-so-rare VP5 call sign can attract a pileup, even barefoot. It was great fun operating contest-style even when there wasn't a contest going on! I also activated the island on MFSK16 one evening, right in the midst of a "14.080 DX Window" debate that was raging on the reflectors! Thanks to Web access from the shack, I was aware of these discussions and operated most of the time above 090.

It was easy to rearrange the station's equipment slightly to make room for my laptop and the external keyboard. Unfortunately, right before we left for the trip, something happened with the installation of the drivers for my 4-port USB serial adapter, and I never got it back while on North Caicos. Without that interface, I really couldn't operate two radio effectively, and at my level of experience with this first trip, I figured I would have enough to do with one radio! I ended up using a single-port USB serial adapter to read the 'MP's frequency into *WriteLog*. The laptop only had one PS/2

port, used by the external keyboard, and the mouse ties up a USB. I couldn't see operating a RTTY contest with the laptop's touch pad and built-in keyboard!

Roundup Time!

The time of the contest drew near. Conditions had been superb on the several days leading up to Saturday and, for a contest beginning at 1800Z, I wasn't sure which band to start out on. I ended up deciding on 20 meters, thinking I might move up if it was too crowded. Ken Silverman, K2KW, once told me that nothing would prepare me for what would happen the first time I called CQ from VP5, and he was right!

I called CQ, and a run lasting for five hours and 45 minutes ensued, with Jim, AD1C, being the last QSO of that first run. I just couldn't believe it! Rates of over 100/hour were not uncommon—I had never seen them that high when operating from Indiana. What a thrill! After awhile there would be so much QRM I would begin to wonder if I actually had the frequency. But after I finally picked out a call sign, that one would come back completely in the clear. All that QRM was the pile calling me—*unbelievable*.

I don't have a 40-meter Yagi at home, and the Cushcraft 2-element Yagi was a joy to use. My first run on 40 meters Saturday evening was 2½ hours long—*WOW!* Simply put, this was almost too much fun for a grown man to take! I ended that first day of the contest at 0800Z after 14 hours of operation with 718 QSOs. This was more than I had ever achieved from Indiana, and there was still another day of RTTY contesting ahead!

After about a six-hour break for sleep and a quick walk on the beach, I jumped back in on Sunday morning on 10 meters and had a 2½ hour run that netted 321 QSOs. Not long after, I had a 2½ hour run for 208 QSOs on 15 meters—a rate of about 80/hour. I finished the contest with 1340 QSOs and a claimed score of 138020 points.

I've had problems with stamina during other contests, especially when action was slow. Not so this time! It was simply two straight days of constant high—and yes, time *does* fly when you're having fun. The weather was great all weekend, and we had one more day on Monday to enjoy the ocean and sunshine before heading back to the snow.

Homeward Bound

I worried about getting off North Caicos in time to make the flight from Provo to Miami, but Mack picked us up right on schedule. Once again, I had some preflight jitters sitting in the twin-engine airplane, in the fog, waiting to take off.

Finally our ham pilot Donny stuck his arm out the tiny window and wiped off the windshield with his hand (clearing half of it), and off we roared! The windshield cleared as we got off the ground, and we had a beautiful view of the area on our 10-minute flight to Provo. There we found a brand new American Airlines jet waiting for our flight to Miami. Unfortunately, something was amiss, and they eventually cancelled the flight.

What was to follow was a nightmare in airline travel, resulting in our spending eight hours (and two meals) in the Provo airport and experiencing other delays with the connecting flights. We finally arrived in Indianapolis at 1 AM local instead of the planned 2:30 PM! It seemed that Murphy struck this part of our trip—thankfully he was absent during the Roundup!

Somewhere about half-way between Atlanta and Indianapolis, I started wondering where my car keys were... You guessed it—back on North Caicos! So at 1 AM in Indianapolis, we had to rent a car

to get us the rest of the way home!

Although the weather was unusual and the journey home a bit rocky, overall the trip was great, and the contesting was everything I expected—and *more!* My main reason for sharing this story with you is to encourage you to think about doing something similar. Renting a shack is a great way to get your feet wet (!) operating on foreign soil. Operating from *La Villa Rose* offered a great combination of remoteness and creature comforts. Be DX—you'll never regret it!

73 and happy contesting! John, WA9ALS

That's it for this issue. John's write-up of his contesting adventure sure provides food for thought. I've been counting my pennies, and I still have a lot of aluminum cans to collect, mash and turn-in. If I could just get the airlines to lower their fares a tad, who knows what may transpire down the road...

73 de Wayne, K7WM

Contest DXpedition List

Steve Nace, KN5H
kn5h@earthlink.net

Hello Friends,

A hearty thanks to those who e-mailed info on their contest DXpedition plans in time to make this "official" listing in the *NCJ*. Are you *not* listed? Do you think that you've missed out on an opportunity to get some free advertising? Perhaps not, fellow mult chasers. The latest list is located at www.ncjweb.com (but you knew that already, didn't you?). Please let me know about your contest DXpedition plans, and see you in the piles!

73 de Steve, KN5H

Call/QTH	Category	Operator(s)	Status
2001 CQWW SSB Contest			
6Y6L	M/M	AC8G, WA8LOW, W8ILC, N7YX, N6HR	Firm
FS/AH8DX	SOAB	AH8DX	Firm
IH9P	M/M	KR7X, IT9BLB	Firm
P40A	SB20	KK9A	Firm
PJ2?	M/S	KU8E, K8NZ, N8VW, WC4E	Firm
PJ7/K7ZUM	SOAB	K7ZUM	Firm
V31JP	SB40	K8JP	Firm
VE2IM/z2	SOAB	VA3UZ	Firm
VE3SRE/z2	M?	VE3SRE+	Firm
2001 CQWW CW Contest			
5H1/K1XM	SOABLP	Firm	
8P9Z	SOAB	K4BAI	Firm
PJ2T	M/S	W0CG, KP2L, W9EFL, KU8E	Firm
V31JP	SB40	K8JP	Firm
VP5G	SOAB	K3TEJ	Firm
2002 ARRL DX Contest, CW			
PJ7/ND5S	SOAB	ND5S	Firm
V31JP	SOAB	K8JP	Firm
2002 ARRL DX Contest, Phone			
V31JP	SOAB	K8JP	Firm

But What About Bob?!

The time has come to turn over this column to a new editor with some fresh ideas. Please join me in welcoming Brian Kassel, K7RE. Brian has been a contributor to this column both during my term as editor and previously when Ron Stark, KU7Y, did his time. We have traveled to the Bahamas together for the past two ARRL DX CW contests (see my earlier columns) and have teamed up together as part of the "Aluminum Kings" in several QRP ARCI QSO Parties. Brian is an up-and-coming contester with a potential for greatness. But, more importantly for this column, he knows how to have fun with Amateur Radio contesting—and he's also able to tolerate being the target of some shenanigans from our editor: Dennis the Menace. Good luck, Brian, and please don't be too hard on me if/when you decide to take your revenge for the suffering you've incurred while joining me on my contest DXpedition misadventures!—N4BP



K7RE

Greetings!

Hi, I'm Brian, K7RE, and I love contesting, as long as it is *fun* contesting. This might seem like a contradictory statement, as *all* contesting is fun contesting, right? Well, just ask yourself, did you *really* enjoy your last contest effort? I mean—does contesting still deliver the glow that you experienced the first time that you threw your hat into the ring?

Certainly some specific contests hold more enjoyment for certain types of testers. I myself enjoy operating at the QRP level in most contests. Not that I'm some sort of a fanatic—I have been known to occasionally dabble in the realm of the 100 or even 1500 W power levels. I don't look at myself as a masochist, although QRP operating can often be quite a bit more effortless than many may perceive. There is a time and place for everything, I'm sure you'll agree.

The Wide World of Contesting

So what constitutes contesting fun? You might want to search your soul and answer that question for yourself. Are you really having fun? If you are a seasoned, dyed-in-the-wool tester, do you feel yourself slipping into a rut? If

Meet Brian Kassel

Brian is 56 years old and has been a ham since 1961, holding the previous call signs K3LSB and W5VBO. He has been married 11 years to Joanna, KD7GLY, who holds a PhD in Education and he quite often doesn't understand why she puts up with him at all. She is wonderfully supportive of ham radio and contesting. They have no children—although Joanna may well feel that Brian fills that category nicely...

Brian worked as a microwave radio technician in the Air Force for four years and then moved into the private sector telecommunications industry. He is now retired, enjoying his various ham radio passions that include homebrewing, packet radio and solar power. He has taught *Visual Basic* programming at the local community college and has enjoyed writing computer programs in *Basic* since 1982.

His Web site, www.dancris.com/~bkassel/index.htm#top, offers a free contest logging program: *QRPDUP*E. It is intended for beginners, who may find themselves a little intimidated by the very well known and capable alternative programs such as *TR-Log*, *CT*, *NA*, *Writelog*, etc.—K7BV

you are a newcomer to contesting, are you so overwhelmed with the seemingly hectic pace that you end up so tense that contesting is anything but fun? Hopefully, your particular present situation lies somewhere between these two extremes.

In this column I hope to investigate the range between those limits thoroughly—where the real fun exists. I'll need your help, of course. You see, in all contesting it pays to be a good listener, and that is—coincidentally—what is required of a decent columnist as well. I intend to listen to your inputs as to what contests—or areas of contesting—you believe to be fun, and help you share them with our readers. I plan to cover the often offbeat aspects of our favorite corner of the ham radio hobby.

The Telltale Signs

So what are the telltale signs that you may not be focusing on the fun part of contesting as much as you should? Here are just a couple of hints:

1) You kick back in the easy chair after you just finished a 24-hour stint as a single operator CW entry. You hear the usual CW bouncing around in your head. No problem, you been there many times before. However, this time you not only find yourself answering, but also completing, up to 17 more QSOs before you realize that you are not actually anywhere near a rig. And this occurs *before* the intake of any adult beverage that you may have held in reserve as a reward for the job well done.

2) Your lovely partner-in-life asks that you take out the garbage, and you not only reply with an "R," but you also zip out a "QRZ," snatch the trash bag, and then head out and try to collect the

garbage from the next door neighbor's significant other. (A short time later, when you regain your senses, you realize that this year's anniversary present will likely need to be somewhat more expensive than in past years.)

Now don't get me wrong here. Having fun doesn't necessarily make you any less competitive or serious about contesting. In fact, having fun may just help improve your score. Think about it. If you are on a constant rampage, exerting uncontrolled energy as you strive to work every station, how long will you be able to keep up the pace? We all know that maintaining a consistent level of energy throughout the length of the contest is important. If one is actually having relaxed fun, maybe those big numbers might be a little easier to achieve. Hey, as an added bonus you just may get to live longer, too. None of us are getting any younger.

One Man's Path to Salvation

Since I am primarily a CW QRP contest operator, I have learned to draw particular enjoyment from exercising the patience and perseverance that's sometimes required to complete a QSO. I participate in QRP-only contests as well, and there's something about knowing that the operator at the other end is running 5 W or less that gives me an additional kick with each and every contact I make.

Sometimes a breath of fresh air is all that one needs to pick one up out of a slump, too. Although there seems to be a QRP category in almost every major contest these days, don't forget about the QRP-only contests. They are almost exclusively CW oriented, but QRP phone entries seem to be on the increase.

QRP contesting has come a very long way in the last few years. In fact, the whole QRP segment has seen tremendous growth. It may very well be the fastest growing sector in ham radio today, in case you may not have noticed. This is probably in part due to the arrival of some very competitive and sophisticated low power radios, such as the Elecraft K2, and its little brother, the K1. Compare the specs of these rigs against any other rig. You may be quite surprised.

A Support Group

Probably the most-entered QRP-only contest is the ARCI QRP QSO Parties held in the spring and fall of each year. ARCI is a QRP organization. The acronym stands for "QRP Amateur Radio Club International." They have a great quarterly publication called, appropriately, the *QRP Quarterly*—also affectionately known as just *QQ*. Since QRP also means building to many enthusiasts, much of the magazine is devoted to construction projects.

There is also usually a good assortment of contest articles, and of course announcements of upcoming QRP contests, as well as results of the ARCI-sponsored events. There is a regular column written By Randy Foltz, the ARCI contest chairman, simply titled "Contests." In addition—for example—the January 2001 issue included an article entitled "Milliwattling in the CQWW." Yep, that's no misprint, folks—I said *milliwattling*! It was written by Jerry Scherkenbach, N9AW. His results? How about 110 QSOs with 95 countries—including all continents—and he was running 900 mW, that's 0.9 W. His elaborate antenna system? Just a Mosley Pro 57-B—certainly well within most contesters's budget.

So What's Your Pleasure?

So you see, QRP contesting is just one of the ways to put the old get-up-and-go back into your giddy-up. In the months ahead, I hope to provide a glimpse into the many other arenas of ham radio competition. I would like to be able to present actual first-hand accounts—and that's where you come in. The criteria? Well, you just have to be having fun! Let me know what you think, what you would like to see, what you like, and what you don't like about this column. I hope to highlight as many upcoming fun contests as possible as well, well in advance of their runnings so that you will be able to have time to add them to your contesting calendar. In the meantime, enjoy what you're doing, but keep in mind, there just might be something different you should try lurking just around the next corner, and you may even discover that it's fun!

73 de Brian, K7RE






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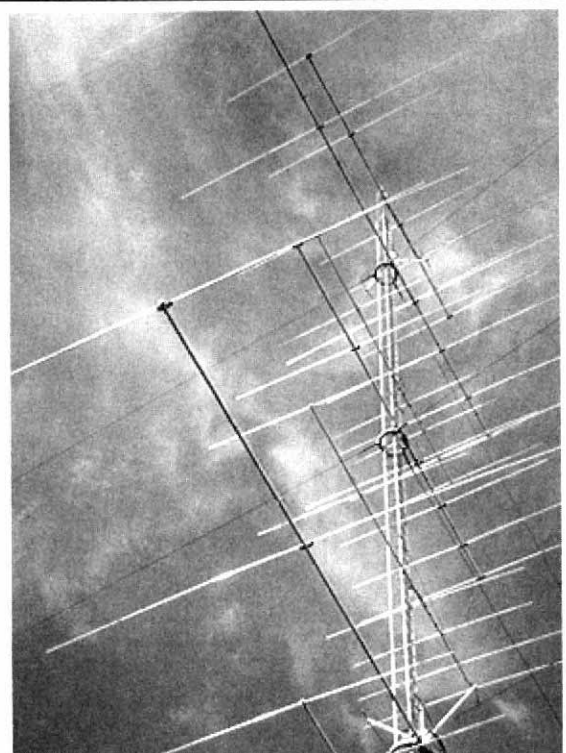
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Contest Expeditions

Kenny Silverman, K2KW
k2kw@prodigy.net

To run pileups, or not to run pileups, that is the question. Like, *Du-uh!* Contesters live to run pileups. If anyone tells you otherwise, they are probably in self-denial. Even after years of attending Pileups Anonymous, I still live for the thrill of working down a pileup from some DX location. The quest to find that perfect DX location is a never-ending process. And just when I thought I had found most of the Rent-a-QTHs in the world, people keep reporting on new locations! The icing on the cake is that many of the Rent-a-QTHs are in prime "3-point" contest locations.



K2KW

PJ2

Noah, K2NG, in a joint effort with K2TW and NO2R (all three are members of the Frankford Radio Club), has just completed a new Rent-a-QTH in the Netherland Antilles. It features a brand new three-bedroom house on a 1/4-acre lot and a 60-foot Rohn 25 tower sporting a Tailtwister rotator. The antennas include a tribander, a 2-element 40-meter Yagi and wires for the low bands. The site is located on a 300-foot mountain with an unbelievable shot towards Europe and good shots in all of the other directions as well. All three bedrooms are air-conditioned. Only the house and the antennas are currently included in the rental deal—you must bring your own equipment.

EA8

Bill, EA8AZC, has a nice house in a quiet part of Gran Canaria, Canary Islands for rent. It is located on the northeast side of the island on a hill overlooking the ocean. The house can support two adults and two children, and features a full kitchen, a small pool, a small weight room, great views from the deck and satellite TV (in German only). The shack features a TS-570D and an IC-706. The antennas include a tribander and wires (the tribander is not designed for high power). A computer with Web access is also provided.

CE0Z

Eliazar, CE0ZIS, has a home on Juan Fernandez and offers a room and radio equipment for rent. There is a TS-440, a 3-element beam and inverted Vs for 40 and 80 meters. The CE0ZY and 3G0Z DXpeditions operated from this location. There is also a ham-friendly location on the island at the Hostel "Petit-Breuilh." A

single room and three meals a day is provided, and the shack consists of a TS-140 and a multi-band dipole.

HI

Erwin, DL4NCF, offers rental of his bungalow that's located in a quiet residential neighborhood on the north shore of the Dominican Republic, about 300 meters from the ocean. The house has a full kitchen and can accommodate up to six people. The antennas include a 7-element log periodic for 10-30 meters that's mounted on a 50-foot tower, a rotating dipole for 40-meters and a window for the other bands. The shack also features a back up solar power supply capable of running a transceiver. Only antennas are provided, you must bring your own equipment.

4U1VIC

Jun, JH4RHF, is now in Vienna and is the contact person for securing permission to operate contests from the 4U1VIC Club Station (see "Being Rare from the Center of Europe—4U1VIC,"

by Heinrich Langkopf, DL2OBF, NCJ Jul/Aug 2000). While "not a station to win," Jun says the facility is in a tall building and you will have fun with the pileups that are generated by this unique prefix, or as contest multiplier in the WAE and CQWW contests. For security reasons, a member of 4U1VIC must be with you at all times, so operation is dependent on their schedule.

P4

There's a new Rent-a-QTH in the making in Aruba. The antenna installation should be completed by the end of the year. Check the DX Holiday Web site for updates on when this location will be operational.

Additional details and the contact information for the above locations (and many more new ones) can be found on my Web site: www.dxholiday.com. In addition to these locations, there are also several ham-friendly locations that have been recently added.

73, Kenny, K2KW

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Exceptions to the Rule

Over the past year or so, I've covered the statistical nature of propagation predictions (in the July/August 2000 column), propagation prediction accuracy (in the March/April 2001 column) and daily forecasts (in the May/June 2001 column). By now, I'm sure it's become obvious that



K9LA

I'm a big believer in using a model of the ionosphere for propagation predictions and the correlation between the smoothed sunspot number (or smoothed solar flux) for a given month and the monthly median ionospheric parameters for that same month.

Whenever I have the opportunity to give presentations to radio clubs on predicting propagation, I try to get the point across that it's best to use the smoothed sunspot number (SSN) in predictions, and to have an understanding of the statistical nature of predictions. But there always seems to be exceptions to rules, so this time around I'll relate one such personal experience.

In 1986, when I was living in the Dallas/Ft Worth area, I worked VS6DO on 10-meter long path during the CQWW DX SSB Contest. This QSO occurred at 1411Z (8:11 AM local time). On the surface there's nothing very remarkable about this contact, but note when it occurred—in October 1986. A quick check of solar cycle data would reveal that the solar minimum between Cycle 21 and Cycle 22 occurred in September of 1986. That would seem to indicate that the SSN would have been pretty darn low in October of that year. Indeed it was—13!

Plugging an SSN of 13 into a propagation prediction program set up for K9LA/5 to VS6 (Hong Kong, now VR2) on the long path for the date in question results in the predicted hourly MUFs (*maximum usable frequencies*) that appear in **Table 1**.

This data indicates that 10 meters shouldn't have been open—not by a long shot. But these are monthly median values, so let's apply the general rule of thumb—that we developed in the July/August 2000 column—for the “good” days. Applying what we've learned, the MUF should be 25% or so higher than the median MUF on a couple days of the month. Assuming that these “good” days

Table 1

Propagation software predictions of the maximum usable frequencies for 1300 to 1500Z (7 to 9 AM local time in Dallas/Ft Worth, Texas) in October 1986 using a smoothed sunspot number (SSN) of 13.

Time (Z)	MUF (MHz)
1300	18.2
1330	19.8
1400	21.3
1430	22.6
1500	23.7

Table 2

Propagation software predictions of the maximum usable frequencies for 1300 to 1500Z (7 to 9 AM local time in Dallas/Ft Worth, Texas) in October 1986 using a smoothed sunspot number (SSN) of 50.

Time (Z)	MUF (MHz)
1300	21.7
1330	23.9
1400	25.9
1430	27.6
1500	29.1

occurred during this contest weekend, the MUF could now conceivably be about 26.6 MHz at 1400Z. But that's still too low for my VS6 10-meter contact.

So what was going on? In a nutshell, Cycle 22 was very dynamic as it rose to its peak—even as it was just beginning to come out of solar minimum. What this points to is that there were very likely short periods of “higher than normal” sunspot activity.

Figure 1 shows this. This is a plot of the actual daily sunspot numbers for the period centered around the 1986 CQ

WW DX SSB Contest weekend. Normally for an SSN of 13 we'd expect to see the daily sunspot number vary somewhat above and below 13. But note that the sunspot number for the Saturday and Sunday of the contest weekend was around 60. And more importantly, this was not just a single spike or two up to 60—it was an increase to 75 or so over a three-week period. In other words, it was long enough for the ionosphere to have sufficient time to react.

Plugging in a conservative SSN of 50 into our prediction program now results in the MUFs shown in **Table 2**.

Now if we apply the “25% rule” again, we'll have an MUF of 32.4 MHz at 1400Z on the several “good” days of the month. That's more than enough for 10 meters, and is probably what made this QSO possible.

Now don't get me wrong. I'm still an advocate of using the SSN in propagation predictions, and discourage using daily sunspot numbers or daily solar flux values because the correlation between daily values and what the ionosphere is doing on that day is not very good. (That's why our propagation prediction programs were set up as monthly median models.) But if the sun does something abnormal for a two- to three-week period, then it may be advantageous to use an eyeball average of the data instead of the official SSN (or an extrapolation thereof). You may just catch an opening that you'd otherwise miss.

So in five years or so when we're approaching solar minimum and things are looking bleak on the higher bands during a contest, keep an eye out for what the sun is doing. It just may mean catching a new multiplier or two.

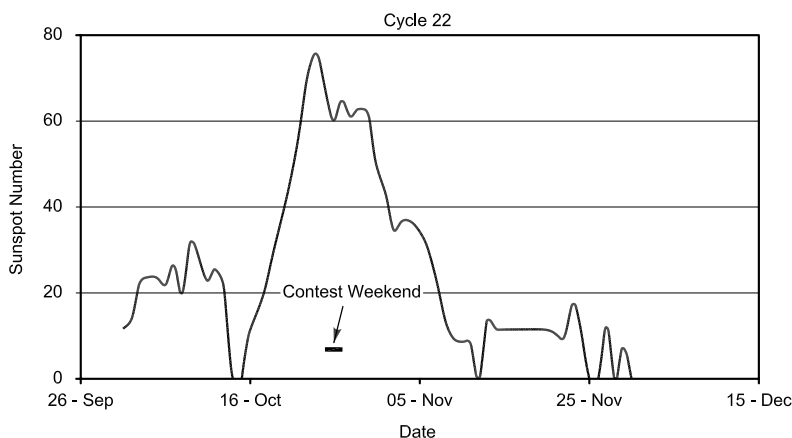


Figure 1—The actual daily sunspot numbers that were recorded around the time of the 1986 CQWW SSB Contest.

Station Layout—Part 2

In the [last installment](#) of CTT&T, we looked at some of the theory behind efficient station layout. This time around we'll look at a few examples of the ways contesters are putting these theories into practice. Keep reading, you might find a few ideas to improve the way your station is configured.



W9XT

General Layout

For single radio shacks, the position of the radio, keyboard and CW paddle will vary depending on if you are right or left-handed and other personal preferences. It will also reflect your operating style—easy access to the tuning knob will be somewhat less important if you primarily CQ, for example.

Many contesters lay out their station in a straight line from left to right. This is the simplest arrangement, and is often dictated by the shape of the operating desk or table. Others construct L- or U-shaped consoles. This minimizes the reach to any one piece of equipment. K3PP likens his station to a cockpit, as the equipment is wrapped around a central operator's position.

Shelves to stack equipment are standard in most shacks. Some place the radios right on the table, but several readers mentioned that they have their radios raised an inch or two. This allows them to place low profile equipment and switches underneath. It also provides storage for the CW paddle during phone contests and even allows for moving the keyboard out of the way when it is not in use. Be careful not to raise the radio too much though, or you will have to raise your hand up off the tabletop to tune around. This can add to strain and fatigue in your arm.

K4TMC has a little twist on the construction of his shelves. Henry uses wooden dowels as the vertical supports. This leaves lots of open space, facilitating airflow around the equipment. Henry's operating desk also has pull-out writing boards located on each side. These are used to hold note pads and other contest aids.

The basic rule to keep things close that need frequent contact has been mentioned a number of times in this

series. The problem, of course, is that *everything* can't be close. The ultimate solution, mentioned by K9AY and K3PP, is automation. Let the computer take care of most of the switching for you.

SO2R Layout

In the typical single-operator 2-radio setup, the transceivers are positioned side by side. Amplifiers and accessories are on the same side as their associated radio. If the master switch box allows separation of the audio, the left headset earphone gets audio from the left radio and the right ear gets audio from the right radio. The idea is physical and mental separation into left and right. SO2R switch box controllers, antenna switches and other equipment that is common to both radios are placed in the center.

G4BUO color codes his equipment. Everything to the right is tagged with red and everything to the left, yellow. Dave uses little stick-on labels for this. Even though the gear is still left and right oriented, the color markings are a mental aid that is particularly helpful 40 hours or so into the contest.

According to AA4NU, the best way to configure an SO2R station is for the stations to be mirror images of each other. The equipment is identical on both sides. Billy has his station set up in a 90-degree format so that both sides are in easy reach for a single op. The radios can still easily be operated separately for "fun" multi-op efforts.

A perfect mirror image configuration may not be practical for many SO2R station owners. For most, the second radio is the old primary radio that was used before upgrading, and it is unlikely that it's the same model as its replacement. This can lead to a certain amount of confusion, as the controls on each of the rigs are in different locations.

While most SO2R station owners position the radios side by side, a few operators—such as W4PA—stack the radios one above the other. In the side-by-side configuration, you would normally tune the right radio with your right hand and tune the left radio with your left hand. Scott likes the stacked approach, as he can tune either radio with his left hand. This frees up his right hand for one-handed typing, sending CW with the paddle and performing other operations that require more dexterity.

Antenna Control

Aiming and switching antennas can

be messy and awkward to those contesters who are fortunate enough to have a large number of them. K4XS certainly experiences that enviable problem—he has 18 rotator control boxes. (He says they have been multiplying like Tribbles in the original Star Trek series.) He is right-handed, but operating rotator controls requires little dexterity, so his rotator control boxes are located to his left.

Several readers mentioned that it is very important to keep the antenna controls close at hand. WA3FET reports that at the K3CR contest station, there are small buttons, about the size of calculator buttons, installed next to the computer keyboard. This allows operators to conveniently control the 10, 15 and 20-meter stacks.

N4ZR situates his WX0B StackMatch, rotator controls and antenna switches in a way that emulates the physical stack outside. This serves as a mental reminder of their configuration.

I use remote coax switches located outside of the shack to minimize the number of coax cables running inside. They are mounted on a board on a wall and consist of a StackMatch and a number of homebrew switches. A switch box in the shack controls them. It is an old design using a number of rotary switches and in some cases requires working two or more switches when changing bands. Its main advantage is that it is relatively easy to change as my antenna system evolves. One of these days that arrangement will have to be upgraded.

Human Factors

In your effort to find the ultimate station layout, don't forget to take into account the human factors. The most efficient equipment layout won't do you much good if it causes fatigue or other problems.

N0KE has developed a chronic problem with carpal tunnel syndrome that resulted from having his computer keyboard at the wrong height and too close to the edge of the table. On advice from his doctor, Phil now uses wrist guards when spending long periods of time (such as contests) at the keyboard. Keyboard wrist pads are a good investment in any case. A rolled up towel with a couple of rubber bands around it will work as a substitute if you forget to bring one along on your contest DXpedition.

Good lighting is important. K3PP has

an overhead light just over his head. He can move it around as necessary to avoid glare or shadows.

There is little reason to leave the operating position at K3CR. There is a small refrigerator within easy reach for food and drink. It also serves double duty as the stand for one of the amplifiers. There's also a camping toilet located right behind the operating chair. (Fortunately it is air tight when closed!) An air conditioner with a remote control for adjusting the room temperature was recently installed.

Wow! We've run out of space, and we still have a lot more material to cover! We will continue in [Part 3](#). Next time we'll cover controlling the rat's nest of cables and consider some additional miscellaneous layout tips. It's still not too late to send in your ideas on station layout!

Thanks to AA4NU, GW4BLE, G3BUO, KH6SQ, KJ9C, K3PP, K4TMC, K4XS, K4WI, K8JP, K9AY, K9SD, K9UQN, N4ZR, N0KE, PY2NY, WA3FET, WA3SES, W3DQ, W4PA, W9LYA and W9YS for their comments on this topic.

Topic for November - December 2001 (deadline September 4th)

Station Layout—Part 3

We will finish up this series with tips for handling the cable rat's nest and share some additional suggestions on station layout. If you missed contributing to the first two parts of this series, you still have one more chance!

Send in your ideas on these subjects or suggestions for future topics. You can use the following routes: Mail—3310 Bonnie Lane, Slinger, WI 53086. Internet—w9xt@qth.com. Please be sure to get them to me by the deadline. ■

Contest Calendar

Compiled by Bruce Horn, WA7BNM
bhorn@hornucopia.com

Here's the list of major contests to help you plan your contesting activity through December 2001. The Web version of this calendar is updated more frequently and lists contests for the next 12 months. It can be found at www.hornucopia.com/contestcal/.

If you like state QSO parties, October is the month that has two of the most popular: the California QSO Party on October 6 and 7, followed by the Pennsylvania QSO Party one week later. Participation in these is a great way to warm up for the Fall-Winter contest season.

As usual, please notify me of any corrections or additions to this calendar. I can be contacted at my callbook address or via e-mail at bhorn@hornucopia.com. Good luck and have fun!

September 2001

All Asian DX Contest, SSB 0000Z, Sep 1 to 2400Z, Sep 2
CCCC Contest (23 Hz RTTY) 0000Z to 2359Z, Sep 1
IARU Region 1 Field Day, SSB 1300Z, Sep 1 to 1300Z, Sep 2
MI QRP Labor Day CW Sprint 2300Z, Sep 3 to 0300Z, Sep 4
WAE DX Contest, SSB 0000Z, Sep 8 to 2359Z, Sep 9
SLP Competition (SWL) 0000Z, Sep 8 to 2400Z, Sep 9
ARRL September VHF QSO Party 1800Z, Sep 8 to 0300Z, Sep 10
North American Sprint, CW 0000Z to 0400Z, Sep 9
ARCI End of Summer PSK31 Sprint 2000Z to 2400Z, Sep 9
YLRL Howdy Days 1400Z, Sep 14 to 0200Z, Sep 16
AGB NEMIGA Contest 2100Z to 2300Z, Sep 14
Air Force Anniversary QSO Party 0001Z, Sep 15 to 2359Z, Sep 16
ARRL 10 GHz Cumulative Contest 0800 local to 2000 local, Sep 15 and 0800 local to 2000 local, Sep 16
Scandinavian Activity Contest, CW 1200Z, Sep 15 to 1200Z, Sep 16
Washington State Salmon Run 1600Z, Sep 15 to 0700Z, Sep 16 and 1600Z to 2400Z, Sep 16
North American Sprint, SSB 0000Z to 0400Z, Sep 16
Tennessee QSO Party 1800Z, Sep 16 to 0100Z, Sep 17
SLP Competition (SWL) 0000Z, Sep 22 to 2400Z, Sep 23
Scandinavian Activity Contest, SSB 1200Z, Sep 22 to 1200Z, Sep 23
Panama Anniversary Contest 1200Z to 2359Z, Sep 23
CQ/RJ Worldwide DX Contest, RTTY 0000Z, Sep 29 to 2400Z, Sep 30
ARCI Fall QSO Party 1200Z, Sep 29 to 2400Z, Sep 30
Texas QSO Party 1400Z, Sep 29 to 0200Z, Sep 30 and 1400Z to 2000Z, Sep 30
Louisiana QSO Party 1400Z, Sep 29 to 0200Z, Sep 30 and 1400Z to 2000Z, Sep 30
Anatolian DX Contest 1600Z, Sep 29 to 2400Z, Sep 30

October 2001

TARA PSK31 Rumble 0000Z to 2400Z, Oct 6
Oceania DX Contest, Phone 0800Z, Oct 6 to 0800Z, Oct 7
EU Autumn Sprint, SSB 1500Z to 1859Z, Oct 6
California QSO Party 1600Z, Oct 6 to 2200Z, Oct 7
QCWA QSO Party 1900Z, Oct 6 to 1900Z, Oct 7
Iberoamericano Contest 2000Z, Oct 6 to 2000Z, Oct 7
RSGB 21/28 MHz Contest, SSB 0700Z to 1900Z, Oct 7
10-10 Day Sprint 0001Z to 2400Z, Oct 10
YLRL Anniversary Party, CW 1400Z, Oct 10 to 0200Z, Oct 12
ARRL International EME Competition 0000Z, Oct 13 to 2359Z, Oct 14
Oceania DX Contest, CW 0800Z, Oct 13 to 0800Z, Oct 14
EU Autumn Sprint, CW 1500Z to 1859Z, Oct 13
Pennsylvania QSO Party 1600Z, Oct 13 to 0500Z, Oct 14 and 1300Z to 2200Z, Oct 14
FISTS Fall Sprint 1700Z to 2100Z, Oct 13

North American Sprint, RTTY 0000Z to 0400Z, Oct 14
JARTS WW RTTY Contest 0000Z, Oct 20 to 2400Z, Oct 21
Worked All Germany Contest 1500Z, Oct 20 to 1459Z, Oct 21
Asia-Pacific Sprint, CW 0000Z to 0200Z, Oct 21
RSGB 21/28 MHz Contest, CW 0700Z to 1900Z, Oct 21
Illinois QSO Party 1800Z, Oct 21 to 0200Z, Oct 22
YLRL Anniversary Party, SSB 1400Z, Oct 24 to 0200Z, Oct 26
CQ Worldwide DX Contest, SSB 0000Z, Oct 27 to 2400Z, Oct 28
SLP Competition (SWL) 0000Z, Oct 27 to 2400Z, Oct 28
10-10 Intl Fall Contest, CW 0001Z, Oct 27 to 2400Z, Oct 28

November 2001

IPA Contest, CW 0600Z to 1000Z, Nov 3 and 1400Z to 1800Z, Nov 3
Ukrainian DX Contest 1200Z, Nov 3 to 1200Z, Nov 4
ARRL Sweepstakes Contest, CW 2100Z, Nov 3 to 0300Z, Nov 5
ARCI Running of the QRP Bulls 2100Z, Nov 3 to 0300Z, Nov 5
IPA Contest, SSB 0600Z to 1000Z, Nov 4 and 1400Z to 1800Z, Nov 4
High Speed Club CW Contest 0900Z to 1100Z, Nov 4 and 1500Z to 1700Z, Nov 4
Japan Intl DX Contest, Phone 2300Z, Nov 9 to 2300Z, Nov 11
Anatolian ATA PSK31 Contest 0000Z to 2400Z, Nov 10
WAE DX Contest, RTTY 0000Z, Nov 10 to 2359Z, Nov 11
ARRL International EME Competition 0000Z, Nov 10 to 2359Z, Nov 11
OK/OM DX Contest, CW 1200Z, Nov 10 to 1200Z, Nov 11
LZ DX Contest, CW 1200Z, Nov 17 to 1200Z, Nov 18
IARU Region 1 160m Contest, CW 1400Z, Nov 17 to 0800Z, Nov 18
Carnavales de Tenerife Contest 1600Z, Nov 17 to 1600Z, Nov 18
LI/NJ-QRP Doghouse Operation Sprint 1700Z to 2100Z, Nov 17
ARRL Sweepstakes Contest, SSB 2100Z, Nov 17 to 0300Z, Nov 19
RSGB 1.8 MHz Contest, CW 2100Z, Nov 17 to 0100Z, Nov 18
CQ Worldwide DX Contest, CW 0000Z, Nov 24 to 2400Z, Nov 25

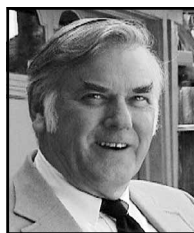
December 2001

TARA RTTY Sprint 1800Z, Dec 1 to 0200Z, Dec 2
QRP ARCI Holiday Spirits Sprint 2000Z to 2400Z, Dec 2
ARRL 160-Meter Contest 2200Z, Dec 7 to 1600Z, Dec 9
ARRL 10-Meter Contest 0000Z, Dec 15 to 2400Z, Dec 16
OK DX RTTY Contest 0000Z to 2400Z, Dec 15
Croatian CW Contest 1400Z, Dec 15 to 1400Z, Dec 16
AGB Party Contest 2100Z to 2300Z, Dec 21
DARC Christmas Contest 0830Z to 1059Z, Dec 26
RAC Winter Contest 0000Z to 2400Z, Dec 29
Stew Perry Topband Challenge 1500Z, Dec 29 to 1500Z, Dec 30

The Other Coast

For those who have never operated a contest from the Atlantic seaboard of the US, it is hard to comprehend the dramatic differences that exist. Among those who have, few will deny that it is indeed a unique contest environment.

Perhaps that is why the focus of our interest in "International Contests" is more often than not directed towards Europe. It is to the east that we find a



W5ASP

whole host of premier DX contests—nearly one for each European country. However, as with most things, there is another side to the story. Some have referred to it as the "other" coast. And if you do "go west" you'll find another entirely different group of challenging international contests.

Both the All Asian and JIDX contests have long been favorites among the more serious contesters. Between the two there are actually six separate events, usually well attended. Unfortunately, the list of such trans-Pacific contests is not a long one. Other than the Seanet, Keyman Club, Asia-Pacific Sprints and the VK/ZL there just doesn't seem to be much happening out that way. The immense distances involved certainly play a role in this. Yet there do appear to be changes in the wind that are worth watching.

For instance, after a mere 66 years of activity the former VK/ZL/Oceania DX Contest is now the Oceania DX Contest. This step was taken to encourage more of the rarer Pacific DX

2000 JIDX Phone Contest

	Class	QSOs	Points	Mults	Score
US (Zone 3)					
KA6SAR	AB	1067	1540	158	243320
W7OM	AB	580	770	90	69300
K0JJ	AB	337	541	88	47608
N7ZT	AB	371	467	89	41563
WB6NFO	AB	171	252	81	20412
N6WS	ABL	298	477	85	40545
KI6PG	ABL	112	170	61	10370
N7EMC	ABL	84	137	53	7261
K6ACZ	ABL	60	94	39	3666
KD7JJI	ABL	15	24	13	312
KC7WUE	ABL	8	15	6	90
K6HNZ	28	584	1168	48	56064
KA6BIM	28	461	922	47	43334
KA6PUW	28L	440	870	47	40890
W7JR1NKN	28L	262	524	42	22008
K7ZO	28L	257	514	41	21074
K6EY	28L	80	160	32	5120
N7QMT	28L	11	22	9	198
W6AFA	21	804	804	47	37788
KD6IH	21	709	709	48	34032
W6/7M1STT	21L	326	324	46	14904
AK6R	21L	262	257	43	11051
WA7QQI	14L	21	21	15	315

US (Zone 4)

AB0MV	28	309	610	46	28060
N7DR	28	316	618	45	27810
K5NZ	28	182	364	40	14560

US (Zone 5)

AD8J	AB	26	39	18	702
4U1WB	28	7	14	7	98
(AJ3M)					
WB0IWG	28L	9	18	8	144
W1PJ	21L	1	1	1	1
(JH4PHW)					

Alaska

KL7FAP	AB	329	469	105	49245
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Canada

VE7TLL	AB	359	560	89	49840
VE7XO	AB	130	215	66	14190
VE6JY	AB	35	62	25	1550
VE2JCW	AB	33	33	21	693
VE7XB	ABL	186	294	76	22344
VA6RA	ABL	39	62	33	2046
VA6MA	ABL	39	66	26	1716
VA3IX	ABL	8	11	7	77
VE3ZT	28L	1	2	1	2

2000 OK-OM DX Contest

Place	Call	Score	QSOs	Mults
All Band				
10	N4AF	106191	207	171
12	W3BYX	76563	181	141
16	W4AU	69459	169	137
17	W2CVW	63042	158	133
18	K2SX	58212	154	126
19	N6ZZ	51684	146	118
20	PT2/KC2BAA	51039	159	107
21	W3DAD	38520	120	107
22	VE1KB	37875	125	101
32	K0CIE	8673	59	49
33	AA3VA	8232	56	49
34	N2CQ	7038	51	46
35	N4MM	6498	57	40
36	K2LP	5670	105	18
38	W2VI	4560	40	38
40	KP3YL	2523	29	29
45	N7OG	741	19	13

Single Band

10 Meters				
6	W4OEL	16296	97	56
9	PT2/KC2BAA	14535	85	57
10	VA3TTN	9315	69	45
11	W1END	8844	67	44
17	N4MM	2418	31	26
21	VE3ZT	480	16	10
22	W4STX	243	9	9
23	K9NW	75	5	5

15 Meters

7	VA3TTN	5358	47	
9	VA7TRS (VE7NI)	867	17	

20 Meters

11	VA3TTN	3150	35	
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40 Meters

7	K8ND	8418	61	
8	VA3TTN	6027	49	
9	N4MM	588	14	

80 Meters

4	N4MM	48	4	
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stations to become more actively involved, and this does seem to be occurring. Also the contest used to be managed alternately by the VKs and ZLs each year... leading to some inconsistencies. Now there is a single joint VK/ZL group at the helm.

To enhance the exposure and reporting for this event there is a very attractive Web site now available. Take a good look at the superb write-up for the 2000 Oceania Contest at www.nzart.org.nz/nzart/update/contests/2000_Oceania_Home_page.htm

Yeah, it's a fistful of keystrokes, but bookmark it... it will come in handy.

There were ten CW and ten phone logs received from North America for the 2000 event. This leaves lots of room for anyone interested in getting seriously involved. You'll have your chance in the 2001 Oceania Contest October 6th and 7th for phone, and October 13th and 14th for CW. Check out the full contest rules at www.nzart.org.nz/nzart/. (Note that logs may be submitted via e-mail.)

2001 UBA Contest

Call	Class	QSO	Mults	Pts	Score
CW					
VA3UA	A10	73	15	258	3870
N4MM	A10	37	12	130	1560
W1END	A10	51	11	137	1507
VA3TTN	A15	135	22	413	9086
VE7NI	A15	19	1	80	80
VA3TTT	A40	48	13	129	1677
VE3KZ	B	664	94	1868	175592
K3ZO	B	425	68	1310	89080
K3WW	B	382	70	951	66570
K4BAI	B	152	34	362	12308
VE2AWR	B	69	20	207	4140
K0CIE	B	38	20	149	2980
K9BG/4	B	36	13	162	2106
N0IBT	B	11	15	96	1440
K4IU	B	25	10	85	850
VA3UZ	D	150	38	437	16606

Phone

VE3KZ	A10	192	28	714	19992
WB0IWG	A10	46	17	230	3910
N4MM	A10	31	15	162	2430
VP5AZ	B	266	50	812	40600
W2UDT	B	30	24	300	7200
VA2IC	B	39	30	215	6450
K4IU	B	50	26	196	5096
VE2AWR	B	35	22	136	2992
K7ZO	B	38	17	136	2312

2000 Oceania DX Contest

Call	Category	Score
Phone		
K3ZO	SOAB	5134
KG9N	SOAB	588
WB4SQ	SOAB	77
W3NC	SOSB/10	663
N7DR	SOSB/10	462
W7/JR1NKN	SOSB/10	216
N4MM	SOSB/10	144
VA3IX	SOAB	48
W8KNO	SOSB/10	24
WB0IWG	SOSB/10	18

CW

N6RO	SOAB	24420
K3ZO	SOAB	6549
N6ZZ	SOAB	4896
WO6M	SOAB	2208
N7DR	SOAB	1273
N4MM	SOAB	84
K4IU	SOAB	40
W7/JR1NKN	SOSB/10	231
K0COP	SOSB/40	10

2000 Canada Day Contest

Call	Band	Score	QSOs	Mults
SOSB				
N4MM	21	96	58	13
WA0OTV	21	60	4	3
N9DJ	14	36960	205	20
KG9PQ	14	1650	13	11
AF4RK	14	1600	27	10
W7LQU	14	456	14	4

SOAB

N6RO	638072	838	94
K1QM	32670	90	33
K4UK	32538	109	29
K0COP	21984	21	6
N0XW	7480	42	17
KG4BIG	3660	57	10
AA0XJ	2898	30	9
N8WEL	2546	49	49
N0LZ	1040	11	8

Multi

W7WDX	104832	244	52
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Score Rumors

(Claimed Scores for International Contest participation posted to the 3830 Reflector. Compiled by Mike Dinkelman, N7WA.)

2001 All Asian DX CW Contest

Call	Power	QSOs	Mults	Score
M/S				
W7GG	HP	1008	359	391669
K6ZM	HP	1050	336	352464

SOAB

WN6K	LP	673	247	169936
N6ZZ	HP	472	215	102340
VE7UF	HP	354	177	63189
K9DX	HP	370	171	61731
K5NZ	HP	299	140	43120
K0OU	LP	106	70	7280
VE3MQW	LP	90	62	5518
W4SAA	HP	67	50	3350
VE3BUC	LP	26	21	1638

SOSB/10

W4ZV	HP	124	63	15624
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SOSB/15

N4BP	HP	332	116	38512
N1RR	HP	197	97	18527
K6III	HP	144	72	10368
W7KN	HP	100	56	5600

SOSB/80

N6RO	HP	12	8	192
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Results, January 2001

NAQP CW Contest

Bob Selbrede, K6ZZ
k6zz@ccis.com

Sorry for the delay in reporting these results folks. This turned out to be the biggest NAQP CW contest to date. Participation was at an all time high, resulting in a load of additional logs to be checked.

The top finishers were all frequent "Top Tenners" with Tree, N6TR, edging out the previous winner, Doug, N6RT, for first place. Tree broke the all time record for most QSOs, but narrowly missed setting a new all time record high score for this contest. As a matter of fact, the top four—N6TR, N6RT, N9RV and W4PA—will make the list of the top ten highest single op scores ever for this contest!

The Multi-Two category was very close as well, with the W5NN crew edging out the K0RF crew for first place. Not too far behind—in third place—was the K5KA crew. Although the all time record wasn't broken, the W5NN and K0RF efforts place them number two and three on the list of highest multi-two scores as well.

It seems that this contest was all about breaking records. As one might expect, records were set in the team competition as well. The Southern California Contest Club (SCCC) won top honors in the team competition again, edging out the Tennessee Contest Group (TCG) and the Northern California Contest Club (NCCC). The SCCC score of 1.26 megapoints knocked the NCCC out of the top spot for the all time high team score.

A whopping 47 teams were pre-registered for this contest, which is simply amazing. It gets better all the time. Promoting the NAQP and the NAQP team competition in particular is the key behind the high level of participation and enjoyment to be found in the NAQP contest. More participants equals more fun and higher scores for everyone! Kudos go to the Society of Midwest Contesters, the Florida Contest Group and the Tennessee Contest Group for their efforts to promote activity. Keep up the good work.

It was nice to see a "theme" in the team competition again. The last presidential election and the attention given to the voters in the state of Florida made for some interesting team names. A little humor takes the edge off the competition a bit, and keeps things interesting and fun. What will the theme of the next NAQP be?

Soapbox

Suddenly, everyone in Florida is named "Chad"?—AA2AD. This was my first NAQP. Was suffering with the flu and flu-like

symptoms. Next year a full effort.—K0UK. I crossed my fingers when N6OL sent me "606" as the name—and sent it again when I asked for a repeat. Fortunately my logging program didn't balk at logging the QSO! I enjoyed the contest in the limited time

available.—K1HT. A fun couple of hours. I used the NAQP to try out my IC-706MKIIG in the contest environment. Looks like this rig will do well in expedition service!—K1IR. NAQP is my favorite "bang for the buck" for contest fun. Two 40-meter wire delta loops

Team Scores

1. Southern California Contest Club #1

W6EEN	289618
K6LL	256332
N6MJ	256275
N6ZZ	232132
K6LA	225890
Total	1260247

2. Tennessee Contest Group #1

W4PA	269652
N4ZZ	219618
K0EJ	208465
W9WI	192907
K1KY	187110
Total	1077752

3. Northern California Contest Club #1

N6RO	253208
K7BV	206180
K6AW	179577
K7NV	165760
K6CTA	157170
Total	961895

4. Mad River Radio Club #1 (K8ND, N8VW, K9TM, N9RV, VE3EJ)	926152
5. Corner Pocket Contesters - North (N0AX, K7RI, K7ED, N7WA, N7LOX)	863676
6. Society of Midwest Contesters #1 (K9XD, WE9V, K9MA, N9FH, WT9U)	819930
7. Potomac Valley Radio Club - NC #2 (K3MM, K2YWE, K7SV, WJ9B, K4MA)	777935
8. Tennessee Contest Group #2 (K1VUT, WO4O, K4LTA, N4IR, W5TM)	767201
9. Florida Contest Group #1 (N4BP, N2NL, K5KG, WD4AHZ, K4LQ)	723573
(Al and the Well Hung Chads)	
10. Minnesota Wireless Association #1 (NA0N, K0OB, K0AD, N0XB, KT0R)	717612
11. Corner Pocket Contesters - South (K7RAT, N7OU, K17Y, K7AW)	717552
12. Frankford Radio Club - Domestic (N2NC, AA3B, K3WW, K3MD)	652320
13. Northern California Contest Club #2 (W6EU, AB6WM, N6ZFO, VY1JA, ZF2NT) ..	636368
14. Potomac Valley Radio Club - NC #1 (N4AF, N2NFG, N4CW, K4QPL)	615197
15. South East Contest Club #1 (K4BAI, K4OGG, K4NO, AA4LR)	475349
16. Southern California Contest Club #2 (K6AM, K6RO, W6TK, XE2MX)	474385
17. Mad River Radio Club #2 (AD8J, K8DX, NU8Z, K8JM, K5IID)	473605
18. Society of Midwest Contesters #2 (W9SMC, N0AV, K0OU, W0UY)	463871
19. Texas DX Society (K5WA, KG5U, N7FO)	459980
20. Team Mississippi (W5XX, WQ5L, W5UE, AC5SU, KB5IXI)	436957
21. Florida Contest Group #4 (N4AO, W4ZW, K4FB, W4/YV5DTA, W1YL)	436108
(Catherine and the Lost Chads)	
22. Tennessee Contest Group #3 (K3WU, NA4K, KG4BIG, K4BEV)	428400
23. Mad River Radio Club #4 (N8EA, W8MJ, K8AAX, W8RU)	372929
24. Weekend Warriors (N3FR, WA3HAE, WA3SES, KB3A)	334908
25. Northern California Contest Club #4 (N6NF, W6OAT, W4NJK)	326778
26. Society of Midwest Contesters #3 (N9UA, W9IU, W9RE, KX9DX, KG9X)	327079
27. Ozark Contest Club #1 (KM5G, W5ON, KJ5WX, W5YM)	318026
28. Society of Midwest Contesters #6 (WA1UJU, K9WX, K9ZO, KE9I)	248933
29. Mad River Radio Club #5 (W8GN, WX3M, K9NW, KU8E)	202220
30. Florida Contest Group #2 (K4OJ, W4SAA, N4RP)	197408
(Dubya and the Dimpled Chads)	
31. Society of Midwest Contesters #4 (K9MOT, N9QQK, WA0IYY, AE9B)	188848
32. Society of Midwest Contesters #8 (N9CO, K9QVB, K9MI, KB9CRY)	172092
33. South East Contest Club #2 (W4NTI, K4WI, KA9EKJ, K9AY)	170030
34. Tennessee Contest Group #5 (W4NZ, NY4T, W4RK)	165912
35. Northern California Contest Club #3 (K6III, WA6O)	153161
36. Florida Contest Group #5 (K9BG, W3TMZ, W4SO, W4IR)	152488
(Dick and the Asymmetrical Chads)	
37. Florida Contest Group #3 (KB4N, KN4Y, W0EBA)	135273
(Jeb and the Swinging Chads)	
38. Tennessee Contest Group #4 (N4KN, W4TYU, KE4OAR, N4VI)	134436
39. Mad River Radio Club #3 (K8MR, ND8DX, K8NZ)	127234
40. Society of Midwest Contesters #11 (W9YS, N4TZ, W9WUU, W9ISC)	93430
41. Society of Midwest Contesters #10 (W9BS, N9IJ, N9SE)	87841
42. Society of Midwest Contesters #7 (K9KM, KC9FC, K9JLS, N9KO, N0AAA)	37784
43. Tennessee Contest Group #6 (NY4N, K4RO, N5NW)	35178
44. South East Contest Club #3 (NJ8J, NE4S)	30711
45. Ozark Contest Club #2 (W5RZ, AB5SE)	24252
46. Society of Midwest Contesters #9 (W9SZ, KI0MB)	17702
47. Society of Midwest Contesters #5 (N9XX, K9IG)	12547

Single Op Top Ten Breakdowns

Call	Score	QSOs	Mults	160	80	40	20	15	10	Team
K7RAT (N6TR)	304777	1133	269	27/18	105/42	173/51	278/51	283/54	267/53	CPC - S
W6EEN (N6RT)	289618	1057	274	52/27	131/46	264/51	208/50	225/51	177/49	SCCC #1
N9RV	271959	1011	269	138/39	222/47	230/47	207/51	129/48	85/37	MRRC #1
W4PA	269652	977	276	89/33	212/45	228/50	204/54	128/50	116/44	TCG #1
N2NC	258640	976	265	66/30	162/44	254/49	246/51	153/48	95/43	FRC Dom
K6LL	256332	1042	246	18/13	101/38	193/48	255/50	276/49	199/48	SCCC #1
N6MJ	256275	1005	255	13/11	67/34	293/54	268/53	218/53	146/50	SCCC #1
N6RO	253208	1021	248	53/26	76/31	219/47	215/52	250/47	208/45	NCCC #1
N5RZ	249774	939	266	102/30	94/40	210/50	218/51	194/50	121/45	
K3MM	243983	907	269	91/34	131/41	209/46	194/48	159/51	123/49	PVRC-NC #2

Multi-Two Breakdowns

W5NN	447596	1502	298	85/31	240/49	384/55	328/56	289/54	176/53
K0RF	442827	1491	297	142/46	270/50	331/53	284/52	310/50	154/46
K5KA	367164	1316	279	144/42	277/48	247/48	371/52	164/46	113/43

and one radio used on all bands.—*K2YWE*. Sure hope all the “Chads” in Florida get counted, or it will definitely affect the results of the contest!—*K4QPL*. Maybe it was me, but the contest seemed slow. I only managed eight hours and most of those were S&P’ing. Great fun anyhow. Thanks everyone—*K4WI*. Great conditions from Texas. Personal best.—*K5WA*. Wow, 600 QSOs in six hours and ten minutes of operation. Fun to have all six bands in great shape.—*K5ZD*. Apparently the only names for hams in Florida are “Chad,” “Jeb” and “Dubya.” Condition were poor. I barely heard W1AW during the 2001 PSK31/MFSK16 tests. 20, 15 and 10 died with the sunset. Still a fun contest, however. I really like the short duration.—*K6DGW*. Personal best by far but not competitive enough to challenge for the top ten box.—*K6LA*. Winter NAQP CW is the best contest of the year!—*K6LL*. Contests don’t get much more fun than the NAQP!—*K7ED*. I spent 9.5 hours running QRP. Nice turnout and plenty of stations to work.—*K7RE*. My best personal score. Great conditions and a new 80-meter antenna both helped.—*K7SV*. Nice to again hear all the CW talent that NAQP brings out. I was happy to give out a few WV mults in this great contest.—*K8KFJ*. The first serious NAQP for me, and I learned a lot of what *not* to do from Ohio! I should have used up my off time during the daylight, and saved the prime nighttime hours for operating! 80 and 160 were great! SO1R here.—*K8ND*. First ever CW contest for me! Boy do I need to practice my CW!—*K9JLS*. Drake C-line, 100 W, attic dipole, 80-meter dipole at 25 feet.—*K9KM*. It’s always a pleasure to work so many fine operators!—*K9MA*. I was running a Sierra QRP kit rig at less than 5 W and my antenna was a G5RV at 37 feet. This was my first attempt at the NAQP. I operated S&P. 95% of the stations had no problem

Top 10 Combined Single Operator Scores for the January 2001 NAQPs

In a close battle for the highest combined CW/SSB single op score, Dan, N6MJ, came out on top of the heap this time. Close behind were previous winners Doug, N6RT, and Dave, K6LL. All three are members of the SCCC. Congrats to all of these fine ops.

Operator	CW Points	SSB Points	Total Points
N6MJ	420	500	920
N6RT	475	409	884
K6LL	421	384	805
N5RZ	410	379	789
N4ZZ	360	347	707
K9PG	332	341	673
WA1LNP	325	345	670
KM5G	273	264	537
N8VW	263	273	536
W8MJ	260	255	515

copying my QRP signal. I had a great time! Thanks to all that made the contest possible.—*KA1DDB*. I had fun, but too many family activities interrupted for me to put in a serious contest effort.—*KC7WUE*. I got all twisted up and thought the contest was the next day, so I only made a few contacts in between other commitments. Duhhh!—*KE5C*. The 100 W power limit sure evens the playing field for me.—*KG8GW*. This is my best score ever in this contest. My all-wire antenna farm seems to be working great. I have four delta loops (10, 20, 15/30 and 15/40), a dipole for 80, and a top loaded 44-foot vertical for 160, all switched with a homebrew selector system. I served on ships with less wire in the air! I had a ball!—*KJ5WX*. The broadband wire antenna amazes me. My best effort, in spite of my short attention span. My exchange, “Chad, FL,” got a few comments.—*KN4Y*. Although peak rate wasn’t as high as at some times in the past, average rate was

quite good. Also, a lot of people are getting good at moving up and down the bands pretty quickly.—*NOAX*. My first NAQP... I loved it. Great participation.—*NOXB*. A very abbreviated showing for me. Lots of family events and duties! Best part of this contest is the QSY request. Since I am horrible at code, each request sends chills up my spine and an adrenaline response to my cardiovascular system. 75% of the time I get the frequency right, the rest of the time I am listening in the ether. My apologies to those I failed to meet; to the others, I hope the mult was worth your struggles with me! See you in the summer!—*N1MD*. Wow! The best activity level in an NAQP yet. This is the first time I can remember having to work to find a clear frequency.—*N2NC*. There was lots of activity. I far exceeded my best score ever. I’m learning more and more about using my beam more effectively, but still have a long way to go. Each contest is a new learning experience.—*N3FR*.

Single Operator Scores

Call	QSOs	Mults	Score	Section	Team	Call	QSOs	Mults	Score	Section	Team
WE1USA (WA1LNP)	853	232	197896	NH		AB1BX	343	125	42875	RI	
K1VUT	812	234	190008	MA	TCG #2	K1HT	261	96	25056	MA	
K5ZD	595	216	128520	MA		K1IR	234	103	24102	MA	
NY1S	479	171	81909	ME		W1TW	114	57	6498	MA	
AA1SU	465	156	72540	VT		N1MD	68	48	3264	CT	

Call	QSOs	Mults	Score	Section	Team	Call	QSOs	Mults	Score	Section	Team
N2NC	976	265	258640	NJ	FRC Dom	N4KN	273	111	30303	TN	TCG #4
W2YC	514	192	98688	NJ		W0EBA	242	109	26378	FL	FCG #3
K2ONP	473	166	78518	NY		NJ8J	252	99	24948	GA	SECC #3
KE2I	247	105	25935	NY		K4BAM	217	105	22785	KY	
NA2AA	211	94	19834	NJ		W4TYU	215	105	22575	TN	TCG #4
KA2MGE	179	104	18616	NY		KE4OAR	202	107	21614	TN	TCG #4
W5KI	121	67	8107	NJ		W4SO	188	105	19740	FL	FCG #5
KG2BI	134	59	7906	NY		NY4N	187	95	17765	TN	TCG #6
W2EZ	100	36	3600	NY		K4RO	188	92	17296	TN	TCG #6
						K9AY	176	96	16896	GA	SECC #2
K3MM	907	269	243983	MD	PVRC-NC #2	KW4E	178	91	16198	GA	
AA3B	872	242	211024	PA	FRC Dom	W4IR	173	91	15743	FL	FCG #5
K3CR	674	202	136148	PA		N4RP	131	74	9694	FL	FCG #2
(N13S)						W4AUI	116	74	8584	TN	
N3FR	634	189	119826	PA	WW	W4/YV5DTA	118	66	7788	FL	FCG #4
K3WU	629	175	110075	PA	TCG #3	NE4S	113	51	5763	GA	SECC #3
K3WW	556	193	107308	PA	FRC Dom	W4IDX	87	42	3654	NC	
K2YWE	537	180	96660	MD	PVRC-NC #2	W1CW	102	31	3162	FL	
AD8J	492	181	89052	PA	MRRC #2	KW4JS*	50	36	1800	TN	
WA3HAE	495	169	83655	PA	WW	K0COP	50	30	1500	SC	
K3MD	468	161	75348	PA	FRC Dom	N4MM	40	23	920	VA	
WA3SES	435	153	66555	PA	WW	W4OGG	31	17	527	TN	
K3WWP*	447	146	65262	PA		W1YL	18	13	234	FL	FCG #4
KB3A	424	153	64872	PA	WW	N5NW*	13	9	117	TN	TCG #6
NA3V	311	153	47583	PA							
K3SV	394	118	46492	PA		N5RZ	939	266	249774	TX	
W3BBO*	330	126	41580	PA		N6ZZ	886	262	232132	NM	SCCC #1
N4LF	228	100	22800	MD		K5WA	846	231	195426	TX	TDXS
NY3M	233	94	21902	MD		K5TQ	884	199	175916	NM	
AA3ML	201	107	21507	PA		W5TM	761	224	170464	OK	TCG #2
N3RM	180	83	14940	PA		KM5G	791	210	166110	AR	OCC #1
AA2AD	148	79	11692	PA		W5WMU	692	240	166080	LA	
N8NA	144	77	11088	DE		W5XX	686	224	153664	MS	TM
N3NZ	140	59	8260	PA		N5UL	657	220	144540	NM	
W3BYX	178	43	7654	PA		KZ5D	620	231	143220	LA	
WB4ZHO	120	39	4680	MD		N5PO	610	186	113460	TX	
W3ERU	69	26	1794	MD		WQ5L	588	183	107604	MS	TM
N9GG	20	14	280	DE		KG5U*	566	181	102446	TX	TDXS
AI3Q	18	7	126	PA		W5FO	548	186	101928	TX	
						W5UE	558	181	100998	MS	TM
W4PA	977	276	269652	TN	TCG #1	W5ON	538	182	97916	AR	OCC #1
N4AF	977	244	238388	NC	PVRC-NC #1	(K5LG)					
N4BP	1002	234	234468	FL	FCG #1	N5RG	474	194	91956	TX	
N4ZZ	882	249	219618	TN	TCG #1	N5QQ	493	179	88247	TX	
N2NL	879	243	213597	FL	FCG #1	K0CIE	345	139	47955	OK	
(@K1PT)						KJ5WX	298	150	44700	AR	OCC #1
K0EJ	865	241	208465	TN	TCG #1	AC5SU	294	139	40866	MS	TM
N4AO	844	243	205092	FL	FCG #4	KG5RM	310	127	39370	AR	
(WC4E)						KB5IXI	275	123	33825	MS	TM
K7SV	810	242	196020	VA	PVRC-NC #2	W3DYA	249	120	29880	TX	
W9WI	781	247	192907	TN	TCG #1	WK5K	239	122	29158	TX	
N4GN	770	245	188650	KY		W5RZ	151	92	13892	AR	OCC #2
K1KY	810	231	187110	TN	TCG #1	N5UM	185	61	11285	TX	
K4BAI	739	247	182533	GA	SECC #1	AB5SE	140	74	10360	AR	OCC #2
K4IQJ	736	233	171488	AL		W5YM	155	60	9300	AR	OCC #1
K4OGG	770	217	167090	GA	SECC #1	(AC5RR)					
NA4K	730	223	162790	TN	TCG #3	W5TB*	144	58	8352	TX	
W4ZW	767	194	148798	FL	FCG #4	N5JGK	97	63	6111	MS	
K4OJ	650	217	141050	FL	FCG #2	AC5XK	82	56	4592	TX	
WO4O	650	217	141050	TN	TCG #2	K5OI*	72	43	3096	NM	
K4LTA	711	189	134379	TN	TCG #2	KE5C	65	44	2860	TX	
N2NFG	651	205	133455	NC	PVRC-NC #1	W5NR	76	35	2660	TX	
N4IR	650	202	131300	TN	TCG #2						
N4CW	660	198	130680	NC	PVRC-NC #1	W6EEN	1057	274	289618	CA	SCCC #1
N4YDU	616	208	128128	NC		(N6RT)					
W4WA	579	213	123327	GA		N6MJ	1005	255	256275	CA	SCCC #1
WJ9B	636	190	120840	NC	PVRC-NC #2	N6RO	1021	248	253208	CA	NCCC #1
K4MA	624	193	120432	NC	PVRC-NC #2	K6LA	922	245	225890	CA	SCCC #1
K4QPL	633	178	112674	NC	PVRC-NC #1	KH6ND	870	209	181830	HI	
N4DU	575	194	111550	GA		K6AW	739	243	179577	CA	NCCC #1
W4AU	565	187	105655	VA		(@W6NL)					
K5KG	519	192	99648	FL	FCG #1	W6EU	726	226	164076	CA	NCCC #2
W4NZ	539	180	97020	TN	TCG #5	K6AM	732	223	163236	CA	SCCC #2
K4NO	530	180	95400	AL	SECC #1	N6NF	769	206	158414	CA	NCCC #4
KG4BIG	518	183	94794	KY	TCG #3	W6OAT	794	198	157212	CA	NCCC #4
WD4AHZ	512	180	92160	FL	FCG #1	K6CTA	806	195	157170	CA	NCCC #1
K9BG	490	175	85750	FL	FCG #5	K6RO	647	199	128753	CA	SCCC #2
NW6S	509	167	85003	NC		AB6WM	623	194	120862	CA	NCCC #2
K4LQ	450	186	83700	FL	FCG #1	N6ZFO	604	185	111740	CA	NCCC #2
K4FB	458	162	74196	FL	FCG #4	K6III	449	179	80371	CA	NCCC #3
KB4N	403	160	64480	FL	FCG #3	W4EF	429	173	74217	CA	
K4BEV	397	153	60741	TN	TCG #3	WA6O	502	145	72790	CA	NCCC #3
W4NTI	394	149	58706	AL	SECC #2	W6TK	413	172	71036	CA	SCCC #2
K4WI	327	148	48396	AL	SECC #2	N6EE	402	133	53466	CA	
W4SAA	307	152	46664	FL	FCG #2	WO6M	303	150	45450	CA	
KA9EKJ	336	137	46032	AL	SECC #2	K6TA	332	136	45152	CA	
N4UL	321	142	45582	KY		K6DGW	200	114	22800	CA	
KN4Y	329	135	44415	FL	FCG #3	N6QS	190	118	22347	CA	
K4IU	304	135	41040	KY		W6ISO	178	100	17800	CA	
NY4T	294	130	38220	TN	TCG #5	K6LRN	165	97	16005	CA	
W3TMZ	235	133	31255	FL	FCG #5	K6KT	185	76	14060	CA	
W4RK	284	108	30672	TN	TCG #5	N6TW	147	85	12495	CA	
KC3QU	253	120	30360	AL		W4NJK*	136	82	11152	CA	NCCC #4
AA4LR	257	118	30326	GA	SECC #1	N6OL	155	65	10075	CA	

Call	QSOs	Mults	Score	Section	Team	Call	QSOs	Mults	Score	Section	Team
KQ6NN	129	77	9933	CA		KG9X	245	91	22295	IL	SMC #3
WA6BOB	124	77	9548	CA		KE9I	221	97	21437	IN	SMC #6
K6CSL	87	63	5481	CA		N9IJ	218	96	20928	IL	SMC #10
K6XX*	103	52	5356	CA		WA9Z	191	93	17763	IL	
W6PRI	59	32	1888	CA		W9WUU	186	88	16368	WI	SMC #11
W6RKC	39	39	1521	CA		K9KM	165	65	10725	IL	SMC #7
K6LDX	1	1	1	CA		N9SE	113	77	8701	IN	SMC #10
						N9XX	125	60	7500	WI	SMC #5
K7RAT (N6TR)	1133	269	304777	OR	CPC - S	W9ISC	110	64	7040	WI	SMC #11
K6LL	1042	246	256332	AZ	SCCC #1	KC9FC	98	65	6370	IN	SMC #7
N0AX	944	248	234112	WA	CPC - N	WB9ZEZ	101	60	6060	IN	
K7BV	845	244	206180	NV	NCCC #1	K9IG	103	49	5047	IN	SMC #5
NG7M	829	221	183209	UT		W9SZ	99	38	3762	IL	SMC #9
K7RI	842	214	180188	WA	CPC - N	K9MI	64	40	2560	IN	SMC #8
(NW7DX)						K9JLS	40	31	1240	IL	SMC #7
N7OU	825	210	173250	OR	CPC - S	N9KO	23	19	437	IL	SMC #7
K7NV	740	224	165760	NV	NCCC #1	WB9MII*	8	14	392	IL	
K7ED	793	209	165737	WA	CPC - N	KB9CRY	16	15	240	IL	SMC #8
(WA0RJY)						KG9N	18	11	198	IL	
N7WA	809	201	162609	WA	CPC - N						
N7FO	711	228	162108	AZ	TDXS	N0AV	806	255	205530	IA	SMC #2
(KN5H)						NA0N	749	210	157290	MN	MWA #1
KO7X	692	224	155008	UT		K0OB	731	206	150586	MN	MWA #1
KI7Y	723	199	143877	OR	CPC - S	K0AD	691	212	146492	MN	MWA #1
N7LOX	637	190	121030	WA	CPC - N	K0OU	684	212	145008	MO	SMC #2
K7AW (K5ZM)	488	196	95648	OR	CPC - S	N0XB	700	198	138600	MN	MWA #1
WO7Y	533	176	93808	ID		KTOP	611	204	124644	MN	MWA #1
K7ON	565	166	93790	AZ		K0RI	571	197	112487	CO	
WA7LNU*	444	172	76368	UT		K0GN	597	161	96117	MO	
W7ZR	468	148	69264	AZ		W0UY	454	180	81720	KS	SMC #2
W7TSM	395	149	58855	WY		N4VI	472	127	59944	CO	TCG #4
W7WW	307	165	50655	AZ		N0AJ	347	141	48927	MO	
K7RE	341	140	47740	AZ		WA0IYY	320	122	39040	MO	SMC #4
W7/JR1NKN	242	108	26136	WA		AE9B	281	136	38216	MO	SMC #4
N7RX	207	119	24633	OR		K0CF	294	116	34104	IA	
W7YS	248	45	11160	AZ		W0BR	251	113	28363	KS	
K7ZO	105	71	7455	ID		KE0FT	186	117	21762	IA	
W7EAI	85	52	4420	WA		N0AAA	196	97	19012	IA	SMC #7
KC7WUE	10	10	100	WA		K0UK	177	81	14337	CO	
						KI0MB	164	85	13940	MO	SMC #9
N8EA	750	237	177750	MI	MRRRC #4	KI0E	103	61	6283	ND	
K8ND	721	224	161504	OH	MRRRC #1	KI0F	106	58	6148	MN	
K8DX	717	225	161325	OH	MRRRC #2	AC0W	73	39	2847	MN	
N8VW	728	220	160160	OH	MRRRC #1	WA0OTV	56	25	1400	MO	
W8MJ	742	214	158788	MI	MRRRC #4	KC0CWU	42	30	1260	MO	
WA8WV	640	208	133120	WV		W0ETC	32	18	576	IA	
K9TM	599	199	119201	OH	MRRRC #1	WB0TRA	26	22	572	MN	
N8BJQ	598	199	119002	OH		WB0B	10	8	80	IA	
W8GN	549	183	100467	OH	MRRRC #5						
NU8Z	509	166	84494	MI	MRRRC #2	VE4VV	916	237	217092	MB	
KG8GW	523	156	81588	WV		VE3EJ	796	268	213328	ON	MRRRC #1
K8MR	445	176	78320	OH	MRRRC #3	VE5SF	751	215	161465	SK	
K8JM	431	170	73270	MI	MRRRC #2	VE3KP	578	195	112710	ON	
K5IID	392	167	65464	WV	MRRRC #2	VE2AWR	539	186	100254	QC	
WX3M	415	155	64325	MI	MRRRC #5	VE3ZT	502	198	99396	OB	
KC8FS	340	143	48620	WV		VE7QO	562	152	85424	BC	
K8KFJ	303	114	34542	WV		VE3IAY	493	157	77401	ON	
K8CV	245	136	33320	MI		VA6NO	393	159	62487	AB	
ND8DX	259	121	31339	OH	MRRRC #3	VE1OP	464	131	60784	NS	
K9NW	243	94	22842	OH	MRRRC #5	VY1JA	423	134	56682	YT	NCCC #2
KA1DDB*	219	104	22776	MI		VA3TTT	336	133	44688	ON	
K8AAX	202	99	19998	MI	MRRRC #4	VE4YU	196	115	22540	MB	
K8NZ	185	95	17575	OH	MRRRC #3	VE3WZ	155	76	11780	ON	
W8RU	169	97	16393	MI	MRRRC #4	VA3UZ	80	37	2960	ON	
KU8E	187	78	14586	OH	MRRRC #5						
K8VFR	47	19	893	MI		ZF2NT	817	224	183008	ZF	NCCC #2
KB8PGW	25	16	400	MI		XE2MX (N6KI)	580	192	111360	XE	SCCC #2
						XE1/AA6RX	317	153	48501	XE	
N9RV	1011	269	271959	IN	MRRRC #1						
K9XD (K9PG)	817	248	202616	IL	SMC #1	M0SDX	172	47	8084	G	
WE9V(KB3AFT)	704	246	173184	WI	SMC #1	PY2NY	92	54	4968	PY	
K9MA	726	215	156090	WI	SMC #1	OZ1AA	70	43	3010	OZ	
N9FH	740	206	152440	WI	SMC #1	LY2LA	7	7	49	LY	
N9CO	644	213	137172	IL	SMC #8	RV1CC	6	5	30	UA1	
WT9U	600	226	135600	IN	SMC #1						
WT9Q	615	200	123000	WI							
N9UA	637	190	121030	WI	SMC #3						
W9IU	536	173	92728	IN	SMC #3						
WA1UJU	503	176	88528	WI	SMC #6						
K9MOT (K9PW)	488	179	87352	IL	SMC #4						
N9CK	420	169	70980	WI							
K9WX	436	160	69760	IN	SMC #6						
K9ZO	422	164	69208	IL	SMC #6						
W9BS	378	154	58212	IN	SMC #10						
W9RE	336	154	51744	IN	SMC #3						
K9WJU (W9CG)	312	144	44928	IN							
W9YS	294	149	43806	IL	SMC #11						
WA9IRV	274	122	33428	WI							
KX9DX	272	121	32912	IL	SMC #3						
K9QVB	292	110	32120	IL	SMC #8						
N9NT	271	118	31978	IL							
W9SMC (K9GY)	313	101	31613	IL	SMC #2						
N4TZ	226	116	26216	IN	SMC #11						
N9QQK	240	101	24240	IL	SMC #4						

Multi-Two Scores					
Call	Score	QSOs	Mults	Section	
W5NN	447596	1502	298	TX	
(W5ASP, K5GA, K5NZ)					
K0RF (+W0UA)	442827	1491	297	CO	
K5KA (+N5OT)	367164	1316	279	OK	
N0NI	364800	1280	285	IA	
(+N0AC, W0OV)					
W6YX	317009	1253	253	CA	
(W6LD, N7MH, W6CT)					
N9KI	949	247	234403	WI	
(K0SN, AA9PB, N9PQU, KB9WBP)					
W5SB	214179	987	217	TX	
(+K8EP, W5MJ)					
K6ZM	121770	615	198	CA	
(K6WG, KD6RMN)					

*Denotes stations running QRP

Check Logs: KF3CV, N3AO, W5ORM, WA2BMH

Results, January 2001 NAQP SSB Contest

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The Presidential election of November 2000 inspired some creative contest names for the January 2001 NAQP SSB Contest: from "Chad" to "Dubya." The election may have been close, but the results of this contest weren't. N6MJ trounced the competition by breaking the single op 400k point barrier with an amazing 408980 score. Prior to this edition of the contest, there had been only five scores greater than 300k points, with K6LL holding the all-time record of 322788. In January 2001 a contesteer had to score more than 300k points to make the Top Ten! The top six scores broke the old all-time record!

W7WA smashed his old Washington record by more than 90k points en route to a second-place finish. K4XS took third and broke his own Florida record by also breaking WR3G's 1992 record for most total multipliers with 284. W7GG upped his year-old Oregon record for fourth place, while N6RT drove W6EEN's station to a fifth place finish. K7RI took sixth place, and W5AO operated W5TM to a seventh-place finish and a new Oklahoma record. KB3AFT used WE9V's station to break WE9V's two-year old Wisconsin record by more than 70k points. K6LL took ninth, while N5RZ rounded out the Top Ten with a new Texas record.

The KH6ND multi-op made an incredible 2540 QSOs, but couldn't overcome K9NS's geographical advantage for multipliers on the low bands. In the end, both multi-ops broke the old 1994 record held by WB5VZL, but K9NS prevailed to take first place by 16k points. The N0NI crew produced the fourth-best multi-op score of all time for a third-place finish.

In the team competition, the Southern California Contest Club #1 team, with three top-ten single-op finishers, broke the 1.5M point barrier and broke the old all-time team record (also by an SCCC team) to take first place. SCCC teams now hold the top three team scores of all time. The Tennessee Contest Group #1 team took second, while the Mad River Radio Club #1 team took third. This is the first NAQP SSB contest where the top three teams all broke the million-point mark.

In addition to these top scores, there were many other record-setting performances. W1CTN smashed W1CRS's year-old Connecticut record, K1VUT added almost 50k points to his own Massachusetts record, and

Single Op Top Ten Breakdowns

Call	Score	QSOs	Mults	160	80	40	20	15	10	Team
N6MJ	408980	1573	260	3/3	67/34	196/51	424/54	241/59	642/59	SCCC #1
W7WA	365000	1460	250	21/13	54/21	151/49	333/56	313/51	588/60	
K4XS	349604	1231	284	53/27	132/36	335/56	324/59	275/58	112/48	FCG #1
W7GG	344470	1406	245	20/14	41/23	188/42	306/57	222/53	629/56	TCG #1
W6EEN (N6RT)	334894	1259	266	20/13	99/38	163/47	307/56	197/59	473/53	SCCC #1
K7RI	330400	1475	224	10/5	50/21	152/39	354/53	406/54	503/52	
W5TM (W5AO)	320280	1256	255	111/32	146/38	276/46	349/49	284/49	90/41	TCG #2
WE9V (KB3AFT)	316057	1141	277	116/42	209/50	298/55	282/51	135/42	101/37	SMC #1
K6LL	313876	1198	262	20/14	70/31	153/46	299/59	344/60	312/52	SCCC #1
N5RZ	310068	1276	243	46/20	57/26	157/46	338/57	379/53	299/41	

Multi-Two Breakdowns

Call	Score	QSOs	Mults	160	80	40	20	15	10
K9NS	661050	2034	325	198/48	278/51	474/57	498/65	300/54	286/50
KH6ND	645160	2540	254	2/1	19/10	260/50	415/61	847/66	997/66
N0NI	564489	1863	303	160/46	257/54	368/56	560/62	299/47	219/38

Team Scores

1. Southern California Contest Club #1

N6MJ	408980
W6EEN (N6RT)	334894
K6LL	313876
K6RO	293986
K6LA	227964
Total	1579700

2. Tennessee Contest Group #1

W7GG	344470
N4ZZ	283710
K0EJ	228575
K4MA	191296
W4CAT	157620
Total	1205671

3. Mad River Radio Club #1

N8VW	222952
KU8E	211200
W8MJ	208250
K9TM	191588
K8ND	190936
Total	1024926

4. Society of Midwest Contesters #1 (WT9U, KG9X, WE9V, K9XD)	954397
5. Tennessee Contest Group #2 (K1VUT, W0ETC, KE4OAR, K4BEV, W5TM)	890051
6. Society of Midwest Contesters #2 (AE9B, K1OMB, W9IU, K9ZO, N0AV)	827355
7. Southern California Contest Club #2 (K6AM, XE2MX, W7WW, N6ZZ, WK6I)	644350
8. Northern California Contest Club #1 (AE6Y, WA6O, N6ZFO, VY1JA)	555813
9. Florida Contest Group #1 (K4XS, N4PK, KD4RWN, KK4TA)	539858
10. South East Contest Club #1 (W4WA, W2JJC, K4WI, W4NTI, K4BAI)	521991
11. Ozark Contest Club (KM5G, W5YM, W5RZ, KG5RM)	430828
12. PVRC/North Carolina (WW4M, AB0MV, N4YDU, K17WX)	425902
13. Mad River Radio Club #2 (ND8DX, K5IID, K8MR, NU8Z)	394438
14. Florida Contest Group #2 (K1TO, N4BP, W4SAA)	391913
15. Society of Midwest Contesters #3 (KE9I, W0UY, K9JLS, KJ9C, W9RE)	351168
16. Northern California Contest Club #2 (K6III, W1SRD, W6CUS, W6ISO)	311279
17. South East Contest Club #2 (NJ8J, NE4S, AA4LR)	211120
18. Weekend Warriors (N3FR, WA3HAE)	207533
19. Society of Midwest Contesters #4 (N9NU, K9WX, K9MI)	192138
20. Florida Contest Group #3 (N4RP, N4IG, NA4CW, K5KG, W4/YV5DTA)	180073
21. Jim & Earl (VE7IN, VE7FO)	179695
22. Yankee Clipper Contest Club (K5ZD, K1HT, K1JN)	163396
23. Minnesota Wireless Association (AC0W, K0AD, KT0R)	159974
24. Tennessee Contest Group #6 (N5NW, NA4K, W4AUI)	154157
25. Society of Midwest Contesters #6 (WD9HSH, WA1UJU, KB9JIF, KB9CRY)	152572
26. South East Contest Club #3 (K4SB, K4IDX)	152061
27. Tennessee Contest Group #5 (KB2EQQ, AF4QB, K4LTA, W4NZ)	149232
28. Tennessee Contest Group #3 (W1ADE, K4OOO, N4VI)	147692
29. Society of Midwest Contesters #8 (N9BOR, W9HL, WA9IRV, W9LYN, N9CK)	130459
30. Texas DX Society (W5ASP, KN5Z)	122715
31. Mad River Radio Club #4 (N8EA, AD8J)	120139
32. Society of Midwest Contesters #7 (KC9FC, N9JF)	108750
33. Tennessee Contest Group #4 (N7DLS, W9WI, KG4ENY)	95059
34. Society of Midwest Contesters #5 (N9KO, KM9M, W9YS)	69197
35. Green River Gang (NO9S, NE0P, KE0FT)	65670
36. Tennessee Contest Group #7 (KG4BIG, W4TDB)	42669
37. Society of Midwest Contesters #9 (W9WUU, AK9F, AA9RR)	39685
38. Mad River Radio Club #3 (K8AAX, K8LN, W8DRZ)	31826
39. Northern California Contest Club #3 (K6CTA, K6EP)	25492

WA1LNP operated as WE1USA to break his own New Hampshire record by more than 100k points. K4MA set a new North Carolina standard, while N4ZZ did the same in Tennessee. KM5G nudged K5OY's Arkansas record slightly higher, and W5WMU broke his own year-old Louisiana record. KL9A piloted W7UQ to a new Idaho record by a margin of almost 90k points, KK7SG more than doubled the 1991 Wyoming record, and K9PG operated K9XD to a new Illinois record. KE9I pushed W9RE's Indiana record higher, while

AE9B did the same with KI0MB's Missouri record. VA7AM added almost 50k points to his own British Columbia record, while VE1OP set a new standard for Nova Scotia, VE2AWR for Quebec, and VY1JA for the Yukon (more than doubling the old record). To the south, N6KI added almost 20k points to the Mexico record while operating XE2MX.

All in all, this edition of the NAQP SSB Contest produced some amazing scores: nine of the top-ten all-time single-op scores and 28 new records.

Single Operator Scores

Call	Score	QSOs	Mults	Section	Team	K4SB	82739	527	157	GA	SECC #3
WE1USA	282204	1206	234	NH		WW4M	82134	486	169	NC	PVRC - NC
(WA1LNP)						Call	Score	QSOs	Mults	Section	Team
W1CTN	189618	858	221	CT		KI7WX	81940	482	170	NC	PVRC - NC
K1VUT	181412	868	209	MA	TCG #2	K4LTA	77616	462	168	TN	TCG #5
K1JN	107868	606	178	CT	YCCC	NE4S	77440	484	160	GA	SECC #2
N1ND	73164	469	156	CT		K4IDX	69322	506	137	GA	SECC #2
NY1S	52895	355	149	ME		W4IDX	66429	549	121	NC	
AB1R	35868	294	122	ME		W9WI	65526	402	163	TN	TCG #4
K1HT	35282	299	118	MA	YCCC	K4BAI	60894	398	153	GA	SECC #1
K5ZD	20246	191	106	MA	YCCC	W4LC	59823	391	153	KY	
WA1ZYX	19980	222	90	NH		K4IU	57424	388	148	KY	
N1MD	14760	164	90	CT		N4IG	56625	375	151	FL	FCG #3
N1LW	14337	177	81	ME		N4CW	51060	345	148	NC	
WN1OTV	12096	168	72	ME		N4PK	51013	367	139	FL	FCG #1
W1TW	11985	141	85	MA		W1ADE	50337	329	153	TN	TCG #3
N1WRK	63	9	7	MA		WB4MSG	48789	351	139	NC	
						NJ8J	43434	342	127	GA	SECC #2
N12P	71205	505	141	NY		K4OOO	38703	291	133	TN	TCG #3
N2GM	41296	356	116	NJ		AF4QB	31800	265	120	TN	TCG #5
KB2EQO	16296	194	84	NY	TCG #5	N4UL	31050	270	115	KY	
N2LQQ	8540	122	70	NY		K7SV	30738	282	109	VA	
W5KI	7670	118	65	NJ		N7DLS	27927	261	107	TN	TCG #4
W2LE	7474	101	74	NJ		KT4Q	24531	221	111	GA	
						W4NZ	23520	210	112	TN	TCG #5
WA3HAE	108836	598	182	PA	WW	W4NTI	23408	209	112	AL	SECC #1
WZ3AR	101952	576	177	MD		KG4BIG	22790	215	106	KY	TCG #7
N3FR	98697	591	167	PA	WW	KK4TA	20009	187	107	FL	FCG #1
K3WW	73944	468	158	PA		W4/YV5DTA	19929	219	91	FL	FCG #3
AD8J	64561	401	161	PA	MRRC #4	W4TDB	19879	193	103	TN	TCG #7
N3RM	58548	476	123	PA		KT4FD	18321	197	93	GA	
NA3V	37050	285	130	PA		WT5L	18139	187	97	FL	
KB3FEE	16008	232	69	DE		KW4JS	13272	158	84	TN	
N8NA	13416	156	86	DE		W4SAA	13137	151	87	FL	FCG #2
NY3C	4794	102	47	DE		N3GMW	12300	150	82	VA	
W3ERU	4399	83	53	MD		W4AUI	10434	141	74	TN	TCG #6
AA2AD	2232	62	36	PA		NA4CW	6888	123	56	FL	FCG #3
N3SZW	782	34	23	MD		K1HG	6555	115	57	FL	
KB3ETI	112	14	8	PA		KV4CN	6240	120	52	NC	
N3DEL	16	4	4	DE		N4RP	4756	82	58	FL	FCG #3
(N9GG)						K1SO	4300	86	50	VA	
						K3MZ	3404	74	46	VA	
K4XS	349604	1231	284	FL	FCG #1	KG4ENY	1606	73	22	TN	TCG #4
N4ZZ	283710	1158	245	TN	TCG #1	W0EBA	1530	51	30	FL	
K1TO	228620	994	230	FL	FCG #2	KF4IRC	1290	43	30	AL	
K0EJ	228575	1025	223	TN	TCG #1	W4WB	864	36	24	AL	
K4WI	192960	804	240	AL	SECC #1	N5NW	323	19	17	TN	TCG #6
K4MA	191296	854	224	NC	TCG #1	K4BP	238	17	14	TN	
W4CAT	157620	740	213	TN	TCG #1	AG4CG	130	13	10	FL	
(K1KY)											
N4BP	150156	873	172	FL	FCG #2	W5TM	320280	1256	255	OK	TCG #2
NA4K	143400	717	200	TN	TCG #6	(W5AO)					
W4WA	133750	625	214	GA	SECC #1	N5RZ	310068	1276	243	TX	
W4WTB	129398	667	194	NC		K5NZ	288186	1117	258	TX	
KD4RWN	119232	648	184	FL	FCG #1	KM5G	216144	948	228	AR	OCC
N4YDU	118800	594	200	NC	PVRC - NC	WQ5G	199264	958	208	TX	
W2JJC	110979	627	177	SC	SECC #1	W5WMU	195038	863	226	LA	
KE4OAR	103194	567	182	TN	TCG #2	N5DX	174933	837	209	AR	SMC #2
K4BEV	92049	503	183	TN	TCG #2	(KI0MB)					
K5KG	91875	525	175	FL	FCG #3	K5KA	163728	758	216	OK	
AA2GS	90636	546	166	KY		W5YM	150378	706	213	AR	OCC
AA4LR	90246	534	169	GA	SECC #2	(AC5RR)					
NQ4U	85158	513	166	TN		W5FO	137609	713	193	TX	
K4EP	83476	509	164	VA		W5ASP	115344	648	178	TX	TDXS
N4AO	82754	514	161	FL		N5UM	85698	529	162	TX	
(WC4E)						K0CIE	64170	465	138	OK	

Call	Score	QSOs	Mults	Section	Team	N8VW	222952	899	248	OH	MRRC #1
KG5RM	58098	421	138	AR	OCC	KU8E	211200	880	240	OH	MRRC #1
WK5K	41344	304	136	TX		W8MJ	208250	875	238	MI	MRRC #1
N6ZZ	38940	354	110	NM	SCCC #2	K9TM	191588	844	227	OH	MRRC #1
N5PA	38225	275	139	MS		K8ND	190936	823	232	OH	MRRC #1
W5UE	34960	304	115	MS		WA8WV	132660	670	198	WV	
KE5OG	28421	293	97	TX		NU8Z	122840	664	185	MI	MRRC #2
KJ5WX	26442	234	113	AR		K5IID	116220	596	195	WV	MRRC #2
WR5O	9563	131	73	TX		KC8FS	101758	613	166	WV	
KB5IXI	8694	126	69	MS		ND8DX	94308	542	174	OH	MRRC #2
KN5Z	7371	117	63	TX	TDXS	N8KM	91948	508	181	OH	
W5WZ	6448	124	52	LA		K8MR	61070	394	155	OH	MRRC #2
W5RZ	6208	97	64	AR	OCC	N8EA	55578	354	157	MI	MRRC #4
W5ETM	1683	51	33	TX		AK8B	27615	263	105	OH	
KD5LNO	966	42	23	TX		K8CV	23653	217	109	MI	
KB5EKX	504	36	14	AR		W8DRZ	15300	180	85	OH	MRRC #3
						K8AAX	9450	135	70	MI	MRRC #3
N6MJ	408980	1573	260	CA	SCCC #1	K8LN	7.076	122	58	OH	MRRC #3
W6EEN (N6RT)	334894	1259	266	CA	SCCC #1	K8KTY	5832	108	54	OH	
						WX3M	4950	99	50	MI	
K6RO	293986	1162	253	CA	SCCC #1	W8KNO	3024	84	35	OH	
N6NF	250308	1227	204	CA		N8BJQ	2112	66	32	OH	
K6LA	227964	942	242	CA	SCCC #1	KW8W	396	22	18	OH	
W6TK	210219	887	237	CA							
AE6Y	203123	887	229	CA	NCCC #1	WE9V (KB3AFT)	316057	1141	277	WI	SMC #1
K6AM	167466	741	226	CA	SCCC #2	K9XD (K9PG)	279112	1004	278	IL	SMC #1
WA6O	156750	750	209	CA	NCCC #1	K9ZO	185954	853	218	IL	SMC #2
N6ZFO	143616	748	192	CA	NCCC #1	(KB9UWU)					
AK6R	132012	772	171	CA		KE9I	182160	792	230	IN	SMC #3
W6ISO	95757	541	177	CA	NCCC #2	KG9X	179892	789	228	IL	SMC #1
W6CUS (K6SRZ)	81675	605	135	CA	NCCC #2	WT9U	179336	773	232	IN	SMC #1
K6III	68987	463	149	CA	NCCC #2	N9PQU	170065	791	215	WI	
KE6ZSN	67620	490	138	CA		W9IU	134442	693	194	IN	SMC #2
W1SRD	64860	470	138	CA	NCCC #2	W9BS	107485	581	185	IN	
WK6I	48928	352	139	CA	SCCC #2	K9MI	94248	612	154	IN	SMC #4
W6AFA	44288	692	64	CA		WA1UJU	93600	520	180	WI	SMC #6
KA6MAL	33396	276	121	CA		KJ9C	78518	473	166	IN	SMC #3
W6MVW	33250	266	125	CA		N9JF	76500	450	170	IL	SMC #7
WO6M	32382	257	126	CA		N9CK	70632	436	162	WI	SMC #8
W6ESJ	27904	218	128	CA		K9WX	66144	424	156	IN	SMC #4
K6CTA	25305	241	105	CA	NCCC #3	W9YS	49800	332	150	IL	SMC #5
WB6NFO	24924	201	124	CA		W9RE	41440	296	140	IN	SMC #3
KE6OUA	13410	149	90	CA		N9NT	38991	317	123	IL	
N6DIT	7524	171	44	CA		KC9FC	32250	258	125	IN	SMC #7
K6BIR	6039	99	61	CA		N9NU	31746	286	111	IL	SMC #4
KA6IDE	3723	75	51	CA		W9HL	27972	252	111	IL	SMC #8
K6CSL	1440	45	32	CA		KB9CRY	27776	248	112	IL	SMC #6
K6EP	187	17	11	CA	NCCC #3	W9WUU	23435	215	109	WI	SMC #9
						KX9DX	20839	229	91	IL	
W7WA	365000	1460	250	WA		KB9JIF	20504	233	88	WI	SMC #6
W7GG	344470	1406	245	OR	TCG #1	WA9IRV	20497	199	103	WI	SMC #8
K7RI	330400	1475	224	WA		N9LF	18600	186	100	IN	
K6LL	313876	1198	262	AZ	SCCC #1	K9JLS	14476	188	77	IL	SMC #3
W7UQ (KL9A)	294996	1209	244	ID		KM9M	12782	166	77	IL	SMC #5
W7ZRC	264944	1142	232	ID		AA9RR	12300	150	82	WI	SMC #9
W7ZR	254220	1115	228	AZ		WD9HSH	10692	132	81	IL	SMC #6
N7LOX	178555	871	205	WA		N9BOR	9900	132	75	IL	SMC #8
WT6G	169290	855	198	MT		KF9YR	7200	120	60	WI	
WA7LW	160765	869	185	UT		N9KO	6615	105	63	IL	SMC #5
W7WW	158496	762	208	AZ	SCCC #2	N9ZUT	5394	93	58	IL	
KK7SG	142400	800	178	WY		AK9F	3950	79	50	IL	SMC #9
K5ZM	97740	540	181	OR		N9XR	2910	97	30	IL	
N3HXQ/KL7	92016	648	142	AK		W9LYN	1458	54	27	IL	SMC #8
WS7I	80541	471	171	WA		NG9R	544	32	17	IL	
K7ZO	70070	490	143	ID		KB9THJ	286	22	13	IL	
KI7Y	67734	426	159	OR		N9YPN	70	10	7	IL	
KW7N	50127	341	147	ID							
KO7X	48828	313	156	UT		N0AV	205552	886	232	IA	SMC #2
NB7B	21420	306	70	UT		W0ETC	193116	836	231	IA	TCG #2
WA8WLO	20608	448	46	WY		AB0MV	143028	822	174	CO	PVRC - NC
KD7RX	18048	188	96	WY		AE9B	126474	642	197	MO	SMC #2
KN5H	8125	125	65	AZ		N0WE	114144	656	174	MN	
AC7GM	6800	100	68	MT		KT0R	97278	523	186	MN	MWA
KC7ZEP	4611	87	53	WA		K0GAS	69720	420	166	CO	
KB5QBX	1650	55	30	WA		W0BR	66411	423	157	KS	
KC7KQI	990	33	30	WA		K0AD	59888	394	152	MN	MWA
KD4TTA	100	10	10	WA		N4VI	58652	473	124	CO	TCG #3
W7/JR1NKN	20	5	4	WA		K0GN	55770	390	143	MO	
						KE0FT	55648	376	148	IA	GRG

K0OB	50552	356	142	MN	SMC #3
W0UY	34574	293	118	KS	
K0CF	33448	296	113	IA	
K0TG	29274	287	102	MN	
N0WY	27645	287	97	NE	
K0BUD	19401	223	87	MN	
K0NY	13528	152	89	MN	
K0DAT	11376	144	79	MO	
K9IUA	11076	156	71	ND	
KC8JRF	11049	127	87	MN	
NE0P	6732	102	66	IA	GRG GRG MWA
NO9S	3290	70	47	IA	
AC0W	2808	72	39	MN	
WA0OTV	2160	72	30	MO	
KB0ARZ	2142	63	34	NE	
N0LZ	2065	59	35	NE	
N0VEK	1288	46	28	SD	
K0CO	875	35	25	CO	
KC0IDI	480	24	20	KS	
WA0IYY	350	25	14	MO	
WA0TWJ	9	3	3	CO	

VE5SF	251412	1022	246	SK	J & E
VA7AM	194040	980	198	BC	
VA6RA	170275	973	175	AB	
VE5CPU	113050	646	175	SK	
VE7TLL	106406	641	166	BC	
VE7FO	97851	579	169	BC	
VE7XB	89712	623	144	BC	
VE7IN	81844	553	148	BC	
VE2AWR	71878	433	166	PQ	
VY1JA	52324	412	127	YT	J & E NCCC #1
VE3BUC	44478	353	126	ON	
VE1OP	43656	428	102	NS	
VE6YR	38750	310	125	AB	
VE4YU	32766	254	129	MB	
VE3KP	16984	193	88	ON	
VE7QO	9744	203	48	BC	
VE3YQY	9135	145	63	ON	
VA3IX	8282	202	41	ON	
VA2IC	5782	98	59	PQ	
VA3KOC	4100	82	50	ON	SCCC #2
VE6JY	3650	73	50	AB	
VE7ZEP/VE6	2349	81	29	AB	
VE9WH	1496	44	34	NB	
VE3ZT	1305	45	29	ON	
VE3RSI	432	24	18	ON	

XE2MX	230520	1020	226	XE	SCCC #2
(N6KI)					
VP5AZ	130900	850	154	VP5	
(KN4UG)					
XE1KK	55020	420	131	XE	
DL5ME	108	12	9	DX	

Multi-Two Scores

Call	Score	QSOs	Mults	State/Province
K9NS	661050	2034	325	IL
(K9HMB, K9PW, W9RM, W9YT)				
KH6ND	645160	2540	254	KH6
(+K9QQ)				
N0NI	564489	1863	303	IA
(+N0HR, W0FLS, N0AC)				
WJ1Z	547960	2060	266	VT
(+KK1L, K1KD, K1WEY)				
W6YX	464294	1726	269	CA
(W6LD, N7MH, W6CT)				
VE6AO	377253	1503	251	AB
(VE6TC, VE6EX)				
W5SB	356724	1468	243	TX
(+W5IDX, WA5OJE, KK5LD, NM5X, N5XJ)				
K4NO	337200	1405	240	AL
(+KA9EKJ)				
N4GN	325260	1251	260	KY
(+K9GX, KT4ZX)				
N9KI	290250	1125	258	WI
(K0SN, AA9PB, K8IR, KB9WBP, KG8CX)				
W4WS	258500	1100	235	NC
(N4VHK, KU4BP, N0KTY)				

K0GQ	205545	965	213	MO
(K0OU, KC0DEA, KC0ELZ, N0EVH, W0RDE)				
K6ZM	201400	950	212	CA
(K6WG, KD6RMN)				
W4NF	194258	943	206	VA
(+W4MFM)				
NY4T	178164	909	196	TN
(+N4JN, N4LKE)				
N5YA	163647	783	209	TX
(+W5IUA)				
WW4KY	124740	693	180	KY
(K4AT, K4WW)				
W5LAR	43229	311	139	MS
(N5KKG, KM5NQ, KB5VLA, KC5WGU, KC5YDR)				
K5BSA	35624	292	122	TX
(KD5HDS, KD5CTT, KC5YSL, KD5IQO, KR1ZAN, KD5IQP, KD5HDR, KD5HHZ, KD5JVF, KA5SOT, KC5QAI, WA5TET)				
KD4YLR	20691	209	99	MI
(+VA3DJL)				
W0EEE	17544	204	86	MO
K5GTO	16038	198	81	AR
(+KD5CCG)				
VA3PRC	12240	144	85	ON
VE3EPB	464	29	16	ON
(+VE3FFK, VE3ZTU)				

Multiplier Availability

This table shows the maximum number of multipliers available on each band during the entire contest period.

160m	80m	40m	20m	15m	10m
59	65	67	78	77	77

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Shorts

Following publication of my article "Scoring Your Antenna System" in the Jan/Feb 2001 issue of *NCJ*, Bruce Horn, WA7BNM, sent me a very nice e-mail that identified a couple of technical errors in my presentation. While the errors don't invalidate the concept of total effective gain as a metric for antenna systems, I want to pass these along so that anyone trying to apply the idea will do it more correctly.

My first mistake was in summing the gain of the antenna system in dBi. Because the antenna gain at various angles is zero or negative, this can result in apparently subtracting the signal at these angles from the total, when in fact it is less, but not zero or negative. The right way to score an antenna is first to convert each gain figure in dBi to a power ratio, and then sum the powers for all of the angles, and then finally convert back to dBi.

Here's the example that Bruce provided, (using the data from Table 1 of my article):

- Angle: 2 degrees
- Gain: 3.7 dBi
- Gain Ratio (Relative Power): $10^{(3.7/10)} = 2.344$ (the power at this angle is 2.344 times that of an isotropic radiator).
- Percent of signals at 2 degrees: 7.6
- Effective Gain Ratio (EGR) at 02 degrees = $0.076 \times 2.344 = 0.178$

Performing these same calculations for each of the arrival angles from 1 to 35 degrees and summing the effective gain ratios for the range of angles gives a total effective gain ratio of 7.244. This converts back to a "score" of 8.60 (Score = $10 \log(\text{EGR})$).

Bruce's second well-taken point is that it's not proper to compare these scores using percentages, because the scores contain logarithmic elements. Instead, simply subtract them. That is to say, the improvement going from a score of 15 to 18 is just as large as going from 30 to 33 (though probably easier to achieve!).

For the examples used in my article, the difference is worth noting. The difference between the total three-band scores of the two-high stack and a single tribander (29.5 and 22.17) is 7.33, while adding a third tribander produces a score of 31.22, or an increase of 2.72. Still not as big a jump, but more impressive than my original percentage calculation made it seem. I may have to reconsider adding that third Yagi!

73, Pete, N4ZR

In my article "DX Spotting and Networking in Contesting—Past, Present and Future" (see *NCJ* Mar/Apr 2001), in the second to the last paragraph, the phrase "Turing Test" that I used in the submitted text was changed—somewhere in the editing stages—to "torture test."

Alan Turing was an English mathematician who did some very early work on artificial intelligence. The classic Turing Test puts a test subject in one room with either a computer or a person

in the next room. They hold a conversation and the test subject is supposed to decide if they are talking with a man or machine. There have been various prizes offered over the years for the first machine to pass the test. As far as I know, it hasn't been claimed yet. For additional information see: marxists.org/glossary/people/tu.htm and www.abelard.org/turpap/turpap.htm.

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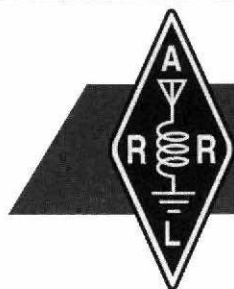
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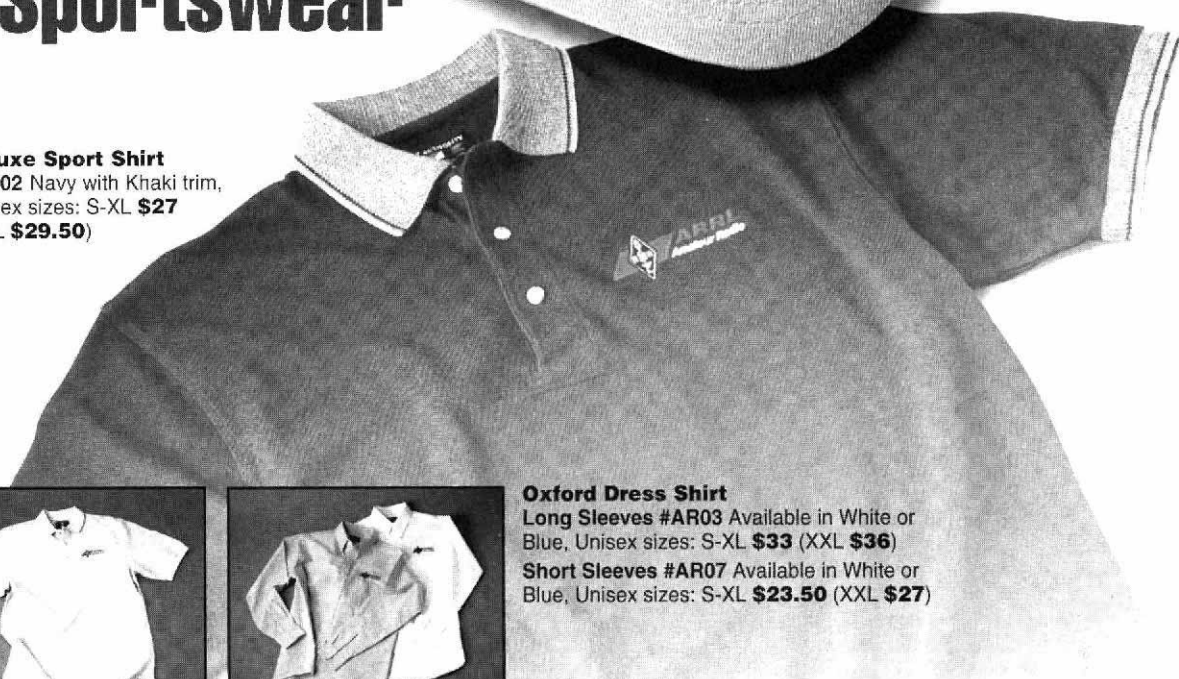
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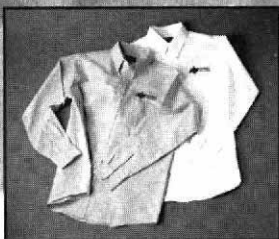


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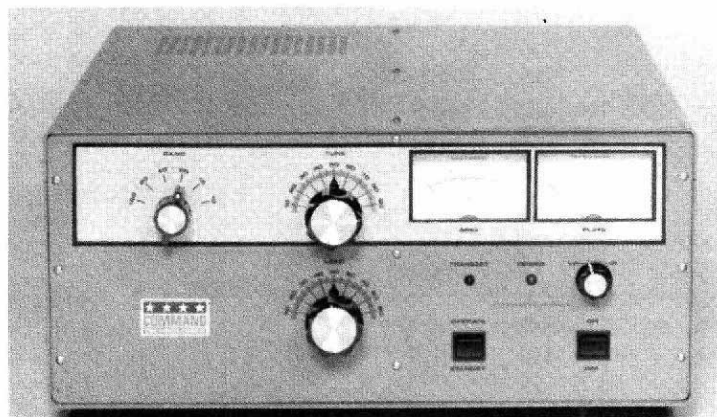
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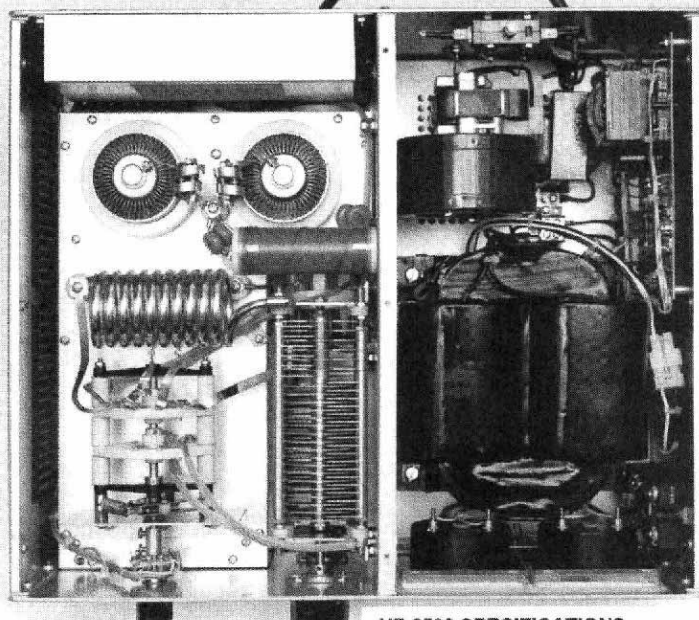
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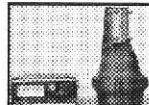


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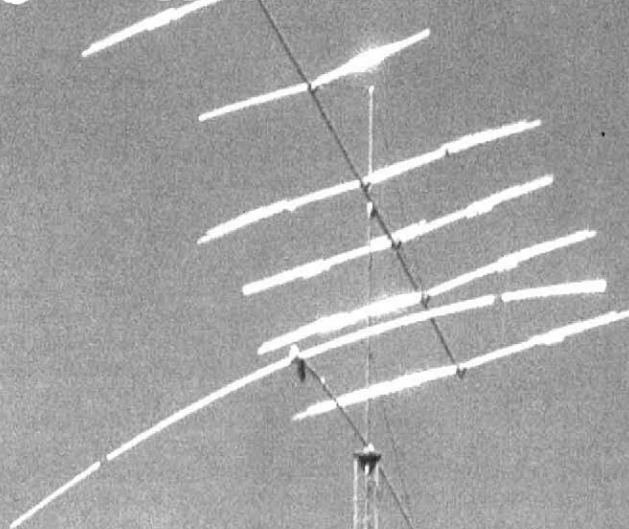
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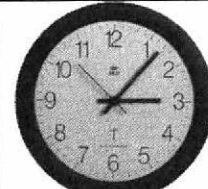
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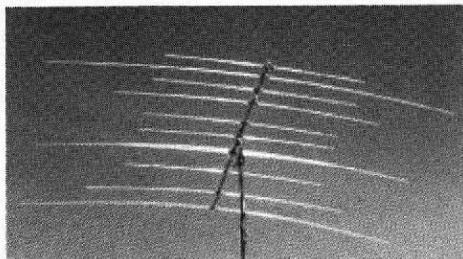
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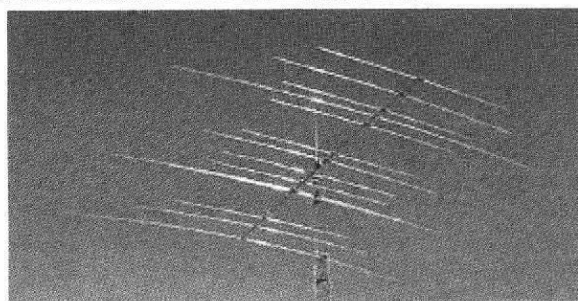
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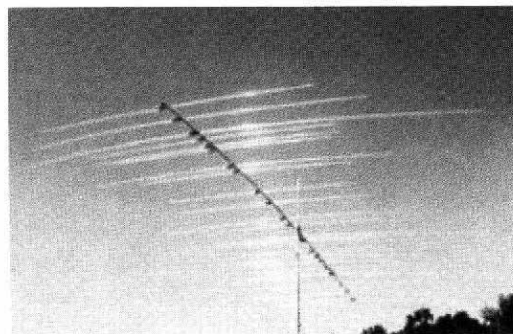
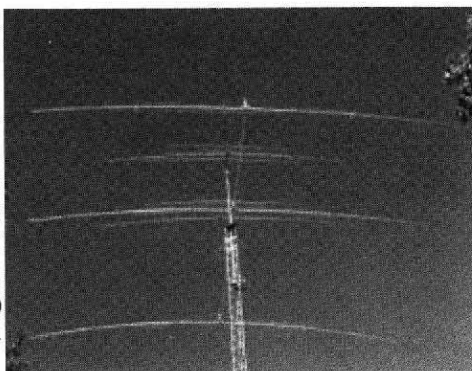
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For expanded product info, T-shirts, Debugging an Antenna, Antenna Specs and more: www.force12inc.com

E-mail to: force12e@lightlink.com Join the Force 12 Reflector – see the QTH.com Web Site

Force 12, Inc. PO Box 1349 Paso Robles, CA 93447

Order Line 1.800.248.1985 Tech Line 1.805.227.1680 FAX 1.805.227.1684

SAVE BIG ON ANTENNAS, TOWERS & CABLE

TELESCOPING ALUMINUM TUBING

DRAWN 6063-T832	1.250" .. \$1.55/ft
.375	\$1.75/ft
.500"	\$1.95/ft
.625"	\$2.25/ft
.750"	\$2.50/ft
.875"	\$2.75/ft
1.000"	\$3.00/ft
1.125"	\$3.50/ft

In 6' or 12' lengths, 6' lengths ship UPS. Call for 3/16" & 1/4" rod, bar stock, and extruded tubing.

BENCHER / BUTTERNUT

Skyhawk, Triband Beam	\$1129
HF2V, 2 Band Vertical	\$219
HF5B, 5 Band Mini-beam	\$429
HF6VX, 6 Band Vertical	\$299
HF9VX, 9 Band Vertical	\$349
A1712, 12/17m Kit	\$54
CPK, Counterpoise Kit	\$129
RMKII, Roof Mount Kit	\$159
STR11, Roof Radial Kit	\$125
TBR160S, 160m Kit	\$119

More Bencher/Butternut-call

COMET ANTENNAS

GP15, 6m/2m/70cm Vertical ...	\$149
GP6, 2m/70cm Vertical	\$139
GP9, 2m/70cm Vertical	\$179
B10NMO, 2m/70cm Mobile	\$36
B20NMO, 2m/70cm Mobile	\$49
SBB2NMO, 2m/70cm Mobile	\$39
SBB5NMO, 2m/70cm Mobile	\$49
SBB7NMO, 2m/70cm Mobile	\$75
Z750, 2m/70cm Mobile	\$55
Z780, 2m/70cm Mobile	\$69

Much more Comet in stock-call

DIAMOND ANTENNAS

D130J/DPGH62	\$79/139
F22A/F23A	\$89/119
NR72BNMO/NR73BNMO	\$39/54
NR770HBNMO/NR770RA	\$55/49
X200A/X3200A	\$129/210
X500HNA/700HNA	\$229/369
X510MA/510NA	\$189/189
X50A/V2000A	\$99/149
CR627B/SG2000HD	\$99/79
SG7500NMO/SG7900A	\$75/112

More Diamond antennas in stock

GAP ANTENNAS

Challenger DX	\$289
Challenger Counterpoise	\$29
Challenger Guy Kit	\$19
Eagle DX	\$299
Titan DX	\$329
Eagle/Titan Guy Kit	\$29
Voyager DX	\$409
Voyager Counterpoise	\$49
Voyager Guy Kit	\$45
Quicktilt Mount	\$75

Please Call for Delivery Information

CUSHCRAFT ANTENNAS

X7/X740	\$679/229
XM240	\$719
R6000/R8	\$319/469
A50-3S/5S/6S	\$95/159/259
AR2/ARX2B	\$49/69
AR270/AR270B	\$85/99
ARX270N/ARX-450B	\$219/65
13B2/17B2	\$139/249
26B2	\$389
A270-6S/A270-10S	\$75/99

Please call for more Cushcraft items

M2 VHF/UHF ANTENNAS

144-148 MHz

2M4/2M7/2M9	\$89/109/119
2M12/2M5WL	\$149/189
2M5-440XP, 2m/70cm	\$159

420-450 MHz

440-470-5W/420-450-11	\$129/89
432-9WL/432-13WL	\$169/219
440-18/440-21ATV	\$119/139

Satellite Antennas

2MCP14/2MCP22	\$169/219
436CP30/436CP42UG	\$219/259

M2 ANTENNAS

50-54 MHz

6M5X/6M7JHV	\$199/239
6M2WLC/6M2.5WLC	\$419/449

10/12/15/17/20m HF

10M4DX, 4 Element 10m	\$379
12M4DX, 4 Element 12m	\$379
15M4DX, 4 Element 15m	\$419
17M3DX, 3 Element 17m	\$379
20M4DX, 4 Element 20m	\$499

More M2 models in stock-please call

MFJ ANTENNAS

259B, Antenna Analyzer	\$219
269, Antenna Analyzer	\$299
941E, 300W Antenna Tuner	\$109
945E, 300W Antenna Tuner	\$99
949E, 300W Antenna Tuner	\$139
969, 300W Antenna Tuner	\$169
986, 3kW Antenna Tuner	\$289
989C, 3 kW Antenna Tuner	\$309
1796, 40/20/15/10/6/2m Vert.	\$189
1798, 80-2m Vertical	\$249

Big MFJ inventory-please call

LAKEVIEW HAMSTICKS

9106	6m	9115	15m	9130	30m
9110	10m	9117	17m	9140	40m
9112	12m	9120	20m	9175	75m

All handle 600W, 7' approximate length, 2:1 typical VSWR ... \$24.95

HUSTLER ANTENNAS

4BT/5BT/6BT	\$149/189/209
G6-270R, 2m/70cm Vertical ...	\$169
G6-144B/G7-144B	\$129/179

Hustler Resonators in stock-call

FORCE 12-MULTIBAND

C3 10/12/15/17/20m, 7 el	\$599
C3E 10/12/15/17/20m, 8 el	\$649
C3S 10/12/15/17/20m, 6 el	\$539
C3SS 10/12/15/17/20m, 6 el	\$559
C4 10/12/15/17/20/40m, 8 el	\$759
C4S 10/12/15/17/20/40m, 7 el	\$679
C4SXL 10/12/15/17/20/40m, 8 el	\$979
C4XL 10/12/15/17/20/40m, 9 el	\$1119
C19XR 10/15/20m, 11 el	\$959
C31XR 10/15/20m, 14 el	\$1299

Please call for more Force 12 items

ROHN TOWER

25G/45G/55G	\$89/189/239
AS25G/AS45G	\$39/89
GA25GD/45/55	\$68/89/115
GAR30/GAS604	\$35/24
SB25G/45/55	\$39/89/109
TB3/TB4	\$85/99
HBX32/HBX40	\$349/439
HBX48/HBX56	\$589/699
HDBX40/HDBX48	\$549/699
BXB5/6/7-8	\$39/49/59/59

Please call for more Rohn prices

GLEN MARTIN ENGINEERING

Hazer Elevators for 25G

H2, Aluminum Hazer, 12 sq ft ...	\$359
H3, Aluminum Hazer, 8 sq ft	\$269
H4, HD Steel Hazer, 16 sq ft	\$339

Aluminum Roof Towers

RT424, 4 Foot, 6 sq ft	\$159
RT832, 8 Foot, 8 sq ft	\$229
RT936, 9 Foot, 18 sq ft	\$389
RT1832, 17 Foot, 12 sq ft	\$499

Please call for Glen Martin info

COAX CABLE

RG-213/U, (#8267 Equiv.)	\$36/ft
RG-8X, Mini RG-8 Foam	\$19/ft
RG-213/U Jumpers	Please Call
RG-8X Jumpers	Please Call

Please call for more coax/connectors

TIMES MICROWAVE LMR® COAX

LMR-400	\$59/ft
LMR-400 Ultraflex	\$89/ft
LMR-600	\$119/ft
LMR600 Ultraflex	\$195/ft

ANTENNA ROTATORS

M2 OR-2800PDC	\$1099
Yaesu G-450A	\$249
Yaesu G-800SA/DXA	\$329/409
Yaesu G-1000DXA	\$499
Yaesu G-2800SDX	\$1089
Yaesu G-550/G-5500	\$299/599

ROTATOR CABLE

R61 (#20)/R62 (#18)	\$28/32
R81/R82	\$25/39
R83/R84	\$52/85

TRYLON "TITAN" TOWERS

SELF-SUPPORTING STEEL TOWERS

T200-64 64', 15 square feet	\$1099
T200-72 72', 15 square feet	\$1299
T200-80 80', 15 square feet	\$1499
T200-88 88', 15 square feet	\$1769
T200-96 96', 15 square feet	\$2049
T300-88 88', 22 square feet	\$1989
T400-80 80', 34 square feet	\$1939
T500-72 72', 45 square feet	\$1879
T600-64 64', 60 square feet	\$1799

Many more Trylon towers in stock!

US TOWER

MA40/MA550	\$849/1399
MA770/MA850	\$2359/3729
TMM433SS/HD	\$1139/1379
TMM541SS	\$1499
TX438/TX455	\$1069/1599
TX472/TX489	\$2649/4599
HDX538/HDX555	\$1379/2399
HDX572MDPL	\$6329

Please call for help selecting a US Tower for your needs. Shipped factory direct to save you money!

UNIVERSAL ALUMINUM TOWERS

4-40'/50'/60'	\$519/739/1049
7-50'/60'/70'	\$939/1369/1789
9-40'/50'/60'	\$729/1049/1469
12-30'/40'	\$559/869
15-40'/50'	\$969/1399
23-30'/40'	\$869/1289
35-30'/40'	\$979/1509

Bold in part number shows wind-load capacity. Please call for more Universal models. All are shipped factory direct to save you money!

TOWER HARDWARE

3/8"EE / EJ Turnbuckle	\$11/12
1/2"x9"EE / EJ Turnbuckle	\$16/17
1/2"x12"EE / EJ Turnbuckle	\$18/19
3/16" / 1/4" Preformed Grips	\$5/6

Please call for more hardware items

HIGH CARBON STEEL MASTS

5 FT x .12" / .18"	\$45/75
10 FT x .12" / 10 FT x .18"	\$75/125
15 FT x .12" / 15 FT x .18"	\$105/175
20 FT x .12" / 20 FT x .18"	\$135/225
10 FT x .25" / 20 FT x .25"	\$175/335

PHILLYSTRAN GUY CABLE

HPTG1200I	\$45/ft
HPTG2100I	\$59/ft
PLP2738 Big Grip (2100)	\$6.00
HPTG4000I	\$8.99/ft
PLP2739 Big Grip (4000)	\$8.50
HPTG6700I	\$1.29/ft
PLP2755 Big Grip (6700)	\$12.00
HPTG11200	\$1.69/ft
PLP2558 Big Grip (11200)	\$18.00

Please call for more info or help selecting the Phillystran size you need.

WEEKDAY HOURS:
9 AM-5 PM CST

SATURDAY HOURS:
9 AM-12 NOON CST

CREDIT CARDS:
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TEXAS TOWERS

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HEARD IT. WORKED IT. LOGGED IT.



The IC-756PRO. The world's top DX'ers choose ICOM.

Just listen to the guys who actually used them - they know better than anyone what the power of 32 bit IF-DSP technology can do for ham radio. In fact several members were so impressed that they bought '756PROs for their own ham shacks. "It just doesn't get any better than this" - says Glenn Johnson, WØGJ. Is it any wonder - the world's top DX'ers choose ICOM.

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HF/6M • 100W • All Mode • Triple Conversion Rx • Dual Watch • 32 Bit IF-DSP • Front Panel Adjustable Noise Reduction • Audio Peak Filter • Auto & Manual Notch Filter • Twin Passband Tuning • 5" TFT Color Display Shows Operating Conditions and Spectrum Scope • CW Memory Keyer • VOX • Auto Antenna Tuner • PC Controllable with Optional ICOM Software

"I was particularly impressed with the '756PRO's front end resistance to overloading. I never heard intermod noises or de-sensing even with the huge pileups we generated. Several times I listened carefully for such problems but they simply weren't there. On CW, once I had picked out a station, I could run the selectivity down to 50Hz and hear ONLY the station I wanted. I have worked pileups from several DX'peditions and have never encountered a radio that held up so well." - FO0AAA member Mike Goode, N9NS.

"All seven of the '756PROs worked flawlessly. We ran RTTY perhaps more than 50% duty cycle, and the radios never even got warm at maximum output. The digital filter controls were so easy to adjust and switch...a contesters' dream! We had seven radios, most of the time with three modes at once on any given band. There was NO interstation interference. All of our antennas (except for the 160M & 80M verticals) were within a 75 meter circle."

- A52A member Glenn Johnson, WØGJ

"Just back from K5K, Kingman Reef. The IC-756PROs again performed flawlessly and were a factor in our breaking 80,000 QSOs. I was a participant in FO0AAA, A52A and now K5K, all in 2000, and your radios made a combined 237,000 QSOs. You must be very proud to have your wonderful radios used by these DX'peditions that are now ranked as 3 of the top 6 DX'peditions* in terms of QSOs in the history of our hobby." - K5K member, Bob Allphin, K4UEE



Where to next?

www.icomamerica.com

ICOM

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