NCJ NATIONAL CONTEST JOURNAL

$4

July/August 2006

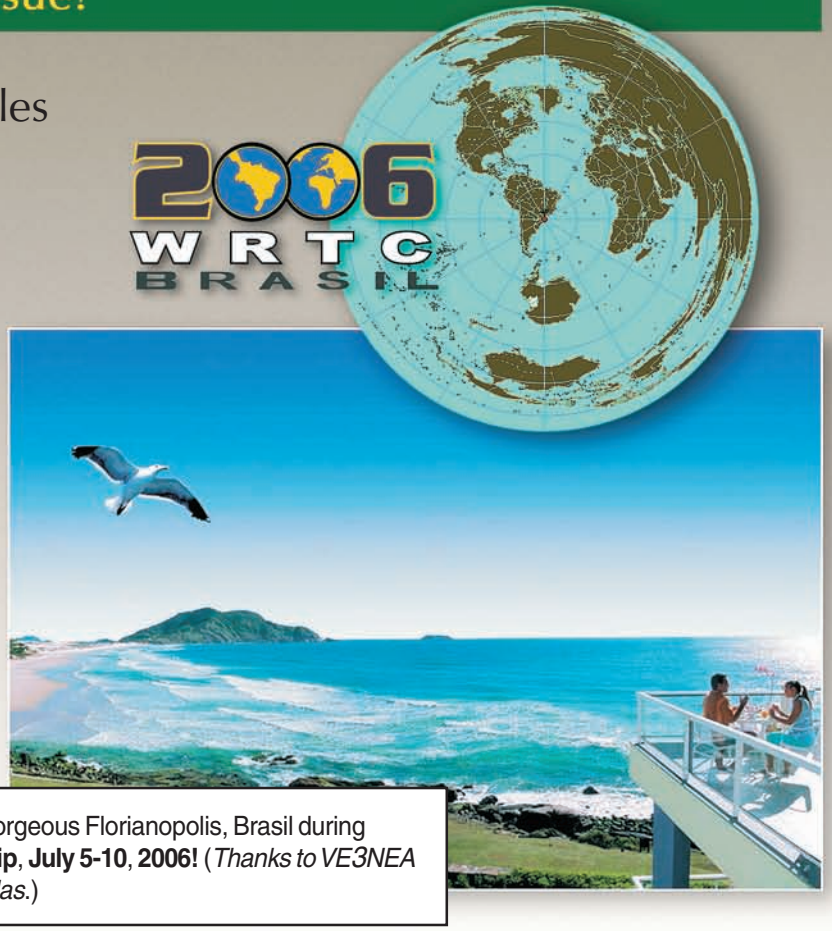
www.ncjweb.com Volume 34 Number 4

Special WRTC 2006 Issue!

- WRTC Competitor Profiles
- Predicted Propagation for WRTC
- The History of WRTC

also...

- February 2006 CW Sprint Results
- March 2006 RTTY Spring Results
- Contesting from Sri Lanka



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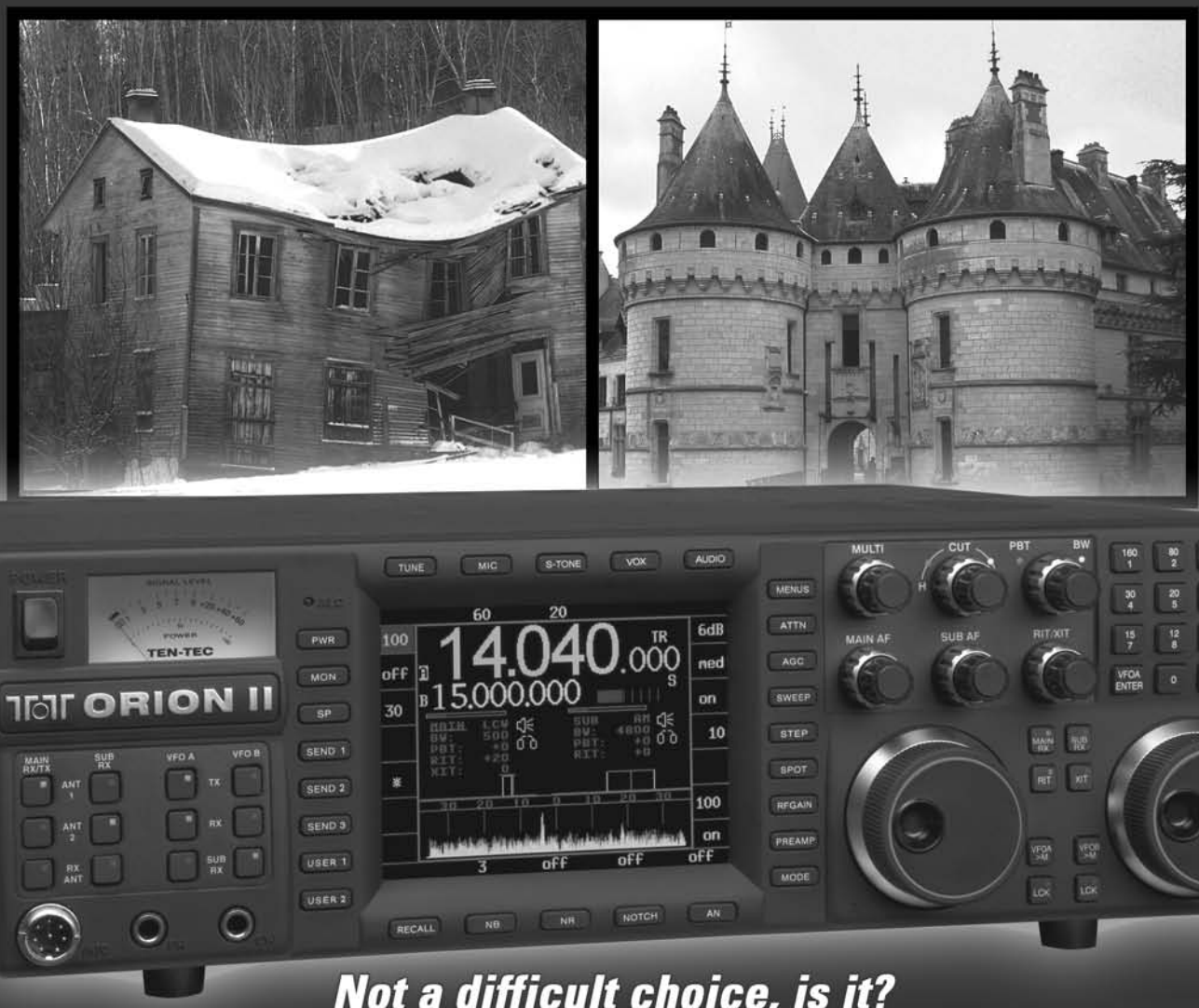

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Editorial

By Carl Luetzelschwab, K9LA

The National Contest Journal

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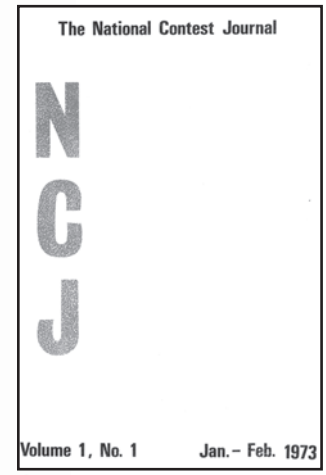
Volume 1, No. 1 Jan.– Feb. 1973

WRTC2006

Following the lead from the July/August 2002 *NCJ* (a special issue for WRTC2002), this issue is a special issue for WRTC2006. We plan to deliver 300 copies of this issue to Brazil for inclusion in the participant's kits. This quantity should also fulfill the needs of visitors and anyone else who would like a souvenir copy.

In this issue we have features about the WRTC2006 stations, a brief history of WRTC, short profiles and pictures of many of the competitors, and a broad overview of what the competitors can expect propagation-wise to the three major contest population areas of the world.



The cover of the very first issue of *NCJ* in 1973.

VHF-UHF Contesting

In his column in this issue, Jon NØJK describes the construction of an 8-element 6m Yagi. This design, adapted from a 2m K5GW design, offers a clean pattern with 14.04 dBi gain. This may be just what you're looking for to start (or improve) your 6m contesting efforts.

Mug Shots

Our new *NCJ* Profiles columnist Scott, W4PA, worked extra hard in collecting photos and short biographies of as many WRTC2006 competitors as possible. We hope this adds a personal touch to the WRTC2006 event.

Contesting from Sri Lanka

Although the N in *NCJ* stands for National, it's always good to have a feature from an international contester. It allows those of us in North America to see contesting from a new and vastly different perspective. Recently, Tom, WW5L, advised me that Kamal, 4S7AB, had won a one-year subscription to *NCJ* at the Fall LSDXA (Lone Star DX Association) meeting, so I asked Kamal to write about his contest experiences from the other side of the world. See his article elsewhere in this issue.

The First *NCJ*

At Dayton this year, N8TR gave me his *NCJ* Volume 1 Number 1 (the January/February 1973 issue). The highlight of this inaugural issue was five pages of scores from the November 1972 SSB and CW SS contests, along with some graphs of score vs rate and top-ten scores. It's interesting to peruse those old calls and note those that are now SKs. It's also interesting to try to match those still active to their current calls. It's even more interesting to see how *NCJ* has grown over the years—from 16 pages per issue to 48 pages per issue with inputs from all facets of contesting.

Volume 1, No. 1 Jan.– Feb. 1973

Contesting from Sri Lanka

By Kamal Edirisinghe, 4S7AB (also KA5MAL)
82B, Walaliyadda
Ellakkala 11116
Sri Lanka.

When I was in Oslo, Norway in 2001, I visited my friend, Halvard Ericsson, LA7XK. He had a summer house with a ham station in the Hvaler Islands in the southern part of the country. Halvard invited me to spend a weekend with his family at the house and said that I could operate his station using my call sign, LA/4S7AB, since the IOTA contest would be taking place at that time.

It was my first contesting experience from Hvaler Islands (EU-061). The operation was casual, using little more than a paper log, but I made 300 QSOs as time permitted. I had prior experience handling pileups from operating in Sri Lanka, so the contest wasn't difficult.

The following year I found myself in Stockholm, Sweden. Among the many Swedish hams I associated with were two remarkable gentlemen: Teemu, SMØWKA and Henryk, SMØJHF. Teemu is a serious contester; Henryk is not so serious, but he enjoys helping those who are.

I used to go to the big SKØUX multi-multi station with Teemu to watch him in action. (At the same time, I used the idle antennas and rigs to talk back to my home folks in Sri Lanka.) Henryk wasn't satisfied with just having me watch, however. At his urging I tried my hand at the CQWW SSB competition in 2001. Henryk offered transport, food and a radio for me to use from SKØUX. I was able to complete about 200 QSOs using my own call, SMØ/4S7AB. Europeans normally travel to DX locations for contests, so my presence in Sweden must have seemed a little odd. It caused a few contest contacts to turn into rag chews when I was asked why I wasn't in Sri Lanka!

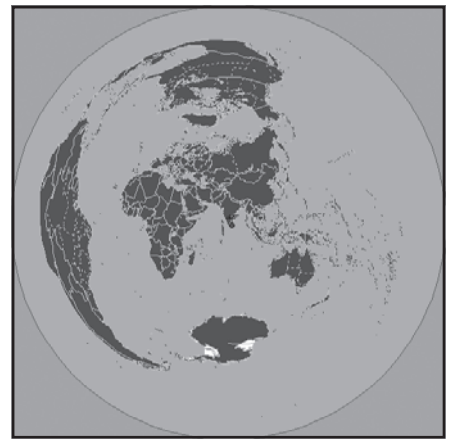
That same year Henryk offered to take me to Musko Island (EU-081) for the IOTA contest. I accepted and made about 300 QSOs using his IC-746 transceiver and a long-wire antenna. All this time, Henryk was doing the hard work of cooking, burying radials and setting up the station. What a nice person!

Not long afterward, my work took me back to Sri Lanka. Would I be able to put my newly gained contest experience to use there?

NCJ Inspiration

During one of my business trips to Richardson, Texas, the Lone Star DX Association president Tom, WW5L, invited me to give a presentation about Amateur Radio activities in Sri Lanka. At the end of the meeting, there were door prizes for the participants. I was astonished to be the winner of a one-year free subscription to *NCJ* magazine. I wasn't sure whether the free offer was valid for overseas subscriptions, but I sent my certificate to ARRL HQ with my Sri Lankan address. Imagine my surprise when I received the January/February 2006 *NCJ* in my mailbox!

I was reading the articles and came across the "Contest Tips, Tricks and Techniques" column by Gary, W9XT. The column grabbed my interest right away. I decided to take part in a contest and put 4S7 on the contesting map. The very next thing I did was check the contest calendar in *NCJ*. The CQ WW WPX SSB was coming up and I had two days to prepare.



The world as seen by 4S7AB (thanks to *DX Atlas*).

Planning

This contest would be a challenge. Not only was propagation likely to be poor, I had to consider the fact that it was lightning and thunderstorm season in Sri Lanka. Due to lightning, my village power can trip off at the main transformer at any time. If it trips off on a rainy night, it might not be repaired until the following morning. My solution was to maintain two batteries on solar-panel chargers for alternative power.

I spent some time exploring the bands in the days before the contest. I worked a few Ws over the North Pole on CW around 1AM. European openings on 20 meters after sunset (6PM local time) created some good pileups as well.

I found that 15 meters was also alive with high-power signals on occasion. South Africans and JAs in particular were heard often around noon.

I noted that Australians came in on 20 meters before sunset, but there are only a handful of operators from that continent. For regional contacts, 40 meters was clearly my best option.

Kamal, 4S7AB, and his shack during the 2006 CQ WPX SSB contest.

After downloading and reading the contest rules, I decided that my main target would be Europe and Russia on 20 meters. The rig was my good old Kenwood TS-930S/AT and the main antenna for the higher bands was the 4-element SteppIR Yagi. I covered the low bands by simply loading my 160-meter vertical. The software I chose was *MixW v2.14*, which has useful features for contesting.

I had the *NCJ* tips and techniques very much in mind while I planned my operation. I wanted to try different S&P techniques, band-change strategies and more. The *NCJ* articles are written with an American bias, so I had to reorganize and adapt the ideas to the operating conditions here in Sri Lanka.

The 4S7AB antennas—a 4-element SteppIR in the back and a 40-meter homebrew Hex Beam in front.

The Contest Begins

When I started the contest on Saturday morning, March 25, I was surprised to find the 15-meter band open to Europe and Russia. I immediately changed plans and continued operating on 15 until I had worked all the stations I could hear.

I jumped to 20 meters and initially tried low power, but soon realized that I needed a bigger signal to get anywhere with the poor propagation. I turned on the FL-2100Z amplifier, even though it only generates about 250W output with its old pair of 572Bs.

Fifteen meters was hot again Saturday afternoon and I worked Europe, Russia, the Pacific and Japan, totaling about 250 QSOs.

Sunday was much the same as Saturday, except for a late-night opening to the US on 20 meters. That opening netted me 48 US contacts.

At the end of the contest I was satisfied to see an overall QSO count of 688 and a claimed score of 687,750 points. I managed to work two new DXCC entities, too.

My next goal is to take part in a CW contest and improve my skills. The superstar for this effort will be my new microcontroller-based Bravo Intellikeyer-1.

The Challenge of Contesting

Contesting is a good way to test your station to its limits while improving your operating skills. Not only do you need to keep your equipment in top shape, you must be highly organized (multi-multi operations in particular need precise coordination and teamwork).

Modern day contesters need above-average equipment if they expect to win. One of the main obstacles for newcomers in my part of the world is the affordability of equipment. Even so, operating as multi-multi teams might allow less privileged hams to pool their resources. This is something that should be encouraged.

Contest organizers should consider new categories to stimulate greater interest. For example: solar powered, wind powered, remote operated, etc. Because the world is moving into alternative energies and new technologies, newcomers would enjoy a variety of options.

Perhaps we could also offer reward points to hams who travel to DX locations to operate. This may motivate contesters to put rarer DXCC entities on the air.

Going forward, I am thinking of organizing a multi-multi effort in a major contest. I invite my fellow contesters to considering traveling to Sri Lanka to operate from 4S7AB. You can e-mail me at **4s7ab@sltnet.lk**. Further information about my station can be found at **www.qsl.net/4s7ab**.

A History of WRTC

Adapted from the WRTC2006 Web site.

The World Radiosport Team Championship—WRTC for short—represents a large gathering of the world's best contesters. WRTC2006 will be the fifth WRTC to take place, and this year's event will bring together contesters from some 35 different countries and all continents in the spirit of competition. Using the same playing field will allow pure skills to determine world champions in two-man teams in the 24-hour nonstop competition in Florianopolis, the state of Santa Catarina, Brazil.

Here is a brief history of the previous WRTCs.

Seattle, USA – 1990

WRTC was born in 1990 under the auspices of the Goodwill Games, which was the brainchild of Ted Turner of CNN fame. The first Games were organized in Seattle, Washington, focusing on areas of cultural exchange, arts and other unique subjects - one of these being Amateur Radio and hence WRTC. Radio Amateurs from the whole world were gathered in an Olympic-style event for competition and camaraderie.

After the first WRTC ended, the top 3 teams were:

1 K1AR, K1DG
2 K7JA, W9RE
3 KQ2M, KRØY/N5TJ

San Francisco, USA – 1996

In 1996, the WRTC traveled to San Francisco, and in the shadow of the Golden Gate the event provided a historical setting and a ticket of continuity. At the same time, the WRTC Steering Team was born in the US to promote the concept, to select future sites and to be of valuable help to future events. This time the WRTC was a pure radio amateur event and assumed the more clearly defined proportions of the Olympics. The WRTC began to emerge as a worldwide radio contest and, in particular, a warmhearted get together of radio contesters.

The 1996 event resulted in the following standings:

1 KRØY/N5TJ, K1TO
2 K4BAI, KM9P/W4AN
3 K6LL, N2IC

This WRTC, with K1TO and N5TJ taking the top spot, started a run in contesting that can only be considered as phenomenal.

Bled, Slovenia – 2000

It was in 2000 that WRTC expanded internationally, as the newly born country of Slovenia - on the sunny side of the Alps - set the stage. WRTC 2000 was another historical event for the benefit of those present as well as those following the event on the radio waves from all corners of the globe. The entire country of Slovenia was actively involved, once again upholding the spirit of WRTC and its Olympic flame. It was a big and successful event in a small country, and those that were there have an experience they never will forget.

The top 3 teams for WRTC2000 were:

1 K1TO, N5TJ
2 RA3AUU, RV1AW
3 K1DG, K1AR

The team consisting of K1TO and N5TJ pulled off a repeat win. Could they do it again at the next WRTC?

Helsinki, Finland – 2002

Honoring the declining sunspot cycle, the 2002 event came only two years after the previous competition, and it was also a celebration of the 50th anniversary of the Helsinki Olympic games of 1952. The Contest Club Finland (CCF) and the Finnish Amateur Radio League (SRAL) jointly hosted the event. While the actual on-site race was organized in the Helsinki area, the week prior to the competition saw these world competitors spending several days together with the entire Amateur Radio population of Finland, as well as spending time with many international guests. Some 2000 people gathered in the SRAL Summer camp (field day). This time 53 teams from 30 countries were competing, with almost real-time score presentation on monitors at the WRTC HQ and on the Internet—Finnish hi-tech at its best.

When the contest ended, the order of the top 3 teams was:

1 N5TJ, K1TO
2 RA3AUU, RV1AW
3 DL2CC, DL6FBL

Indeed, the K1TO and N5TJ team pulled off a three-peat.

Florianopolis, Brazil – 2006

At the bottom of the sunspot cycle the competition will be held in Florianopolis at the Atlantic coastal area in southern Brazil. Forty-seven WRTC and up to 15 multinational multi-single teams (MN MS) with participants from 47 countries, will participate. In line with the qualification principles for the Olympic Games, the competitors have been selected on basis of real performance within their regions. (To encourage participation of ladies and young radio amateurs, a special selection criteria was created for them.) The MN MS Teams will serve as a booster for Amateur Radio in Brazil, and at the same time develop international friendship and contesting experience between the participants.

Due to the poor propagation conditions and the remoteness of the WRTC site from the radio amateur population centers, the competition is providing a linear amplifier and a beam for the 40-meter band in addition to the standard set-up. Further, the rules have been modified to give the second operator a more active role.

Another significant step towards globalization and international friendship is that all teams are not strictly national; there are bi-national teams as well.

Who will be the top three teams for WRTC2006? We'll know the outcome soon, but it will definitely not be K1TO and N5TJ. Unfortunately, both gentlemen have business commitments that have prohibited them from participating.

NCJ

The Inverted-W and Daddy Longlegs Antennas

Dick Bingham - W7WKR
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Stehekin, WA 98852-0024

The Inverted-W Antenna

Over the years, many interesting configurations for high-performance 160/80 meter antennas have been published and used by serious DXers and contesters. Most hams, however, find such systems beyond possibility due to restrictive covenants, material cost and other complicating factors.

My home, located in "The Alps of America" five miles south of the North Cascades National Park, provides a real challenge. Here, NW/SE-running ridges rising sharply 7000 feet above my antennas restrict take-off angles (TOAs) to 25 degrees (or more) toward Europe. As a result, any efforts directed toward using an array of verticals to achieve useful gain and low TOA is a waste of time, effort and money.

For years I have used a tilted Half-Square on 160 meters because this configuration has useful gain at a TOA of 25 degrees and higher. The radiation pattern of this simple end-fed antenna limits me to working VE1/2/3, the East Coast and all US-points in between.

During the 2004 and 2005 160 meter seasons, I was able to get within one letter in my call of completing a QSO with England, and this year I heard a repeated "QRZ W7" from Germany. At 100 W, these "Close Encounters of the DX Kind" are frustrating and have forced me to re-examine my antenna situation.

Most sources of HF antenna design usually focus on techniques to achieve gain at low TOAs (25 degrees and below) that are useful for working DX. Such designs do not fit my location-specific need to get useful power radiated at higher TOAs. As a result, many wire antenna configurations (few ended up being useful) were sketched on paper and the survivors of this process evaluated using antenna modeling software.

The winning design uses two interlaced Inverted-Vee antennas whose wires are in the same plane. The picture in Figure 1a best describes why this configuration was named the Inverted-W (I-W for short). The wire connecting ground (X = Y = Z = 0) to the left end of the right short horizontal wire represents the end-feed, SPDT-switch and tuner circuitry.

When constructing a wire antenna supported by a rope catenary suspended between trees, it is important to minimize system weight and large surface areas upon which snow and ice can accumulate. The biggest contributors to this problem are ladder line and coaxial cable that are commonly used to feed half-wave antennas like the Inverted-Vee and dipole.

Using an end rather than center/apex feed approach for supplying power to an Inverted-Vee (I-V for short) solves several design problems:

1. The weight and surface area of ladder line, coax cable and baluns is eliminated
2. Antenna pattern distortion due to unbalanced feed line currents is eliminated
3. Antenna pattern switching is simplified

End feeding an I-W can be easily accomplished by using a high-impedance antenna tuner installed on a support post positioned at the center of the antenna as shown in Figure 1b. The tuner, working against ground, is switched to feed only one of the two I-V end-wire sections that are located close together at the center of the array. The end wire not being fed is floated and that I-V section becomes a parasitic element. By selecting which of the two end-wires is fed determines the direction of the antenna radiation pattern (for example, 0 degrees or 180 degrees).

At 1.825 MHz, a computer model for an I-W antenna predicts gain to be -0.04dBi with a F/B ratio greater than 13 dB at a TOA of 25 degrees (see Figures 2a and 2b). Using the same modeling conditions, a 160 meter Tee antenna supported at the same height as the I-W and using 64 quarter-wave radials positioned 0.25 inches above ground has a peak gain of -0.48 dBi (see Fig-

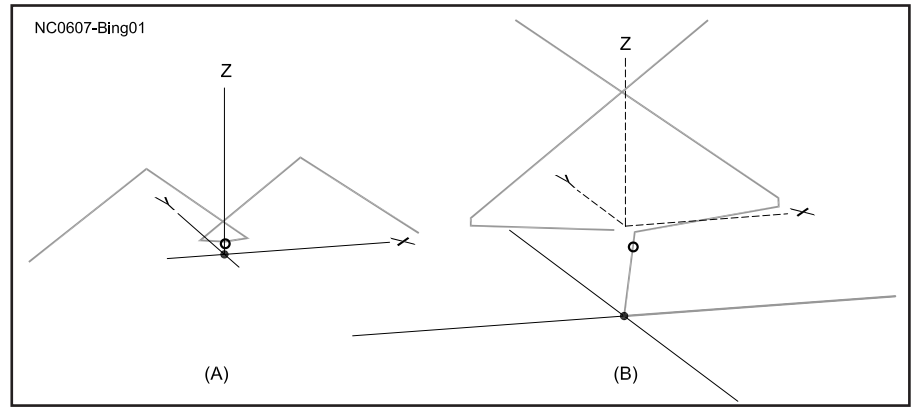


Figure 1—(A) Overall view of the Inverted-W antenna. (B) Close up of the feed point portion of the Inverted-W antenna.

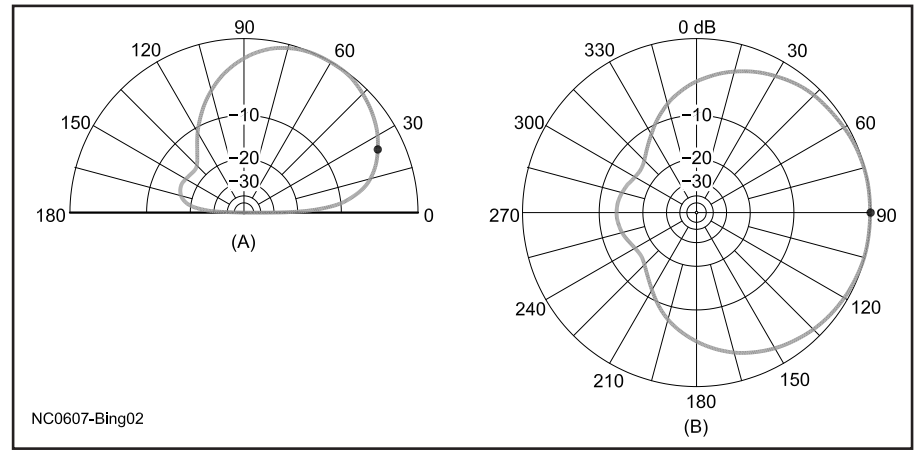


Figure 2—(A) Elevation pattern of the 160 meter I-W antenna. (B) Azimuth pattern of the 160 meter I-W antenna at T0A = 25°.

ure 3). Note: Apex support-points are spaced 0.25L apart for the I-W.

Starting at a TOA of 25 degrees and proceeding toward 90 degrees, the I-W antenna gain continues to increase and peaks around +2.2 dBi at 65 degrees. The Tee antenna gain peaks at 25 degrees and decreases toward 0dBi as TOA increases. With both antenna gains almost equal at 25 degrees, the F/B ratio of the I-W and its increasing gain at higher TOA make it the better choice for my location.

The feed impedance for the I-W and Tee antennas is approximately1600 and 26 ohms, respectively. If the feed point ground currents of these two antennas are compared for the same power level, the Hi-Z feed current is about 13 percent of the Low-Z feed case. Given these results, it seems reasonable to assume that system losses for a modest ground system should be markedly lower for an end fed I-V antenna compared to that of a 160 meter Tee antenna. Figure 4 shows the VSWR for the I-W antenna, and Figure 5 shows it for the Tee antenna.

The I-W built at W7WKR is supported by rope suspended between two trees such that the apex of each I-V element is about 80 feet above the ground. Table 1 gives the pertinent dimensions.

Wires slope downward from each apex support point – one wire slopes toward the outside and the other wire slopes toward the center of the antenna (see Figure 1a to help visualize this). Each outside leg wire end is secured to an insulator mounted near the top of a 6 foot tall post. The two inner leg wire ends are connected to separate insulators mounted on a 10 foot tall central post.

Ground is established by using a 3 foot by 10 foot piece of metal roofing laid directly on the ground and connected in parallel with an 8 foot rod embedded in the local poorly conducting moist sand/rock soil. The antenna tuner, a parallel combination of a 49 μH inductor and a 125 pF variable capacitor, is mounted inside a plastic storage box and attached below the wire end insulators on the center-post. The cold end of the L-C tuner is connected to ground using a length of wire.

K2AV suggested adding extra radials to the ground system described above to reduce losses. Computer modeling of the antenna, using four 25 foot radials positioned close to ground, showed the gain was improved by 0.6 dB to that shown in Figures 2a and 2b.

The hot-side of the L-C network is connected to the common connection of a SPDT relay. One of the end wires attached to the insulator on the central post is connected to the normally open relay contact and the other end wire to the normally closed contact. Switching the relay reverses the radiation pattern of the antenna.

Due to limitations of the antenna modeling software to accurately model ground, the predicted feed impedance is used only as a starting point from which to calculate the inductor tap point discussed below.

A match to 50 ohm coax was achieved by connecting the coax shield to the ground side of a parallel connected LC network and the center conductor to an appropriate tap point on the inductor. The relationship between the tap point is given by R1 = Rg times N squared, where N is the turns ratio of the total number of inductor turns to the tap point turns, Rg = 50 and Rl = 1600. If the VSWR at the calculated tap point is too high after adjusting the variable capacitor, move the tap up or down a few turns and repeat the tuning process until the lowest VSWR is achieved.

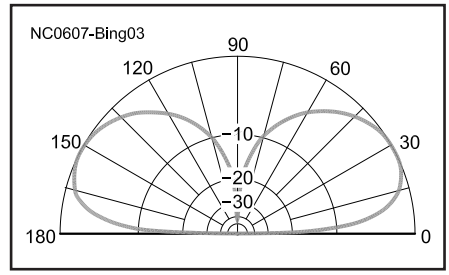


Figure 3—Elevation pattern of a 160 meter Tee antenna fed against 64 quarter-wave radials.

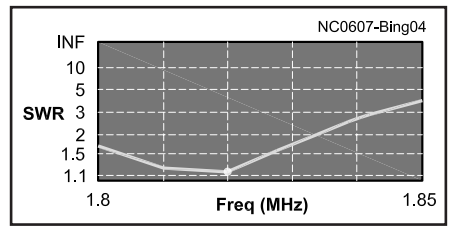


Figure 4—VSWR for the 160 meter I-W antenna.

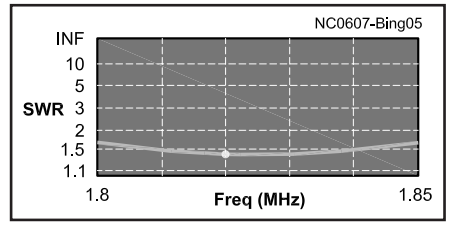


Figure 5—VSWR for the 160 meter Tee antenna with 64 quarter-wave radials.

Compared to a previously used 160 meter Tee antenna with twenty quarter-wave radials, the performance of the I-W has been impressive and close to the model predictions. Tests with VE7BS – located to my NW – have demonstrated F/B ratios of two S units. Switching the antenna pattern between NW and SE while listening to KL7 and JA shows F/B ratios in excess of two S units.

Using 100 W to the I-W antenna during the December 2005 Stew-Perry Contest, I was able to work P4ØTA and NL7Z in the favored directions yet barely hear them off the back of the array. For me, the most important result of switching to the I-W antenna is the ease of working DX to the NW/SE and running CA stations in contests. Contesters should find this antenna's radiation pattern switching and near (higher TOA) / far (lower TOA) coverage very useful.

Hams who may be tempted to use this design but have no tall trees can construct an I-W if a 150 foot tall tower is available. The two designs – tree or tower support – will be slightly different due to the interactions between the tower and the antenna wires.

K2AV has correctly pointed out that "using *NEC-4*, modeling with towers around usually shows extra loss versus tree-supported models. Further, the extra loss can be slight (approximately 1dB) or more than 3dB depending on the situation." So with this warning, be aware that a "tower supported version of the tree-supported I-W is very much a Your-Mileage-May-Vary proposition.

Those interested in a tower-supported version of this antenna can supply me with the physical details of existing antennas/towers/soil in exchange for a site specific I-W design based upon my lim-

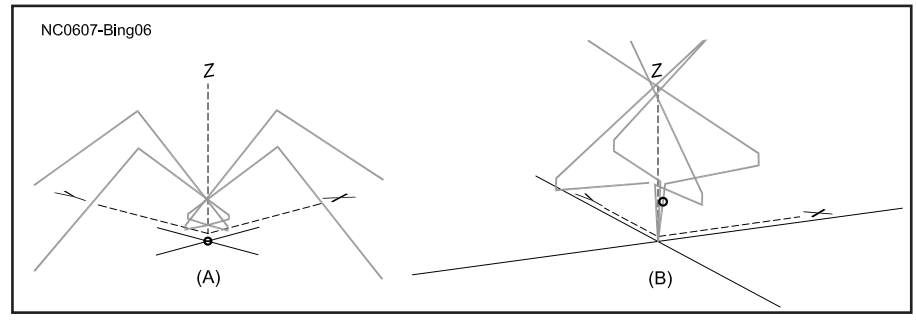


Figure 6—(A) Overall view of the Daddy Longlegs antenna. (B) Close up of the feed point portion of the Daddy Longlegs antenna.

Table 1

Dimensions of Rope Catenary Suspended Between Two Trees

Wire position	*Wire length (ft)*	*Top of wire (ft)*	*Bottom of wire (ft)*
Outer leg	127.5	80	6
Inside leg	111	80	13
Fold-back leg	19	13	6

Table 2

Dimensions of Rope Catenary for DLL

Note: Apex support points are spaced 80.6 feet apart

Wire position		*Wire length (ft)*	*Top of wire (ft)*	*Bottom of wire (ft)*
Outer leg —	3.8 MHz	62.25	42	6
	3.5 MHz	65.5	48.75	6
Inside Leg —	3.8 MHz	56.6	42	9
	3.5 MHz	59.75	48.75	9
Fold-back Leg		6.25	9	6

ited modeling capability (non *NEC-4*).

I want to stress the following important features of the tree-supported Inverted-W antenna:

1. Overall simplicity
2. Low visibility when using "local" trees
3. Low cost
4. Lightweight
5. Reasonably low support points
6. Significant gain over similarly supported dipoles/verticals at TOA of 25-degrees and higher
7. Minimal ground system
8. Simplified feed and antenna-pattern switching

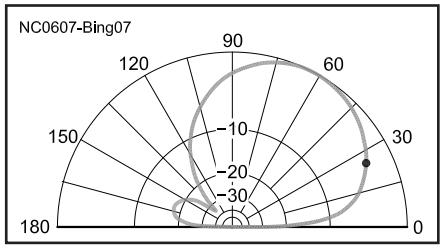


Figure 7—Elevation pattern of the 160 meter DLL antenna.

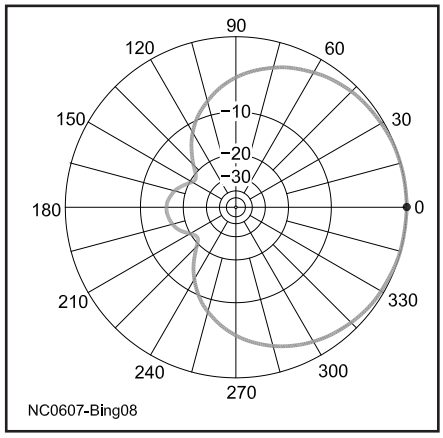


Figure 8—Azimuth pattern of the 160 meter DLL antenna at TOA = 25°.

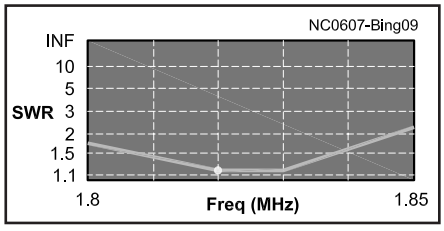
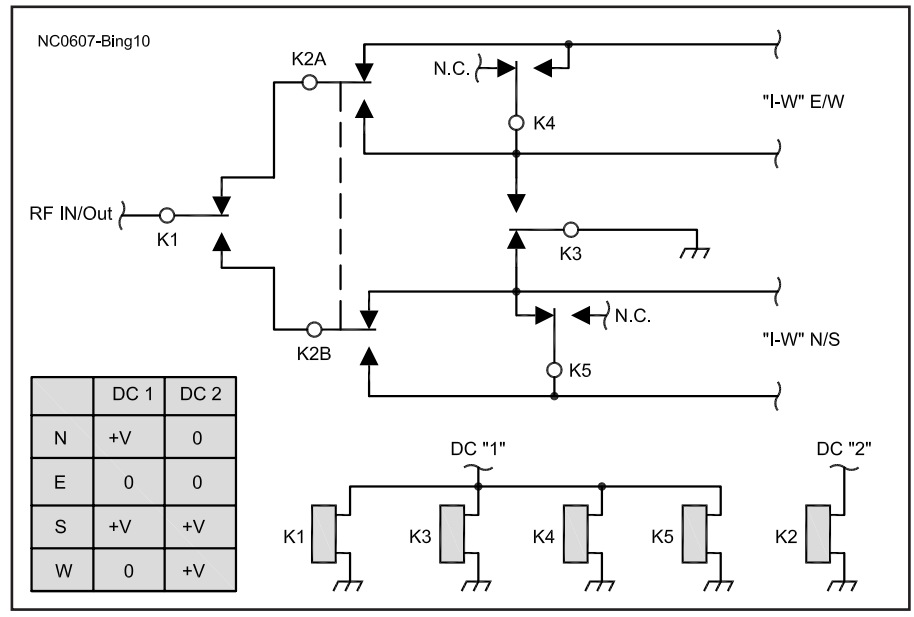


Figure 9—VSWR for the 160 meter DLL antenna.

The Daddy Longlegs Antenna

Now that we've examined the Inverted-W, it is time to deal with combining two I-W antennas orthogonally to make a new antenna whose visual appearance is similar to that of a Daddy Longlegs spider (DLL for short). The DLL antenna design, like the I-W design, makes antenna pattern switching (say E/W for a single I-W and N/E/S/W for the DLL) an easy task because all switch-



	DC 1	DC 2
N	+V	0
E	0	0
S	+V	+V
W	0	+V

Figure 10—Antenna beam steering switching relays and direction selection. All relays shown in the normally closed position.

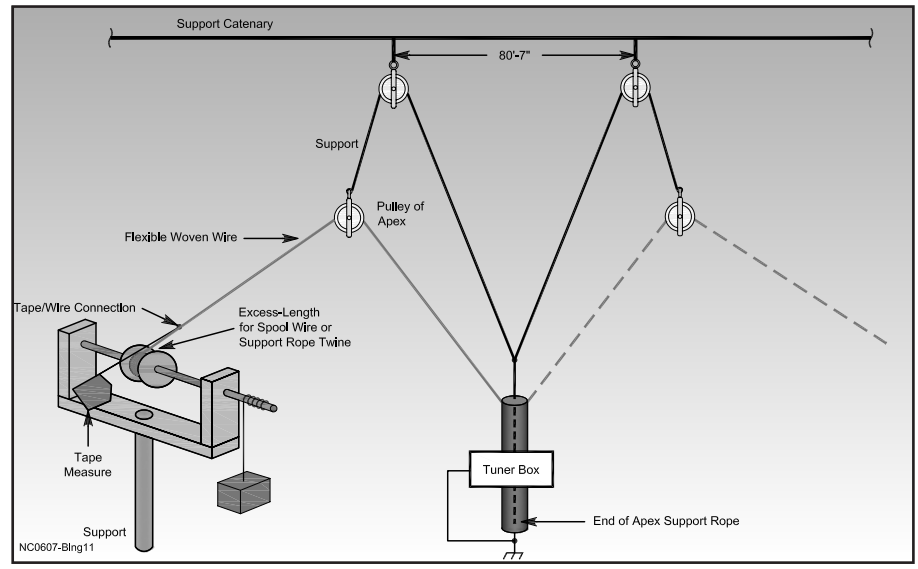


Figure 11—Mechanical tuning for 80/75 meter I-W or DLL antennas.

ing is performed at the center of the array without the need for phasing lines. Figure 6a shows a DLL antenna and Figure 6b details the feed point region.

In Figure 6b, the circled wire connecting ground to the end of the fed wire represents the end feed and tuner circuitry. The other two wires that are shorted to ground are the end wires of the orthogonal I-W that is not used.

Like the I-W antenna, the center of the array (where the four inner legs of the DLL are brought together) is where all switching is performed. The wire ends of the I-W section orthogonal to the desired end fire direction are grounded to decouple that I-W from the driven array. How easy can it get?!

Figures 7, 8 and 9 show the predicted elevation pattern, the azimuth pattern, and the VSWR, respectively, of a 160 meter DLL. Figure 10 details the beam forming switching circuitry. (I use "E" as my default direction.)

A DLL antenna for 80/75 meters presents problems because the beam pattern is severely distorted when a DLL designed for CW at 3.5MHz is operated at 3.8 MHz for SSB. One proposed solution using remote mechanical tuning looks quite promising because it, like the antenna pattern switching, can be done from the center of array. See Figure 11.

Antenna resonance can be maintained for frequencies between 3.5 and 3.8 MHz by the action of raising all apex supports to 48.75 feet (3.5MHz) or lowering them to 42 feet (3.8 MHz).

Accomplishing this with fixed end points requires up to 12 feet of wire length variation to maintain resonance at frequencies between 3.5 and 3.8 MHz. This length variation can be easily provided by securing a 25 foot measuring tape (insulate the case) to each fixed outside tie point and connecting the tape to the end of the antenna element. As the length of each Inverted-Vee section is changed (by raising/lowering the apex support height), the wire flows smoothly through pulleys located at apex support points thus allowing the tape to flow into or out of the measuring tape body. This action maintains wire length symmetry throughout the array. Table 2 provides wire lengths and array dimensions.

Figures 12a, 12b, 12c, and 12d show antenna gain and VSWR predictions at a TOA (take-off angle) of 25 degrees for 3.5 and 3.8 MHz.

This 80/75 meter DLL design should fit on real-estate owned by many hams who have access to tree support rope tie points at 55/60 feet and should be quite useful for Field Day operations. I should mention that the gain shown in all gain-related figures is based on 'poor' soil conditions (my conditions) and is very conservative. This gain is increased by 1.5 dB when 'average' soil conditions are considered.

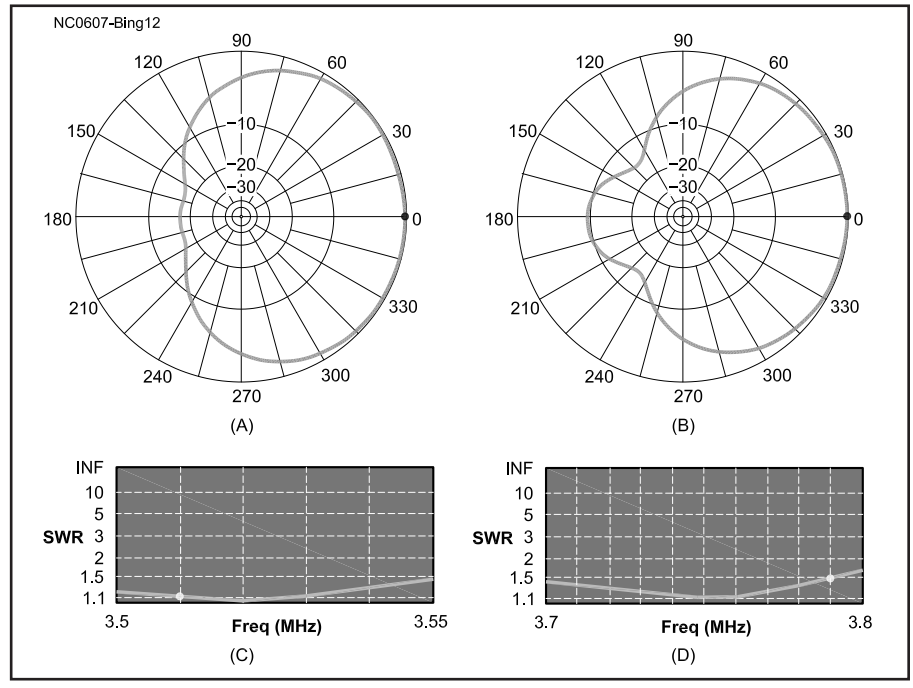


Figure 12—(A) DLL antenna gain at 3.51 MHz with the apex at 48.75 feet. (B) DLL antenna gain at 3.795 MHz with the apex at 42 feet. (C) DLL antenna VSWR with the apex at 48.75 feet. (D) DLL antenna VSWR with apex at 42 feet.

Like the 160 meter I-W antenna, a Hi-Z antenna tuner is used to end feed the DLL. SPDT and DPDT relays are used to connect the selected end-wire to the tuner, float the other section of the active I-W and ground *both* inside ends of the I-W antenna that is orthogonal to the fed section.

A 50 ohm match is achieved by tapping up on the inductor and adjusting the C for a 1:1 VSWR at the desired frequency. VSWRs lower than 1.5:1 should be expected over a 30 KHz portion of the band. Using a remotely tuned capacitor in the antenna tuner should make it easy to keep the 80/75 meter VSWR close to 1:1 as the array is mechanically "tuned."

I hope those hams who aspire to more effectively compete in contests and work DX will try a DLL antenna – or at least half of it (the I-W antenna). Hopefully, they will be as pleasantly surprised and rewarded as I have been.

I would like to thank Bob Eldridge, VE7BS, for his review of the manuscript and running on-air checks of the 160 meter I-W. Thanks also go to Guy Olinger, K2AV, for his generous gifts of time and knowledge of antenna computer modeling to critique my work. He detailed my errors and exchanged corrected models with clear reasons for the "Do's and Don'ts" one needs to follow to correctly model HF antennas. Thanks also go to Steve Ireland, VK6VZ, who volunteered to convert several pencil drawings to a digital format.

NCJ

The J7OJ Story - Keeping the "OJ" Spirit Alive

By George Wagner, K5KG / J75KG

It has been two years since Jim White, K4OJ, became a Silent Key. A J7OJ license was first issued in February 2004 as a K4OJ Memorial License by the Dominican PTT, and again for the 2004 CQWW CW Contest and the 2006 ARRL DX CW Contest.

The May/June 2004 *NCJ* article described the 2004 J7OJ ARRL DX CW contest operation in great detail. This article will contrast our 2006 J7OJ effort by highlighting the primary differences in the two operations.

J75KG Operations

Since 2000, I have been going to Dominica to operate contests and help satisfy a never ending thirst for J7 QSOs. The first operation was in July 2000 for the IARU contest and then again in November for CQWW CW. In all, I have conducted nine operations from the Sea Cliff QTH — a small group of rental cottages perched on a bluff 160 feet above the Atlantic Ocean on the north east coast of the Nature Isle.[1]

During these excursions to J7, I have formed friendships with many of the local hams, and the strongest bond of all is with Lambert Charles, J73LC. Lambert and I have become like brothers, and are always finding ways of helping each other. His assistance with logistics, transportation and licensing are invaluable for carrying out our trips. In addition, a local fellow, Donford Harper, who is not a ham, has become an important part of our visits. Donford is an electrician by trade, but most of all he is an accomplished tree climber who is always ready to give us a helping hand by hanging hooks and pulleys in trees and assisting with station and antenna setup and tear down.

A number of great operators have accompanied me on these journeys; they include: Fred, NA2U; Paul, K5AF; John, W4IX; John, K3TEJ; Ron, KK9K; Jim, WI9WI; Derrick, VE4VV and Charlie, K1XX. At last count, we have netted in excess of 130 thousand QSOs from our various operations and many call signs.

2004 ARRL DX CW

In the 2004 ARRL DX CW contest, we had three operators – K5KG, K3TEJ and W4IX – and entered as M2X. The results were astounding, as in the final tallies, PJ2T had beaten us by a mere 2.1% with their permanently installed station vs. our Field Day set up.[2] We were proud that our attention to moving multipliers had paid off, as we beat both PJ2T and FS5UQ in mults. Here were the 2004 results.

M2X	*Score*	*QSOs*	*Mults*
PJ2T	8,091,693	7773	347
FS5UQ	8,084,736	7744	348
J7OJ	7,924,350	7547	350
PJ4R	7,612,425	7355	345

2006 ARRL DX CW

Our approach to working the 2006 ARRL DX CW contest was going to be similar to our 2004 operation, but with a few important differences. We decided to attempt an MM entry if our three station setup was fully operational by the time the contest began, and we would have five ops — K5KG, W4IX, KK9K, WI9WI and K1XX — and concentrate on

Keeping the Spirit Alive

It is our mission to keep the spirit of OJ alive. It had been two years since our beloved friend, Jim White, K4OJ, passed away at an untimely age. On the morning of February 12, 2004, his mother, Ellen, had the courage to write this sad but beautiful tribute to her son:

"Dear friends:

In September of 2002 K4OJ sat at this computer and wrote a poignant obituary honoring his father, W1CW, who had died that very morning.

On this afternoon of February 12, 2004, it is my reluctant turn to sit here and tell you that Jim did not survive yesterday's surgery. He left us about 11:30 a.m. this morning following liver failure after the somewhat risky heart valve replacement.

Just this past weekend he had a tremendous time operating the FOC Marathon and producing a splendid accounting of himself. This was just one more achievement during his lifetime of fun in and service to Amateur Radio and, in particular, the Florida Contest Group of which he was the first president. His operating abilities were manifest and he almost always was the first one to volunteer his help, in spite of his declining physical abilities.

I know many of you will share my loss.

Ellen, W1YL/4 'ln'"

For the many who knew "OJ", you shared our sadness of his passing. You understood Jim's passion for ham radio and respected the many contributions he made to our exceptional hobby. For those who didn't know Jim, let me lay out some of the many reasons why he was such a special person. Jim came from America's ham radio family; his grandfather was W6APG, his mother was, Ellen, W1YL, and his father was, Bob, W1CW. "Jimmy" was their only child. Following a stint in Honolulu where Bob and Ellen both worked as broadcast engineers, they worked at the League from 1952 to 1978. Bob, sometimes known as "Mr. DXCC", ran the DXCC desk and was instrumental in establishing DXCC as the prime DX award it is today. As deputy communications manager, Ellen was responsible for contests, awards and many administrative functions of the League, including public relations and the HQ station, W1AW. Jim shared a love of ham radio at an early age, and was first licensed as WA1NNC.

Jim formed the Florida Contest Group (FCG) in 1994 and served as president for more than four years.[4] Jim's obsession with the color orange and maybe Florida oranges would explain his "OJ" call, his orange truck, the orange FCG logo and, of course the sea of orange shirts that flock to Dayton's contest dinner each year! It was Jim who coined the term MULTS ARE. Jim was a highly skilled and accomplished operator with an extreme enthusiasm for contesting. He was famous for promoting every contest to generate competition and participation, especially the Florida QSO Party.[5] Who can forget his incessant countdowns and relentless nerve-wrenching postings on the contest reflector up to the final hour of the FQP?

Keeping the spirit of Jim alive has not only been the mission of our J7 operations in Dominica, but for others as well. Other operations to use the "OJ" moniker have been 6Y4OJ by NP4Z, WE4OJ by WC4E and K4OJ/m by N4KM and KØLUZ. And who can forget the "OJs" that we often hear at the end of contest QSOs?

better antennas, especially for the low bands.

As with previous operations, we flew to J7 on the weekend before the contest. The night before departing for J7, we had a burgers-'n-brew gathering of local contesters at our home in Sarasota. On hand were Ron, KK9K, Jim, WI9WI, John, W4IX, Dick, K4GKD, Bob, N2RM and Dan, K1TO. Early the next morning, KK9K, WI9WI, W4IX and I departed for KP4. We met up with Charlie, K1XX at the San Juan airport, and departed for J7 on time and without incident. Lambert and Donford met us on our arrival in J7 and with only minimal delays in customs, were on our way to Sea Cliff. By the time we arrived, it was late in the day, so we quickly erected an off center fed dipole on a bamboo pole and set up an IC-756Pro2 for Jim to operate the NA Sprint as J79WI. Although I don't have his final count, Jim did well in the Sprint and will probably go down in history as the first J7 to participate in the Sprint. That should be worth an award of some kind!

We spent the first two days setting up stations, antennas and computers. Three full stations were set up with amps,[3] and a single K2 was used barefoot. Ron, KK9K, being the group's low band junky, came up with the following antenna plan:

- 160 meters – single 160-meter inverted L with 16+ radials
- 80 meters – two phased 80-meter inverted Ls, each with 16+ radials
- Two K9AY pennants and a K9AY receive antenna distribution system
- One 500 foot bi-directional Beverage

In addition, we acquired an unused 4 element 10-meter Yagi from the WC4E antenna farm. Once everything was set up in the field, and following the consumption of numerous 807s and a probably a gallon of sunscreen, the following antennas became a reality:

K1XX and W4IX mounting the C3 on a steel shipping container.

- 160 meters – single 160-meter inverted L with 16+ radials
- 80 meters – two phased 80-meter inverted Ls, each with 16+ radials
- 40 meters – 2-element wire delta loops
- 10 meters - 4-element Yagi up 40 feet on a bamboo pole
- C3 tribander on a 20 foot aluminum pole strapped to a steel shipping container
- A4 tribander on a 30 foot bamboo pole
- K9AY pennant and a K9AY receive antenna distribution system
- 500 foot Beverage to the north

Charlie, K1XX, proved to be an invaluable member of the team by applying his graduate-level understanding of computer science to make the *WriteLog* network work without a hitch. Charlie achieved in an hour what would have taken me two days to work through.

Once everything was set up, we spent all of our waking moments running pileups and satisfying that never-ending need for J7. The low band antennas proved to be magnificent. We had better, deeper 80 and 160-meter runs during the week than I have ever experienced from J7. One night I ran several hundred Euros and even a few Asians on 160 meters. QRN was generally low, and the receiving antennas made listening even better. The high bands were another story, and we made only a few Qs on 10 and 12 meters during the week. Shortly before the contest began on Friday evening, however, we worked 3Y0X on 10-meter SSB. We all worked him in succession, and the operator commented about his J7 pile up!

All of our equipment performed faultlessly, with the exception of Charlie's MLA 2500 which gave up its power transformer on Thursday afternoon. Presumably, the line voltage and 50 Hz frequency were too much for it. We replaced this amp with Lambert's antique Heathkit SB-230. This amp, which runs only about 300 W, had ironically come to our rescue previously when it replaced another MLA 2500 that failed back in 2000. Ron's K9AY receiving antenna distribution box was horribly smashed in the air shipment to J7, but performed well, nevertheless.

New additions to the J7 shack this year were MicroHam CW Keyers for each station. These nifty little keyers pro-

K1XX, WI9WI and KK9K (rear) operating.

The J7OJ team. Left to right: K5KG, WI9WI, K1XX, W4IX, and KK9K.

vided the necessary USB interface for radio control and keying and, when used with *WriteLog*, performed faultlessly. Joe, W4TV, who is the North American rep for MicroHam had introduced me to this device for my VK2GC CQWW CW operation in 2005, and I have been using them ever since.

Prior to the start of the contest, we ran a one hour on-the-air test of the networked stations. We did this to iron out any last minute adjustments to the stations, logs, CW messages, antenna switching, and to test for any inter station interference. We also tested our methods for moving stations from band to band through the use of "network gab". We have been using a pre-contest test run of the full station configuration for the past few contests, and I have become a real believer in its value in shaking out last minute bugs and quirks in operating procedures.

We began the contest on schedule, and ran through the entire 48 hours without any notable problems. Jim had set up operator schedules that got us off to a good start and, fortunately, no equipment or antennas failed during the contest. Tables 1 and 2 provide a few statistics that contrast 2006 results with those of 2004.

Solar conditions had diminished from 2004, and this clearly accounted for the reduced number of QSOs, especially on 10 meters. It is interesting to note that with two additional operators and improved antennas on 160 and 80 meters, our numbers were not significantly higher than 2004. On the other hand, maybe an additional 156 QSOs on 160 meters is significant!

We were quite disappointed in the high number of dupes that clogged the log. We had learned after the 2004 operation that there had been numerous false postings of our call — J7ØJ, J7ØOJ, J7OM, J7OA, J7JZ — and this, no doubt, accounted for this high percentage of dupes again this year. (Could we just once have a contest without packet spots, like in the good old days?)

We concentrated heavily on working multipliers. Without access to a packet spotting network on either a 2-meter cluster or the Internet, we were left to our own devices to scan the bands looking for multipliers and moving stations from band to band. We even went so far as to periodically transmit our operating frequencies on alternate bands. I found it to be true in this CW contest and many others that requests to QSY to another band are frequently met with dead silence. I have come to believe that some operators just are not all that good at copying CW or understanding the importance of a request to QSY.

Table 1

Band	2004 QSOs	2006 QSOs	Difference	2004 SEC	2006 SEC	Difference
160	479	635	156	54	56	2
80	1,021	1,049	28	59	58	-1
40	1,406	1,434	28	58	58	0
20	1,539	1,814	275	59	59	0
15	1,653	1,747	94	58	58	0
10	1,546	452	-1,094	58	51	-7
Totals	**7644**	**7131**	**-513**	**346**	**340**	**-6**

Table 2

	2004	2006	Difference
Number of QSOs at end of 1st hour	292	201	-91
Number of QSOs at end of 24th hour	3850	4842	992
Number of QSOs at end of 48th hour	8043	7680	-363
Final claimed QSOs	7644	7131	-513
Percent of dupes	5.2%	7.7%	2.5%
Final claimed mults	346	340	-6
Claimed score (millions)	7.934	7.273	-0.661

Acknowledgements

This article would not be complete without calling attention to the special contributions of each team member. Kudos are awarded as follows:

• Ron, KK9K — Low Band Junky Award for his design of the 80 meter phased inverted L's and low band receiving antennas

• Jim, WI9WI — Task Master Award for establishing a contest operating plan and making us stick to it

• John, W4IX — Iron Butt Award for making the most overall QSOs during the 10-day operation

• Charlie, K1XX — Computer Geek Award for giving us a bullet proof network

In summary, we were extremely pleased with our 2006 operation, and plans have already begun to emerge for next year's running of the ARRL DX CW contest. We believe that we can someday win the plaque, especially with OJ's spirit watching over us.

Notes

[1]**www.dominica-cottages.com/**

[2]All of our J7 operations are environmentally friendly, no impact field day style operations — nothing is set up in advance of our arrival, and when we leave, nothing is left standing.

[3]IC-756Pro2, an Acom 1000, an IC-756Pro2n an MLA 2500 and an Omni VI + LK500.

[4]Thanks to Perry, W1UED, Dave, K1ZZ, Dan, K1TO, and Tom, K5RC, for background information on the White family.

[5]The idea for a Florida QSO Party was conceived by Dan, K1TO. NCJ

WRTC 2006 Stations

Adapted from the WRTC2006 Web site.

To level the playing field, each WRTC2006 station will consist of the following:

Main Power

Each WRTC2006 station will have 220Vac/60 Hz power. The competitors will have to remember to change their rigs to 220V!

Antennas

Each WRTC2006 station will have three antennas available to cover the WRTC2006-allowable bands (80, 40, 20, 15 and 10 meters).

- 80 meters: Wire antenna
- 40 meters: Two-element shorty beam with a boom length of 22 feet. The longest element is 42.5 feet in length.
- 20 through 10 meters: ACOM LS86 8-element LPDA (Log Periodic Dipole Array) with a 21-foot boom. The longest element is 36 feet in length.

A WRTC2006 tower/antenna Installation.

The accompanying photo shows the tower/antenna installation. The three coaxial feed lines from these antennas will terminate in a 3-way manual antenna switch.

Towers

Each WRTC2006 station will have a 50 foot guyed tower. The two directional antennas will be mounted to a 10 foot steel pipe coming out of the rotator.

Amplifiers

Due to the distance from the Florianoplis area of Brazil to the main contest population areas of the world, and the fact that WRTC2006 will, for all intents and purposes, be run at solar minimum, each WRTC2006 station will have an ACOM 1010 linear amplifier (700W PEP/500W CW). NCJ

My Last DXpedition - Typical, Typical!

John W. Thompson MD, K3MD
Jwt105j@yahoo.com

My last DXpedition was to St Johns in the US Virgin Islands. This was for the CQWW CW contest over the Thanksgiving vacation period and it was my third portable DXpedition to the Virgin Islands in the last 10 years. The island is mostly a national park. It is 9 miles long and the roads (all 3) are better paved than those on Tortolla and St Croix.

The flight to St Thomas and the ferry ride to the island were uneventful. The DXpedition was arranged by John, AD8J, who is a very accommodating travel agent. The QTH was a small villa at about the 1000 foot level, accessible by jeep, on the south side of the second highest peak on the island (very near the peak). There were very good views to the east. The wooden decking on the front of the cottage was custom-built for a DXpedition antenna.

For this type of operation, even if you are not compulsive, which is highly unlikely if you are a contester, you *must* have a checklist! But even with a checklist, things still never go quite as planned.

For instance, my original plan was to bring along a lightweight transistorized linear from Ameritron, but while testing it before my departure I discovered that it tripped the ground fault on all three lines in the basement. That was unfortunate because at 22 pounds it would have been much easier to transport than the 30-pound AL-811. Nonetheless, I packed the AL-811 as checked baggage using the AD8J method of putting underpants (clean) or t-shirts around the tubes. You just after to remember to take the packing out before operating the linear!

The KP2/K3MD operating position.

Setting Up

We arrived two days early and began assembling the station. I set up the amplifier and the K2/100 transceiver the first night I was there. The following day I installed the Spi-Ro vertical antenna at the bottom of the wooden deck and ran it up to the top and across—a total of 44 feet in length. I brought lots of radials made of number 24 magnet wire.

Could I have used a better antenna? Sure. I used to have a TH-3JR Yagi broken down to fit in two 6-inch PVC tubes with screw caps along with a 12-foot 1 inch aluminum mast. That antenna wasn't available because it had since been converted to non-broken down Field Day use. When traveling light, you have to make do with what is at hand.

When I tested the K2/100, I discovered that it would only operate in the tune mode—*period*. This was the second time it had quit working on a trip. Fortunately, I had picked up a Yaesu FT-857D as a backup. This was much better than my previous backup, a Ten-Tec Scout (with no linear relay control).

The FT-857D seemed to work flawlessly. I then set up the keyer/computer **Y** phono plug adapter, only to find that the external keyer would not key the rig! The keyer worked fine with the continuity tester and meter, but not with the rig. I could have solved the problem by using a 12-V battery and relay from RadioShack, but I was too lazy to make the 2-hour trip to the neighboring island. Well, I should have checked that before I left.

I had to re-solder the connector on the mini-plug going to the rig for computer keying (a PCMPIA port-com port adapter). I always bring a small soldering iron and solder, and I bring at least two COM port CW adapters (I also bring an LPT adapter for **CTWin** in case *WriteLog* decides not to work. Yes, this has happened!). I don't bring a spare for the laptop, though.

I managed to make everything work. I used the **ALT-K** command for any text that I had to send, turning off the built-in keyer and memories. One can use the built-in keyer and memories and send the calls using a hand key. This arrangement is okay for Field Day, but it will slow you down during a DX contest.

Hot Amplifiers and Hotter Antennas

A few hours on the air with the trusty AL-811 amplifier with its two 572Bs (a modification to the stock AL-811 mentioned in my article "My Linear Problem" that appeared in the January/February 2005 *NCJ)* revealed that my signal was 579 to Europe; a lot of the signal was apparently being absorbed by vegetation. So, I moved the base of the vertical up 15 feet to a platform in the mid-portion of the deck support. I ran out of larger magnet wire for radials and used the spool of number 30 wire instead. The hardware stores are closed up tight on Thanksgiving and the Friday before the contest, so I didn't have any luck buying more wire.

As the contest wore on, there were the usual annoyances. The FT-857D kept shutting itself off due to poor contact with the power supply terminals. I forgot to bring the jeweler's screwdriver to fasten the modern-era connector on the switching supply. I finally pressure-taped it with electrical tape.

The amplifier became very hot during

the middle of the first contest night. A quick check showed that the plates of the tubes were glowing orange in protest of my attempts to couple them to a less-than-ideal impedance on 80 meters. I had to retune the antenna to bring the SWR below 2:1 on the low end of the band.

That wasn't the end of my antenna troubles, though. The 40-meter trap melted on one end, so I had to isolate it. I just used it without the 80 meter wire, but I found that it was still overheating on 40 meters. I thought, *so much for the 600-W antenna rating!*

Keeping the Rate Up

The great challenge of the operation was trying to find multipliers. The rate hit 245 an hour on 20 and 40 meters, but I spent at least 4 to 5 hours scanning the bands for multipliers. My difficult-to-copy call sign—KP2/K3MD—didn't help matters. An awkward call sign and 500 W to a vertical antenna were not enough to snag multipliers.

The one thing I cannot understand is why the dupe rate was at least 5% early in the contest, but went to around 15% at the end. I would assume a lot of hams just call without checking. If you put the entire call in *WriteLog*, the computer will not call the station on CW if it is a dupe. Bill, K3ANS, and Alan, N3AD, say "just work them anyway," but I was getting annoyed and at the end of dupe QSOs I began hitting a button that sent "dupe," just to emphasize the point. I made several dupe mistakes myself since the rig was not set up for computer control, and the computer had to be manually switched from band to band (like a 1992-era operation).

I must say, the FT-857D did very well in the QRM; no complaints. The blocking dynamic range is on the order of 120 dB, which is incredible for this size of rig.

Without a directional antenna the rate on 20 and 15 meters dropped from 150 an hour to 30 an hour on Sunday morning when all the US stations began beaming to Europe. I found it was best to stay on 40 and 80 meters Saturday night until 3 or 4 in the morning Sunday.

How would I improve things? I'd check to make sure the rig control and linear control were available for the backup rig (they were fine for the main rig), so I could run "assisted" class. Maybe I'd also pick up one of the nifty Hex triband beams with a built-in mast.

In summary, I made 2750 contacts for a claimed score of 1,750,000. That's better than what I would have accomplished from home and I definitely gave a lot of points back to the home club!

NCJ

Station Profile

Mark Beckwith, N5OT

The VP5JM HAM-let

My aunt had a saying. When I was a kid complaining about the cold, she would tell me, "The only thing separating Oklahoma from Alaska is a barbed-wire fence." You might not think of Oklahoma as cold, but in the winter when it's so cold you don't even want to go outside, much less repair a broken rotator, you definitely start to look for a distraction.

So the Hardware Addict and I were surfing the Web one cold evening, and clicked over to K2KW's DX Holiday Web site. We were quickly consumed by pictures and descriptions of ham stations in the lower latitudes, with sandy beaches or tropical forests nearby. We looked at each other and agreed that we now knew the meaning of "cabin fever."

The cold will make you stir-crazy alright, but we thought we may have found the solution. We needed a mid-winter vacation to someplace warm. Upon examining all the beautiful places in the Caribbean and Central and South America, we settled on a rental that has cut the teeth of many a DXer and contester; a place with some history; a place you hear on the air in virtually every major DX contest; a place we came to call "Jody's place"; but a place Jody calls "The HAM-let."

You can't have been in a DX contest in the last 15 years and not have worked somebody sitting at Jody's HAM-let. Ever since they put in the big airport, although Jody hates the thought of it, the HAM-let has been " only a stone's throw from Miami." Jody's place is located on Providenciales Island in the chain called the Turks and Caicos, part of the British West Indies. Geographically it's really the extreme southeastern part of The Bahamas. The prefix is VP5. Beginning to sound familiar?

A quick click on **www.vp5jm.com** will net pages of information about "Provo" (as the locals call their home), Jody's rental and the radio stuff. A few e-mails and we were on our way. We e-mailed Jody about availability and asked some other questions about important things like currency and grocery availability. We then e-mailed some of the other contesters who have been there to ask some other questions and figure out, of all the possible places to go, if this one was going to be The One. All of the responses were encouraging.

The Grand Damme Ham

Jody Millspaugh first visited Provo in 1970. "The only way to get there then was either by private plane, or in your own boat. This made it especially nice, since you had a lot in common with the other people there. There were no grocery stores, no electricity, no telephones, and as I remember it the police had a Land Rover that did not run. I remember constantly bringing them parts."

A native of Maryland with a hankering to travel, Jody relocated permanently to Provo in 1983. "What drew me to the island was the beautiful water, which was full of coral and beautiful fish. I love snorkeling and learned to scuba dive, which is spectacular with the many walls with their beautiful sponges and coral."

No Telephones?

Jody did say there were no telephones. "I do remember that the first time I ever heard about Amateur Radio was there. Two men – I don't have any idea who they were – were staying at the Third Turtle Inn and came there to operate at VP5. Since there was no way to make a phone call, I realized how important the radio could be in case of an emergency."

Although telephones finally made it to Provo, Jody recalled learning about an Amateur Radio license course. "Bob Cooper, then VP5D, who owned the radio/TV station, offered an Amateur Radio course. I figured that since it was something I had felt was so important when we did not have any telephone, I would try it out. Well! I got 'bitten by the bug!' I became VP5JM, and Bob told me what I should buy to get started. He also set me up with the best QSL manager – W3HNK." Jody has been on the air ever since.

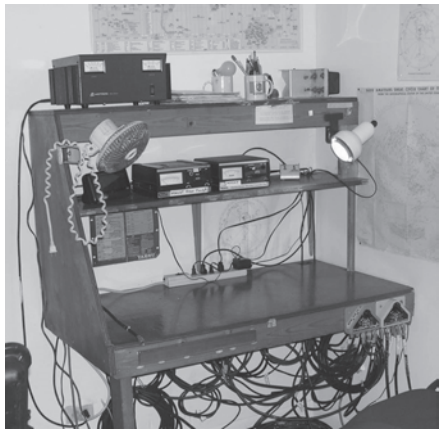
The Beginning of the HAM-let

"I had a little guest house that a friend of mine lived in. After I got VP5JM on the air, she started complaining about my messing up her answering machine and TV. Bob said that I should nicely ask her to move, and I should make the little house a place for visiting hams." Thanks, Bob. You helped the dreams of many a DXer and contester come true!

"At one point I was invited to go on a

The HAM-let's main tower with the tribander and 80-meter dipole.

N5OT and Lizzy the coral-eating dog.



The HAM-let console before the guests arrive.

The HAM-let console after set-up by N5OT and W6DR.

DXpedition, but it turned out I could not get away, so I used the money I'd set aside to buy more towers and antennas. This was the beginning of the HAM-let." In a later opportunity, Jody did get away to join the KP5/KP2A Desecheo DXpedition in 1993.

"I have really enjoyed having the HAM-let, because of all of the interesting and very nice ham radio people I have met from all over the world. It has been great!"

Mark and Dave go to Jody's Place

In early January, I had just ended a life-long career and was focusing on new tasks, and I knew I would want to detox a bit. This was a perfect opportunity to veg-out at Jody's place with an old buddy from the Caltech Radio Club (W6UE) days—Dave Ritchie, W6DR. Dave and I met when we both had the same idea at the same time to rebuild the club station sitting in disrepair and disuse in 1984, so we go back a ways. We have some serious DX trips in the log.

We arranged to meet at the Miami airport and take the last leg out to Provo together. Arriving and getting through Customs was little trouble. When we popped out the door, we found Jody waiting for us out in the lovely Caribbean night air. She guided us to the rental car desk and in about 10 minutes we had the back of our tiny rental car packed with Pelican cases and we were following her around the island to her place.

We begged off a late-night trip to the grocery store, thinking we'd stock up in the morning. Naturally, all we could think about was radio and when we arrived at the HAM-let we wasted no time getting radios out and listening to the bands. All the antenna cabling was straightforward, and the shack comes with a monster 50 A 12 Vdc power supply, so there was no trouble there getting two radios on the air simultaneously. What fun! Because the HAM-let comes with it's own radio we actually had 3 radios available simultaneously.

The next morning we drove out and about and learned our way around, got breakfast and did the grocery shopping. Provo is a great "introduction to DXing" location because the language is English and the currency is US Dollars, which takes some of the variables out of the equation if you're on radio overload. We did have to remind each other once or twice to drive on the correct side of the road. Oops! Maybe we should have picked up the extra insurance. Luckily nobody was around during our brief lapses. Now I know why *he* made *me* drive. But I digress.

Contests

While we were down there solving the world's problems over cold beer, we hoped to learn first hand if victory in the *NCJ's* North American QSO Party would be as easy as it seemed. We learned that it was not. I owe an apology to ZF2NT for making this assertion in past years, and I will eat whatever crow Bruce can shovel over.

Still, we had an absolutely great time. Because it was a detox trip (and because Dave is a phone op), we stayed through the phone weekend of the contest and operated that one M2 just for fun. There again, we didn't break any records, but we sure had a great time. The short answer is this: conditions were really poor and we think we were hard to hear when USA stations had their element tips pointed at VP5. Ten meters was awful and the low bands were reminiscent of Maxwell Smart's "Cone of Silence." One sixty was weak the night of the contest, but the following nights I was running Europeans. Go figure.

Antennas Et Al

Jody's home and Jody's rental are on one big plot of land on a hillside facing north, about 200 feet from the water. The HAM-let is about 40 feet above the water, and Jody's home up the hill is about 60 feet above the water (i.e., it's water from Japan to Africa).

There are a battery of antennas (Jody has 4 towers there; 5 if you count the HyGain HyTower). The HAM-let gets to use a Mosley Pro-67 on 10-40 meters, a Force-12 rotary dipole on 80 meters, and dipoles on 80 and 160 meters, plus Yagis for 6 and 2 meters. Rather than detail the antennas here, it's easier to get a sense of it by reading her Web site. There you can also read what other visitors have said about how they've configured them for various contests.

I've been on a few trips like this and I must tell you there is nothing like having a broadband Internet connection when you're a long way from home. A broadband connection is available at Jody's place and included in the cost of the rental. That's cookin' with gas! I don't think my boss even knew I was away.

The last radio amenity worth noting was that the trip through Customs was very straightforward, thanks in part to the ease of licensing. Jody is the secretary of the Amateur Radio organization in Turks and Caicos, and she makes

The Ham-let – where we called home for 12 days.

W6DR, VP5JM, Lizzy, N5OT.

getting your VP5 documentation easy indeed.

The Island

Provo is definitely getting developed. As armchair observers, Dave and I weren't convinced that the demand could support the supply. There were many partially built resorts across the 5 miles of Grace Bay. They must know something we don't. When we visited resorts to get lunch and people-watch, we were amazed at how uncrowded the resorts were—and January is the high season. We're not sure what's up with that, but it seems like a pristine place the developers are doing their best to capitalize on. Better visit it sooner than later, as it looks like they're bent on taking out a lot of coral reef.

I felt a little bad for Jody because I know it's no longer the unspoiled paradise she used to visit in her airplane. "The landing strip was just a coral strip. Of course, there were no landing lights, so if someone arrived after dark, we would all go out to the airstrip and shine the lights of one of the work trucks from the end of the strip so that they could land." I don't care who you are—that story paints quite a picture.

Speaking of English and dollars, there is a huge new IGA grocery store with absolutely everything anyone could need to endure a week in this place without ever going out, if that's your inclination. Provo could support a ham trip from frugal to extravagant. The grocery store was first rate, and about 2 miles from the HAM-let.

Dave and I ran the spectrum of homemade sandwiches using fresh-cut deli meats from the IGA, to eating in a variety of low-end and high-end restaurants. I'd have to say the high-end wasn't particularly worth it, and the low-end was magnificent. We spent a couple afternoons in tiny dives knocking back a few while watching transplanted Haitians and Dominicans playing dominos and enjoying life, love and family. How cool is that? The local cuisine in these places was really good and really cheap.

Then we'd pretend to be wealthy people looking for acreage or perhaps a little love nest to bring That Special Someone in our private jet. We'd walk away with real estate brochures and condo pamphlets. Man, they're proud of their property down there. I bet they don't appreciate too much TVI, either.

We drove all over the island repeatedly for 12 days. In the end, at $4.20 a gallon (at least it seemed high at the time!) it cost us $20 to fill our trusty Daihatsu Charade before turning it in at the airport. Would that you could buy a car that efficient (and inexpensive) in the USA.

Solving the World's Problems

What started as an "all radio, all the time" trip became much more than that because of the relaxing week between contests. Having not spent any serious time with W6DR since way back when he was N6DLU, and sharing paradise with such a lovely host (with an emphasis on "paradise" and "lovely host"), I lightened my mind of heaviness, and enjoyed many nights of excellent rest, thanks to the ubiquitous cool ocean breeze combined with the HAM-let's airy, open design.

The HAM-let includes a fabulous 2nd story patio deck that overlooks the ocean. We spent mornings with coffee and evenings with beer up there, watching the sun both rise and set. That is, when we were not out and about, or up at Jody's house enjoying her company, or on the radio.

I think Dave and I solved most of the world's problems, with help from Jody and her Jack Russell Terrier Lizzy (who chews coral to get her calcium). Would I go back? Absolutely, you bet. Would I recommend it to a friend? For sure. Jody treats you right, the statin gets out, and you feel better when you get home. What more could you want?

NCJ

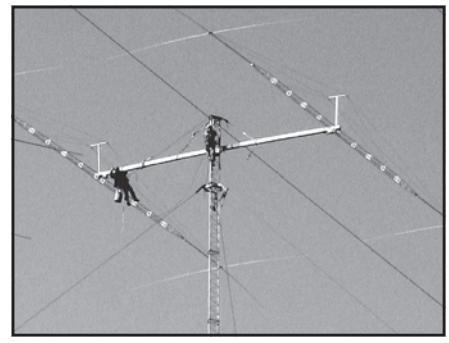
An Update on N3HBX's New Contest Station

Mark Bailey, KD4D

The November/December 2005 NCJ *and the January/February 2006* NCJ *carried a two-part article by John, N3HBX, about the building of his new contest station. Here's a short update on that station from Mark, KD4D, along with some photos from N3HBX.*

We finally had the opportunity to give the new N3HBX station a workout in the 2006 WPX SSB Contest. Band conditions were surprisingly good—we even had an 80-per-hour run on 15 meters! Tom, NI1N, and I concentrated on 40 and 80 meters at night. John, N3HBX, Jeff, N8II and Michael, N3CA, kept the rate up on 20 and 15 during the day. We had a lot of fun.

Our claimed score, 14,869,050, beats the existing US record for Multi-Two set by KM4M in 2004 (13,390,640). I think our concentration on six-point QSOs on 80 and 40 meters made a big difference. John's new station plays very well; it is good to be loud! I hope this is the first of many serious multi-operator efforts from Poolesville, Maryland.



Matt, KC1XX, and assistant Andrew (no call) tuning up the 80-meter Force 12 Yagi (185 feet in the air).

An aerial view of the new Poolesville contest station.

NCJ

WRTC2006 Tidbits:

Call signs for the WRTC2006 Stations

The Brazilian Telecom National Governmental Authority ANATEL—Agência Nacional De Telecomunicações—has approved the allocation of special call signs to be officially used by the teams during WRTC2006.

The call signs approved are in a series from PW5A to PW5Z and PT5A to PT5Z. When you hear one of these on the bands during the IARU contest, you can be sure it's one of the WRTC2006 teams.

In compliance with the rules, the process to assign the station locations will be a lottery Friday prior the contest. The call signs will be given to the teams at the station before the contest.

ITU Zones

Historically about 50 zones show up in the IARU Contest, so there are plenty of multipliers to be had. The zones with the most participation are usually Zone 28 (Central and Eastern Europe), Zone 8 (East Coast of North America), Zone 29 (mostly European Russia), Zone 45 (Japan), Zone 27 (Western Europe), and Zone 7 (Midwest of North America).

Additionally, IARU Society HQ stations, IARU Administrative Council, and IARU Regional Officials join the fun to make the scoring more interesting. Check out the IARU Rules for details (**www.arrl.org/contests/rules/2006/iaru.html**). The rules for the WRTC2006 teams are at **www.wrtc2006.com/site/wrtcrules.html**.

Schedule of Events

Wednesday July 5

Arrival in Florianopolis (WRTC2006 HQ)
Delivery of kits (including the July/August 2006 *NCJ*) to teams and referees

Thursday July 6

Kickoff for competitors and referees
Opening ceremonies and introduction of teams and referees
Lunch for teams, referees and visitors
Competitor and referee meeting
Opening of the HQ stations to all visitors
Referee training
DXpedition presentation
Pile up competition

Friday July 7

Drawing for team operating locations
DXpedition and contest presentations
Transportation to contest sites

Saturday July 8

Opening and presentation of the score board room
WRTC2006 Contest starts at 9:00 AM local in PY
Lunch for visitors
Entertainment programs for visitors
Dinner and show for visitors

Sunday July 9

WRTC2006 Contest ends at 9:00 AM local in PY
Deliver logs and tapes to Referees
Return to WRTC2006 HQ
Contest postscripts
Dinner and evening program

Monday July 10

Entertainment program all day
Evening Awards dinner and show
WRTC2006 is over

Tuesday July 11

Rumors begin for location of WRTC2010

NCJ Profiles

Scott Robbins, W4PA

In this issue, "*NCJ* Profiles" takes a brief snapshot of some of the competitors headed for Florianopolis, Brazil to compete in WRTC-2006. Competitors shown below are listed in alphabetical call sign order. Previous WRTC experience is listed for competitors and/or those who served in an official capacity such as organizing or refereeing/judging.

Competitor: Bernd "Ben" Och, DL6FBL
WRTC-2006 team: +DL2CC
Age: 39
Year First Licensed: 1981
Occupation: Owner, BOC Computersysteme GmbH
Home: Fulda, Germany
Previous WRTC experience: Competitor, 2000, 2002.
Memorable moment: CN8WW M/M World Champions 1999 + 2000, 9Y4ZC single op Assisted win SSB 2003 CW 2004.

Competitor: Tonno Vahk, ES5TV
WRTC-2006 team: +ES2RR
Age: 28
Year First Licensed: 1992
Occupation: Hedge Fund Manager
Home: Jogeva, Estonia
Previous WRTC experience: None
Memorable moment: First 48 hour-awake contest—CQWW SSB 2003 SOAB. Sixty-five hours straight, including antenna work.

Competitor: Jacques Saget, F6BEE
WRTC-2006 team: +W2GD
Age: 52
Year First Licensed: 1970
Occupation: Electronics Engineer / Project Manager
Home: 45 km SW of Paris, France
Previous WRTC experience: Competitor, 2000. Referee, 2002.
Memorable moment: First contest plaque 1981. First time operating at a DX location, FY5KE WPX CW 2000

Competitor: Stefano Brioschi, IK2QEI
WRTC-2006 team: +IK2JUB
Age: 33
Year First Licensed: 1991
Occupation: Networking System Engineer
Home: Milan, Italy
Previous WRTC experience: Competitor, 2000, 2002.
Memorable moment: IG9A CQWW SSB '99, CT9L M/2 WW CW 2003 World Record, SY8A, IR4T, TO1A etc...

K1DG (left) with N2NT.

Competitor: Doug Grant, K1DG
WRTC-2006 team: +N2NT
Age: 52
Year First Licensed: 1967
Occupation: Marketing Director, semiconductor company
Home: Windham, NH, USA
Previous WRTC experience: Competitor 1990, 1996, 2000, 2002.
Memorable moment: Every contest is a great experience, but winning the gold at WRTC-1990 was the best.

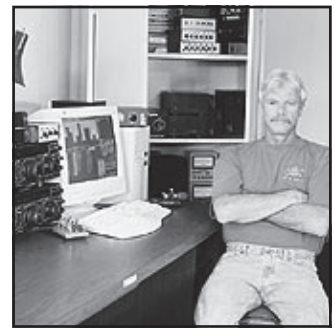
Competitor: Tom Frenaye, K1KI
WRTC-2006 team: +K1ZM
Age: 55
Year First Licensed: 1964
Occupation: Information Technology Consultant
Home: West Suffield, CT, USA
Previous WRTC experience: Competitor, 1996, 2002. Referee, 2000.
Memorable moment: Operating Field Day from Antarctica

Competitor: Jeff Briggs, K1ZM
WRTC-2006 team: +K1KI
Age: 59
Year First Licensed: 1958
Occupation: Retired Banker
Home: East Fishkill, NY, USA
Previous WRTC experience: Competitor, 2000, 2002.
Memorable moment: First USA East Coast station to work Japan long path on 160 meters at 2137Z on 12/25/96—JA1JRK

Competitor: John T. Laney III, K4BAI
Age: 64
Year First Licensed: 1954
Occupation: Judge - United States Bankruptcy Court
Home: Columbus, GA, USA
Previous WRTC experience: Competitor, 1996, 2000, 2002.
Memorable moment: Winning the Silver Medal (with W4AN as partner) at WRTC 96 in San Francisco.

Competitor: George Fremin III, K5TR
(photo unavailable)
WRTC-2006 team: +KM3T
Age: 41
Year First Licensed: 1976
Occupation: Computer support / information research
Home: Johnson City, TX, USA
Previous WRTC experience: None
Memorable moment: There are many.

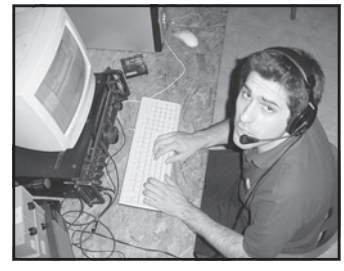
Competitor: Randy Thompson, K5ZD
WRTC-2006 team: +W2SC
Age: 46
Year First Licensed: 1973
Occupation: Sales Manager
Home: Uxbridge, MA, USA
Previous WRTC experience: Competitor, 1996, 2000, 2002.
Memorable moment: Setting the CQWW CW USA SOAB record from my own station in 2000!



Competitor: Mike Gibson, KH6ND
WRTC-2006 team: +K9PG
Age: 52
Year First Licensed: 1966
Occupation: Communications
Home: Oahu, HI, USA
Previous WRTC experience: None
Memorable moment: ARRL DX World Combined Plaque in the mail in 1981—wasn't even aware it existed!

Competitor: Dave Pascoe, KM3T
WRTC-2006 team: +K5TR
Age: 43
Year First Licensed: 1980
Occupation: Consultant
Home: Leominster, MA, USA
Previous WRTC experience: Referee, 2002.
Memorable moment: Posting high claimed SOAB score in CQWW SSB 2005 from K5ZD

Competitor: Jeff Clarke, KU8E
WRTC-2006 team: +K4BAI
Age: 45
Year First Licensed: 1976
Occupation: IT application developer at AFLAC
Home: Hamilton, GA, USA
Previous WRTC experience: None
Memorable moment: WRTC-2006 will be the highlight of my contesting career.



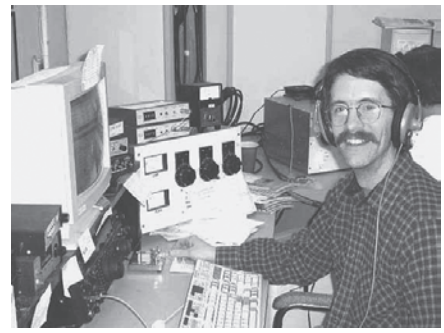
Competitor: Lucas Maiorov LU1FAM
WRTC-2006 team: +LU5DX
Age: 24
Year First Licensed: 1997
Occupation: Employee of a Contact Center / Call Center services company
Home: Rosario, Santa Fe, Argentina
Previous WRTC experience: Competitor, 2002.
Memorable moment: A great USA pile up run on Top Band during ARRL CW 03 from LT1F

Competitor: Martin Monsalvo, LU5DX
WRTC-2006 team: +LU1FAM
Age: 33
Year First Licensed: 1988
Occupation: System Analyst
Home: Lujan, Buenos Aires, Argentina
Previous WRTC experience: Competitor, 2000.
Memorable moment: Sharing ARRL 10-Meter Contests with my (now 10 year-old) daughter Lucila at LT1F.

Competitor: Christo Ignatov, LZ3FN
WRTC-2006 team: +LZ4AX
Age: 35
Year First Licensed: 1987
Occupation: Doctor of dental surgery
Home: Sofia, Bulgaria
Previous WRTC experience: None
Memorable moment: My greatest contest moments are still in the future.

Competitor: Dave Mueller, N2NL
WRTC-2006 team: +N6MJ
Age: 35
Year First Licensed: 1986
Occupation: Chief Petty Officer, US Coast Guard
Home: Novato, CA, USA
Previous WRTC experience: Competitor, 2002
Memorable moment: Competing in Finland at WRTC-2002.

Competitor: Dean Straw, N6BV
WRTC-2006 team: +AG9A
Age: 60
Year First Licensed: 1959
Occupation: Senior Assistant Technical Editor, ARRL
Home: San Francisco, CA, USA
Previous WRTC experience: None
Memorable moment: Being part of Team Vertical at 6Y2A in CQ WW CW 1998



Competitor: Patrick Barkey, N9RV
WRTC-2006 team: +K3LR
Age: 51
Year First Licensed: 1967
Occupation: Economist
Home: Albany, IN, USA
Previous WRTC experience: Competitor 1996, 2002.
Memorable moment: Seeing so many of the people I've worked in contests at Dayton and WRTCs

Competitor: Ward Silver, N0AX
WRTC-2006 team: +KL9A
Age: 51
Year First Licensed: 1972
Occupation: Writer, teacher, engineer, electrophilosopher
Home: Vashon Island, WA, USA
Previous WRTC experience: Organizing committee and station host, 1990. Referee 1996, 2000, 2002.
Memorable moment: Operating QRP and snagging HZ1HZ out of a huge pileup with just the right timing.

Competitor: Juha Tuovinen, OH1JT *(photo unavailable)*
WRTC-2006 team: +OH2IW
Age: 43
Year First Licensed: 1979
Occupation: Unavailable
Home: Helsinki, Finland
Previous WRTC experience: Competitor, 1996. Organizing committee, 2002.
Memorable moment in contesting: Team "Paksalo Philharmonics" and the CQWW CW M/M EU wins + EU record at OH2U

Competitor: Pasi Luoma-aho, OH2IW
WRTC-2006 team: +OH1JT
Age: 46
Year First Licensed: 1974
Occupation: Training Manager at SysOpen Digia Plc
Home: Espoo, Finland
Previous WRTC experience: Competitor, 1996. Organizing committee, 2002.
Memorable moment: Team "Paksalo Philharmonics" and the CQWW CW M/M EU wins + EU record at OH2U

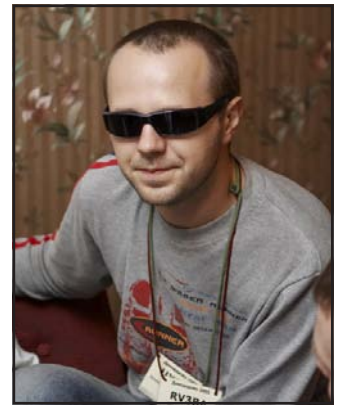
Competitor: Toni Lindén, OH2UA
WRTC-2006 team: +OH4JFN
Age: 26
Year First Licensed: 1996
Occupation: Military officer, signal corps
Home: Helsinki, Finland
Previous WRTC experience: None
Memorable moment: Being called by P5/4L4FN in Scandinavian Activity Contest and moving him through 20/15/10 meters

Competitor: Marko Holmavuo, OH4JFN
WRTC-2006 team: +OH2UA
Age: 27
Year First Licensed: 1993
Occupation: Designer
Home: Kuopio, Finland
Previous WRTC experience: None
Memorable moment: Winning M/M CQ WW CW (02) and SSB (04) with OH2U team using the EA8ZS call sign.

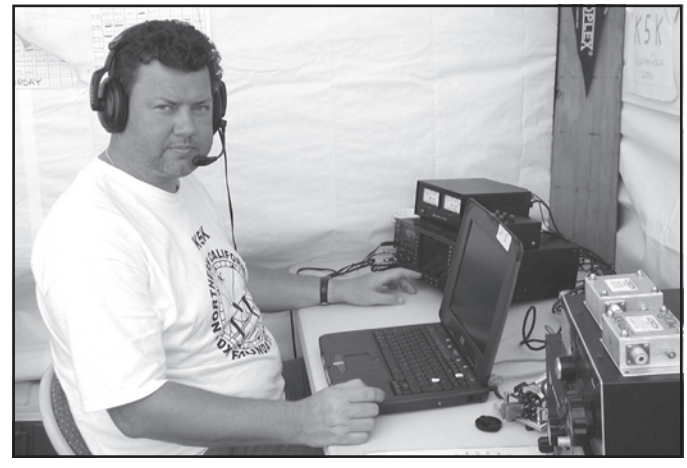
Competitor: Jiri Kral, OK2RZ
WRTC-2006 team: +OL5Y
Age: 59
Year First Licensed: 1967
Occupation: Retired from my own company (PRINTO Ltd.)
Home: Ostrava, Czech Republic
Previous WRTC experience: Referee, 2000.
Memorable moment: First night during CQ WW CW 2004 on 80 meters. 7 hours = 950 Qs.

Competitor: Marin Huml, OK1FUA (OL5Y)
WRTC-2006 team: +OK2RZ
Age: 37
Year First Licensed: 1984
Occupation: CFO & CIO
Home: Prague, Czech Republic
Previous WRTC experience: Competitor, 2000
Memorable moment: Winning the IARU HF World Championship mixed mode 2003

Competitor: Vitor Luis Aidar dos Santos, PY2NY
WRTC-2006 team: +PY2EMC
Age: 40
Year First Licensed: 1981
Occupation: Public service – local justice court
Home: Jaboticabal, SP, Brazil
Previous WRTC experience: Competitor, 2000.
Memorable contest moment: This was my best ham radio moment!



Competitor: Max Pustovit, RV3BA
WRTC-2006 team: +RA3CO
Age: 29
Year First Licensed: 1992
Occupation: Radio communication
Home: Moscow, Russia
Previous WRTC experience: None
Memorable moment: Russian DX Contest 2005 at EX9A, where I made 271 QSOs in the first hour



Competitor: Roman Thomas, RZ3AA
WRTC-2006 team: +UA9AM
Age: 47
Year First Licensed: 1975
Occupation: Managing director of manufacturing and development
Home: Moscow, Russia
Previous WRTC experience: Referee, 2002.
Memorable moment: None

Competitor: Franc Bogataj, S59AA
WRTC-2006 team: +S5ØA
Age: 70
Year First Licensed: 1950
Occupation: Radio engineer (retired)
Home: Ljubljana, Slovenia
Previous WRTC experience: Referee, 1996. Organizing committee, 2000. Competitor, 2002.
Memorable moment: None

Competitor: Tine J. Brajnik, S5ØA
WRTC-2006 team: +S59AA
Age: 57
Year First Licensed: 1963
Occupation: Government employee
Home: Ljubljana, Slovenia
Previous WRTC experience: Competitor, 1990, 2002. Referee, 1996. Organizing committee president, 2000.
Memorable moment: Deciding to organize WRTC-2000 in Slovenia.

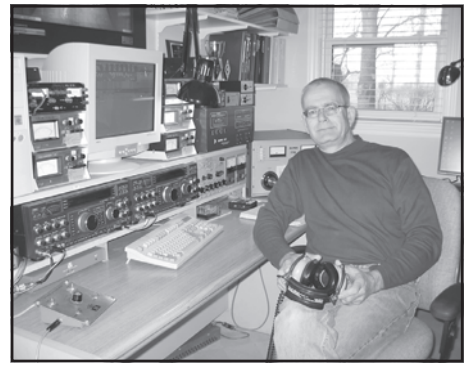
Competitor: Teemu S. Korhonen, SMØW
WRTC-2006 team: +OZ1AA
Age: 23
Year First Licensed: 1996
Occupation: Student
Home: Stockholm, Sweden
Previous WRTC experience: Videographer for official video, 2002.
Memorable moment: Operating CQ WW SSB single band 80 meters with a 3 element Yagi

Competitor: Kazimierz Drzewiecki, SP2FAX
WRTC-2006 team: +SP7GIQ
Age: 52
Year First Licensed: 1968
Occupation: Chemist
Home: Kolaczkowo, Poland
Previous WRTC experience: Competitor, 2002.
Memorable moment: 2002 when propagation in Poland permitted me to make 5000 NA QSOs with rate of 277.

Competitor: Krzysztof Sobon, SP7GIQ
WRTC-2006 team: +SP2FAX
Age: 50
Year First Licensed: 1972
Occupation: Electrical engineer
Home: Lask, Poland
Previous WRTC experience: Competitor, 2002.
Memorable moment: First serious effort with 4 element quad on 40 meters during CQWW CW 1995. First place in EU.

Competitor: Yuri Kurinyi, UA9AM
WRTC-2006 team: +RZ3AA
Age: 51
Year First Licensed: 1972
Occupation: Owner of a professional HF, VHF & UHF radio systems firm
Home: Chelyabinsk, Asiatic Russia
Previous WRTC experience: Competitor, 1990.
Memorable moment: My first child, Alexey, was born in the middle of 1976 CQ WW SSB.

Competitor: Yuri Onipko, UT4UZ (VE3DZ)
WRTC-2006 team: +UT5UGR
Age: 45
Year First Licensed: 1977
Occupation: Technician
Home: Toronto, ON, Canada
Previous WRTC experience: Competitor, 1996, 2000, 2002.
Memorable moment: Operating CQ WW Contests from Zone 2 and other DX locations...

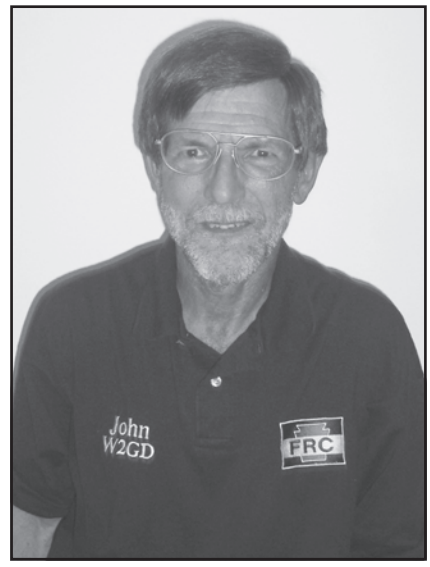


Competitor: John Sluymer, VE3EJ
WRTC-2006 team: +VE7ZO
Age: 51
Year First Licensed: 1972
Occupation: Broadcast Consulting (semi-retired)
Home: Grassie, ON, Canada
Previous WRTC experience: Competitor 1996, 2000, 2002.
Memorable moment: Operating 3 previous WRTC events with VE7ZO representing Canada has been a huge privilege.

Competitor: Jim Roberts, VE7ZO
WRTC-2006 team: +VE3EJ
Age: 54
Year First Licensed: 1967
Occupation: Sales Manager
Home: Atlanta, GA, USA
Previous WRTC experience: Competitor, 1996, 2000, 2002.
Memorable moment: Dismantling and re-erecting the triband beam and tower at OJ5A Friday night.

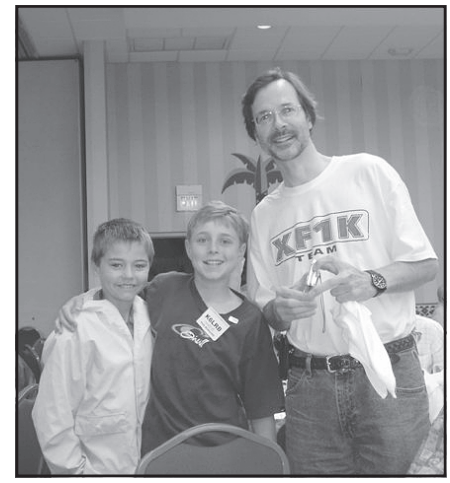
Competitor: Tom Georgens, W2SC
WRTC-2006 team: +K5ZD
Age: 46
Year First Licensed: 1974
Occupation: Manager
Home: Danville, CA, USA
Previous WRTC experience: None
Memorable moment: Winning CQWW SSB SOAB World in 2001

Competitor: Ann M. Santos, WA1S
WRTC-2006 team: +P43E
Age: 45
Year First Licensed: 1979
Occupation: Electronics Engineer
Home: Milford, NH, USA
Previous WRTC experience: None
Memorable moment: Being the first woman to win a major category in CQWW (SOLP USA SSB 1997).

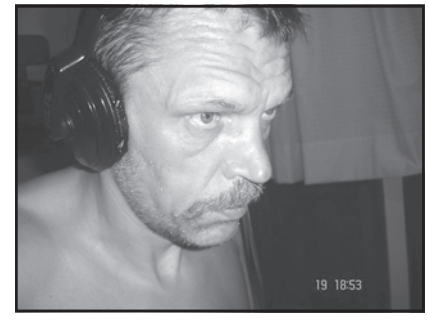


Competitor: John Crovelli, W2GD
WRTC-2006 team: +F6BEE
Age: 57
Year First Licensed: 1961
Occupation: Self Employed – Mgmt. Consulting, Antenna and Tower
Home: Solebury, PA, USA
Previous WRTC experience: Competitor, 1996, 2000.
Memorable moment: Induction into the CQ Contest Hall of Fame, 1999.

Competitor: Ramon Santoyo V., XE1KK
WRTC-2006 team: +XE1NTT
Age: 46
Year First Licensed: 1979
Occupation: Real estate developer
Home: Mexico City, Mexico
Previous WRTC experience: None
Memorable moment: Working someone you personally know on the other side of the world is always exciting!



Competitor: David C. Hodge, XE1NTT
WRTC-2006 team: +XE1KK
Age: 51
Year First Licensed: 1969
Occupation: TV Maintenance Engineer
Home: Pasadena, CA, USA
Previous WRTC experience: None
Memorable moment: Realizing I have been contesting for more than 30 years!



Competitor: Girts Budis, YL2KL
WRTC-2006 team: +YL1ZF
Age: 49
Year First Licensed: 1975
Occupation: General manager in a veterinary pharmaceuticals company
Home: Ainazi, Latvia
Previous WRTC experience: Competitor 2002. Referee, 2000.
Memorable moment: Winning the ARRL CW 2005 SOABHP(A) from Tobago 9Y4W.

Competitor: Andy Ruse, YO3JR (YR1A)
WRTC-2006 team: +YO9GZU
Age: 26
Year First Licensed: 1995
Occupation: Psychologist
Home: Bucharest, Romania
Previous WRTC experience: None
Memorable moment: Generating and managing pile-up in CQ WW CW/SSB is the ultimate challenge for me

Competitor: Tibi Tebeica, YO9GZU (YR1Z)
WRTC-2006 team: +YO3JR
Age: 23
Year First Licensed: 1999
Occupation: Medical student, Carol Davila University, Bucharest
Home: Pucioasa, DB, Romania
Previous WRTC experience: None
Memorable moment: Receiving QTCs in WAE DX Contests

Left to right: YO9GZU, YO3CTK and YO3JR.

YT6A with his son.

Competitor: Ranko Boca, YT6A
WRTC-2006 team: +YT6T
Age: 45
Year First Licensed: 1981
Occupation: Telecommunication engineer.
Home: Herceg Novi, Montenegro, Serbia & Montenegro
Previous WRTC experience: Referee, 2000.
Memorable moment: Founder of SKY Contest Club and organizer of many contest DXpeditions in past years.

5B4AFM (left) with 5B4WN

Competitor: Stavros Tsiakkouris, 5B4AFM
WRTC-2006 team: +5B4WN
Age: 29
Year First Licensed: 1994
Occupation: Graduate student, Electrical & Computer Engineering
Home: Nicosia, Cyprus
Previous WRTC experience: None
Memorable moment: Winning CQ WW is my dream.

Competitor: Marios Nicolau, 5B4WN
WRTC-2006 team: +5B4AFM
Age: 33
Year First Licensed: 1988
Occupation: MD/Medical Research
Home: Nicosia, Cyprus and London, UK
Previous WRTC experience: Competitor, 2000 and 2002.
Memorable moment: Winning Asia in CQ WW SSB 2003

Competitor: Bernie van der Walt, ZS4TX
WRTC-2006 team: +N2IC
Age: 40
Year First Licensed: 1983
Occupation: Director of Telecommunications Company
Home: Bloemfontein, Republic of South Africa
Previous WRTC experience: Competitor, 2000, 2002.
Memorable moment: CQWW, every time a ZL calls in over the long path (or any path!).

Workshop Chronicles

Don Daso, K4ZA

Putting Your Affairs in Order

The genesis of this column began when I was asked recently to assist with the disposal and dispersal of a Silent Key's estate. Licensed in 1933, this old-timer's family was faced with what seemed to them to be an overwhelming series of tasks:

1. Takedown and/or removal of two towers.

2. Sell or otherwise dispose of the gear.

While these may seem to be simple things to most of us, it's important to remember that much of what we do and take for granted in our daily ham activities remains highly technical and confusing to laymen—whether they are family members or not. Not only can the jargon be confusing, but the equipment and gear can seem dangerous and difficult to deal with, especially in times of grief and mourning. In this case, six months have elapsed, and the family is ready to move on—to closure, if you will.

Start an Inventory Now—While You Still Can

The simplest thing any ham can do is to create a document (see my earlier column titled "The Station Notebook" in the March/April 2006 *NCJ*) of the main gear in use at his or her station. The usual information (serial #, date of purchase, price, and so forth) will go a long way toward easing surviving family member's ability to figure out what to seek in selling or disposing of equipment. Suggestions in that same notebook on possible ham friends or radio buddies who might help can calm the confusion and frustration of trying to understand our hobby seemingly all at once.

In this instance, we were faced with a simple inventory (of gear dating from the '40s to an Orion!) and deciding how to dispose of the items. A large collection of old-style homebrew amplifiers (4-1000 designs) in rack cabinets proved to be the largest problem. Simply getting them up and out of the basement was especially troublesome! Once the inventory was finalized, we sat down with the two daughters and came up with a workable solution on selling the equipment.

The largest work detail was, of course, the towers. In place since 1960, they were two homebrew rotating tower designs. And careful inspection proved that they would not be worth salvaging, so we lowered them and began a painful process of cutting them apart. Destruction of radio gear always hurts, especially when the stuff works, but won't or can't have any further value. These towers put the owner on the Honor Roll (at 280 entities), but would not have been adaptable to modern installations. I could only hope he was looking down on us with something akin to understanding.

So this rather large collection of gear will now move from Ohio to North Carolina, and the dispersal process will begin. Hamfests, eBay, bulletin boards and other ads will provide the widest possible audience exposure. The family will receive all appropriate funds, minus a tiny percentage. And, they are pleased the home can be placed on the market soon.

Without a ham friend (even one several states away), this process and settlement could have been incredibly difficult for the family. Without an honest reaction to the inventory, significant funds could have been lost. Without a plan, the process was more time-consuming and awkward than necessary.

Put a plan in place at your station and ease your family's pain.

NCJ

VHF-UHF Contesting

By Jon K. Jones, NØJK

A High-Performance 8-element 50 MHz Yagi

There are a number of good commercial 6-meter long Yagis that are suitable for VHF contesting. Contest ops often start out with a 3-element Yagi, and then move up to the outstanding M² 6M5X 5-element Yagi. These can be stacked for better performance. To further extend your performance envelope, M² offers the 6M7JHV and 6M9KHW Yagis. These offer proven high performance, but at a significant price. The 6M7JHV lists at $351, the 'KHW at $685! You may be able to build a high performance 6-meter Yagi yourself for considerably less.

Table 1 details the design that is used at Gary KBØHH's VHF Station. It is based on the K5GW 144 MHz Yagi, with some modifications. The boom length is about 40 feet. The antenna gain is approximately 12 dBd. These element dimensions (all in inches) were mixed and adjusted ion conjunction with N6CA's popular 8-element Yagi design.

The K5GW Yagi is a proven performer. At the Central States VHF Conference antenna range, the 144 MHz 10-element version measured 12.5 dBd. Table 2 gives comparative performance. Figure 1 shows the pattern of this 8-element design.

The antenna uses a T-match with ¼-inch diameter T-bars, each about 12 inches long. N6CA uses a ½-wavelength coaxial cable balun made from UT250 cable. The T-match spacing is 1.2 inches.

KBØHH uses a stacked vertical pair of these antennas. It is a very effective system. In the January 2006 VHF Sweepstakes, I was operating from KB0HH's station and I was able to work W7GJ DN27 from EM06 in mid-afternoon via ionospheric scatter with Q5 signals. W7GJ was using a single Yagi. During the February 12 E_s opening, California stations such as N6TU were solid copy on the K5GW Yagis, but inaudible on a 4 element Yagi at the same height. Gary often finds he can "open the band" when he uses this array.

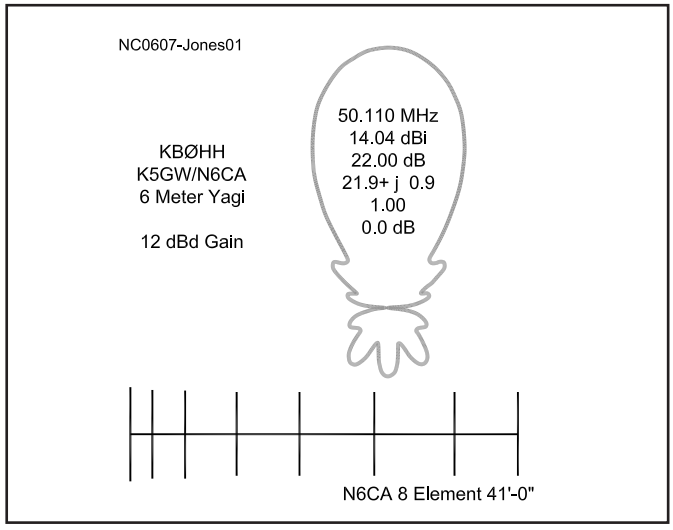


Figure 1—Azimuth Pattern of the 8-element Yagi.

June 2006 VHF QSO Party

The 6-meter band has been on fire with daily openings since mid May. There have already been a number of transatlantic openings between North America and Europe. The Caribbean worked Europe for hours on May 19, 20 and 22, and EH8BPX worked as far West as Missouri and Texas on May 21 (here is a PacketCluster spot from W5OZI).

W5OZI 50150.0 EH8BPX Avelino 2119 21 May 2006 super signal in TX

It will be interesting to see what kind of propagation we have in the June VHF QSO Party…

Highest QSO totals on 50 MHz in the June VHF QSO Party

Here's a list of the highest 6-meter QSO totals in the June VHF QSO Party courtesy of K9AKS and the ARRL.

QSOs	*Grids*	*Call*	*Class*	*Year*	*Section*
1358	245	W5KFT	L	98	STX
1212	233	N5HHS	S	98	STX
1161	269	W5KFT	L	96	STX
1129	252	K5TR	L	03	STX
1104	260	W5KFT	L	00	STX
1090	221	W5UWB	S	98	STX
1077	262	N5HHS	B	99	STX
1066	240	W1XE	L	98	CO
1031	234	K0GU	S	98	C0
1025	135	K8GP	M	05	WV
1023	232	N5HHS	S	96	STX
1020	260	K5AM	B	00	NM
1011	260	K5AM	B	03	NM
1009	210	W8CM	S	98	NTX
992	219	K5IUA	M	98	STX
991	219	WB2WIH	B	00	SFL
985	256	K5CM	S	87	OK
983	229	AA9D	M	98	IL
976	278	WBØDRL	L	92	KS

Table 2

Measured Gain of Selected 2-Meter Antennas

Call	*Design*	*Homebrew/ Commercial*	*Gain (dBd)*
WBØDGF	215 DX 15 el 28 ft	Commercial	14.2
WA2VOI	12 el Yagi 2M12	Commercial	12.9
WBØGGM	14' Boom 12 el	Homebrew	12.6
NØAKC	10 el K5GW 17 ft boom	Homebrew	12.5

Table 1

The K5GW 8-element 50-MHz Yagi

Element:	*reflector*	*driven element*	*dir #1*	*dir #2*	*dir #3*	*dir #4*	*dir #5*	*dir #6*
Length:	116.276	112.600	109.534	107.556	105.776	103.754	102.700	104.754
Spacing:	0	28.530	69.265	134.597	213.310	306.557	408.697	488.066

NCJ

RTTY Contesting

Bill Turner, W6WRT
dezrat@copper.net

Curing the Interface Blues, Part 2 of 2

In the last issue I covered the basics of interfacing *MMTTY* to your computer. For most hams and most computers, that is really all you need to know but there are some cases when a more advanced approach is needed. One of those is when the computer is a laptop (also known as a notebook).

The Laptop's Achilles Heel

For many hams, laptops are the computer of choice. Models made in the last few years have all the computing power of desktops, a bright, easy to read screen, good built-in soundcards, and CD and DVD R and RW capability. In fact, they have everything the RTTY ham needs except for one thing: lack of COM ports, or more often, lack of enough COM ports. Most laptops have either no or just one COM port, but it's a rare laptop that has two, and two is what you need to run *MMTTY* properly. Fortunately for us hams, there is a solution: the USB port.

While it is true that you could run *MMTTY* with only one COM port, you would have to give up the capability to read your transceiver's VFO, and for contesting, that is too much to ask. Back in the early days of *DOS* contest programs like *RTTY* by WF1B, there was no VFO reading and we managed somehow, but as soon as VFO capability became available, we all changed over immediately and never looked back. I shudder to think of having to manually log band changes nowadays! Doing it that way is just asking for trouble in the form of mis-logged bands and possible NILs as a result.

Enter the USB Port

Okay, even the USB solution has a catch. Unlike COM ports, USB ports do not directly put out the control signals we need to read and write to the VFO, transmit FSK or activate PTT. We need an intermediate adaptor of some sort, and fortunately, there are several choices.

One choice is a simple USB-to-serial port converter cable. One end plugs into a USB port on your computer and the other end is a DB-9 COM port. Using this method, you will still need to buy or build a driver circuit to interface the DB-9 to your transceiver, just as you would if you were using an actual COM port on the computer. **A word of caution:** there are lots of different makes and models of these for sale, and **most of them do not work for RTTY!** Why not, you say? It's because they were not designed for the five-bit Baudot code and the 45 baud rate used by RTTY. When *MMTTY* or another program sends them a five-bit 45 baud code representing one character, they simply don't know what to do with it. The COM port driver in your computer is much smarter and handles the five-bit code correctly.

To the best of my knowledge, there is only one commercially made USB to com port cable that handles five-bit Baudot correctly and that is the Belkin F5U103. Frankly, while this has been made to work with some systems, it seems to be somewhat questionable on others. I would consider this approach for experimenters only, those willing to do some testing and tweaking and who would not be terribly disappointed if they were unable to get it to work as they wanted. A quick search on the Internet found several available in the $40 range. That's a lot to pay for something that might not work.

Luckily, there is a better, more certain way, although it is more expensive, too. MicroHam has several USB-to-COM port devices available that will solve the laptop's problem once and for all, and they are usable with desktops, too.

The simplest and least expensive of MicroHam's USB-to-com port devices is the USB Interface II, a basic, bare bones type of adaptor. When used with the included software, it provides a number of "virtual" COM ports that *MMTTY* or other software can use just like they were the real thing. It also provides a means of connecting and isolating the two audio cables, and also a screwdriver adjustment for each line to set the level as needed. As a bonus, it also includes a level converter for the RS-232 signals that nearly all transceivers require for rig control. That last feature alone is worth nearly the price of the unit, since for many transceivers you would have to buy or build a separate RS-232 interface anyway. One of these devices will solve your lack of com port problems forever.

MicroHam also makes two similar devices with more bells and whistles: the USB micro KEYER and the brand new USB DIGI KEYER. Both have some extra functions and features the USB Interface II lacks. I have just purchased a DIGI KEYER for my shack and will be reporting on it in the future. For now, let me say it is a very impressive piece of gear! If you are interested in any of these, be sure to download the manual from the Web site and read it over very carefully. The MicroHam Web site for USA customers is **www.microham-usa.com/**.

A Quick Review of *MMTTY's* Default Settings for PTT and FSK

1. *MMTTY* always sends a software PTT signal on the same com port used for VFO control. If you are happy with software PTT, you don't need to do anything else, assuming your transceiver supports software PTT, of course.

2. I personally prefer hardware PTT because once in a great while software PTT does not work. It will fail to go to TX when it should or fail to return to RX when it should. In my experience, hardware PTT works every time.

3. On *MMTTY's* TX tab on the Options>Setup window, you will see the screen in the accompanying figure. Remember, the port you select here for PTT **is also the port for the FSK signal!** The MMTTY help file has this information but it is buried deep so just train yourself to remember it and you'll save yourself a lot of frustration. The label really should say PTT/FSK.

4. By default, PTT is on the RTS line and FSK is on TxD. To help remember these, think of RTS as "Ready to Send" since that is just what PTT does, and TxD is "Transmitted Data", which is just what the RTTY signal is.

5. If you accept those default settings and wire your cables accordingly, you don't need to configure anything else, but if you want to use something other than RTS and TxD, there is a way: EXTFSK.

MMTTY's Hidden Extra: EXTFSK

If you really must change the keying

lines from the default RTS and TxD it can be done, but if at all possible, don't—especially if you're building the cables from scratch. It's an additional complication that really isn't necessary. Perhaps if you have some old cables from a different program that are wired differently and you want to use them, ok. Here's how you do it.

EXTFSK is a dll file (Dynamic Link Library) that provides *MMTTY* with the capability to change the default RTS/TxD keying lines to something else, either different lines on the same com port, an LPT port or even a USB port. Oddly, the file you download is named comfsk105.zip but when unzipped, you get the EXTFSK dll, a readme file and the source code for people who want to tweak the innards (not for beginners like me!). For complete information on installing and using EXTFSK go to this Web site: **aobajoke.no-ip.org/~ja7ude/info/mmtty.htm**. One word of caution however: reportedly, EXTFSK does not work when using *MMTTY* with *WriteLog*, so do not depend on it in that circumstance. Use the defaults as stated above and all will be well. NCJ

Contest Calendar

Compiled by Bruce Horn, WA7BNM

Here's the list of major contests of possible interest to North American contesters to help you plan your contesting activity through September 2006. The web version of this calendar is updated more frequently and lists contests for a 12-month period. It can be found at: **www.hornucopia.com/contestcal/**.

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

July 2006

RAC Canada Day Contest	0000Z-2359Z Jul 1
Venezuelan Independence Day Contest	0000Z Jul 1 to 2359Z Jul 2
DL-DX RTTY Contest	1100Z Jul 1 to 1059Z Jul 2
Original QRP Contest	1500Z Jul 1 to 1500Z Jul 2
DARC 10-Meter Digital Contest	1100Z-1700Z Jul 2
ARS Spartan Sprint	0100Z-0300Z Jul 4
MI QRP July 4th CW Sprint	2300Z Jul 4 to 0300Z Jul 5
IARU HF World Championship	1200Z Jul 8 to 1200Z Jul 9
FISTS Summer Sprint	1700Z-2100Z Jul 8
Six Club Contest	1800Z Jul 8 to 2100Z Jul 9
ARCI Summer Homebrew Sprint	2000Z-2400Z Jul 9
Thursday NCCC Sprint Ladder	0230Z-0300Z Jul 14
CQ Worldwide VHF Contest	1800Z Jul 15 to 2100Z Jul 16
North American QSO Party, RTTY	1800Z Jul 15 to 0600Z Jul 16
Run for the Bacon QRP Contest	0100Z-0300Z Jul 17
NAQCC Straight Key/Bug Sprint	0030Z-0230Z Jul 20 and 0330Z-0530Z Jul 20
Thursday NCCC Sprint Ladder	0230Z-0300Z Jul 20
Great Lakes Sweepstakes	[cancelled]
RSGB IOTA Contest	1200Z Jul 29 to 1200Z Jul 30
ARS Flight of the Bumblebees	1700Z-2100Z Jul 30

August 2006

TARA Grid Dip Shindig	0000Z-2400Z Aug 5
10-10 International Summer Contest, SSB	0001Z Aug 5 to 2359Z Aug 6
National Lighthouse Weekend QSO Contest	0001Z Aug 5 to 2359Z Aug 6
European HF Championship	1200Z-2359Z Aug 5
North American QSO Party, CW	1800Z Aug 5 to 0600Z Aug 6
ARRL UHF Contest	1800Z Aug 5 to 1800Z Aug 6
SARL HF Phone Contest	1300Z-1630Z Aug 6
NAQCC Straight Key/Bug Sprint	0030Z-0230Z Aug 9 and 0330Z-0530Z Aug 9
WAE DX Contest, CW	0000Z Aug 12 to 2359Z Aug 13
Maryland-DC QSO Party	1600Z Aug 12 to 0400Z Aug 13 and 1600Z-2359Z Aug 13
SARTG WW RTTY Contest	0000Z-0800Z Aug 19, 1600Z-2400Z Aug 19 and 0800Z-1600Z Aug 20
ARRL 10 GHz and Up Contest	0600 local Aug 19 to 2400 local Aug 20
ARCI Silent Key Memorial Sprint	1500Z-1800Z Aug 19
North American QSO Party, SSB	1800Z Aug 19 to 0600Z Aug 20
New Jersey QSO Party	2000Z Aug 19 to 0700Z Aug 20, 1300Z Aug 20 to 0200Z Aug 21
Run for the Bacon QRP Contest	0100Z-0300Z Aug 21
ALARA Contest	0600Z Aug 26 to 1159Z Aug 27
Keyman's Club of Japan Contest	1200Z Aug 26 to 1200Z Aug 27
YO DX HF Contest	1200Z Aug 26 to 1200Z Aug 27
SCC RTTY Championship	1200Z Aug 26 to 1159Z Aug 27
Ohio QSO Party	1600Z Aug 26 to 0400Z Aug 27
SARL HF CW Contest	1300Z-1600Z Aug 27
Kentucky QSO Party	1600Z Aug 27 to 0400Z Aug 28

September 2006

All Asian DX Contest, Phone	0000Z Sep 2 to 2400Z Sep 3
Russian RTTY WW Contest	0000Z-2400Z Sep 2
DARC 10-Meter Digital Contest	1100Z-1700Z Sep 3
MI QRP Labor Day CW Sprint	2300Z Sep 4 to 0300Z Sep 5
WAE DX Contest, SSB	0000Z Sep 9 to 2359Z Sep 10
ARRL September VHF QSO Party	1800Z Sep 9 to 0300Z Sep 11
North American Sprint, CW	0000Z-0400Z Sep 10
Tennessee QSO Party	1800Z Sep 10 to 0100Z Sep 11
ARCI End of Summer Digital Sprint	2000Z-2400Z Sep 10
YLRL Howdy Days	1400Z Sep 12 to 0200Z Sep 14
ARRL 10 GHz and Up Contest	0600 local Sep 16 to 2400 local Sep 17
Scandinavian Activity Contest, CW	1200Z Sep 16 to 1200Z Sep 17
Washington State Salmon Run	1600Z Sep 16 to 0700Z Sep 17 and 1600Z-2400Z Sep 17
QCWA Fall QSO Party	1800Z Sep 16 to 1800Z Sep 17
North American Sprint, SSB	0000Z-0400Z Sep 17
Run for the Bacon QRP Contest	0100Z-0300Z Sep 18
144 MHz Fall Sprint	1900-2300 local Sep 18
NAQCC Straight Key/Bug Sprint	0030Z-0230Z Sep 21 and 0330Z-0530Z Sep 21
CQ Worldwide DX Contest, RTTY	0000Z Sep 23 to 2400Z Sep 24
Scandinavian Activity Contest, SSB	1200Z Sep 23 to 1200Z Sep 24
Texas QSO Party	1400Z Sep 23 to 0200Z Sep 24 and 1400Z-2000Z Sep 24
Fall QRP Homebrewer Sprint	0000Z-0400Z Sep 25
222 MHz Fall Sprint	1900-2300 local Sep 26
Arkansas QSO Party	1600Z Sep 30 to 0600Z Oct 1 and 1800Z Oct 1 to 0200Z Oct 2
FISTS Coast to Coast Contest	1800Z Sep 30 to 1800Z Oct 1

NCJ

Contesting on a Budget

Paul Schaffenberger, K5AF
PaulKB8N@aol.com

The Super Radios - Worth the Cost?

The competitive animal inside each of us has always looked for the next quantum leap in contesting technology. Whether it was the memory keyer, computer logging, automatic antenna selection, or no-tune linears, we've embraced every new technology that has held the promise of bigger scores, greater convenience and/or less operator fatigue.

Now we're enticed by the new "super radios", feature-laden behemoths that promise better performance and greater capability than anything else out there. This trend has its roots with the Signal One radios of the 1970s, but has recently seen the likes of the Orion series from Ten-Tec, the ICOM IC-7800 and the FTDX-9000 from Yaesu. While this article is in no way a technical review, it is intended to look at some of the practical pros and cons of these new rigs.

More is Better?

As a Novice, I would spend hours in the Allied Radio catalog looking at all the new gear. I remember counting the number of knobs on the front panel of the featured receivers, assuming that more was better. I even developed a knobs-per-dollar rating for various receivers, and wondered why the Collins 75S-1 could be so expensive with so few knobs. Once I operated one, I learned why.

These new "super radios" are great performers and are loaded with features, but these strengths can also be weaknesses. There are a lot of knobs and a lot of features. Is it possible to master all these features and put them to use in the heat of battle?

Many responses seemed to prefer simplicity and elegance over multiple capabilities. The first response I received on this topic was from Julius, N2WN, who sang the praises of the Elecraft K2 and K2/100 transceivers. He felt that the solid basic performance and simplicity of these radios gave him all he needed for the operating he did. Others, like George, K5TR, liked the familiarity and proven capability of his pair of TS-850s.

Nonetheless, the features that these "super radios" provide in one box give a skilled operator almost every tool one could ever need. Bob, W5OV, who had the opportunity to use an ICOM 7800 at K3LR, states that it is the best radio he's ever used and that he would consider buying one, funds notwithstanding. But he would surely consider two 756 Pro IIIs (and even have money left over to by a spare!) as an alternative.

Plethora of Features, or Ergonomic Jungle?

The larger question is whether the multitude of features can be understood and quickly assimilated in the contest environment. While W5OV found the ICOM to be fairly intuitive, others have given mixed reviews about the ergonomics of the "super radios." It is obviously very difficult to pack a lot of features into a very large box and expect an operator to instinctively and intuitively make the right responses.

The whole issue of intermingling controls for two receivers in one box can be problematic in itself, and is especially challenging for those of us who have trouble mastering two-radio skills with separate boxes. None of the big new radios have full two-radio receive and transmit capability, so the capability is still evolving.

Some Decision Considerations

Before jumping into a buying decision on one of these big radios, take a couple hours and go to Randy, K5ZD's, Web site and listen to his digitally-recorded audio of the CQWW contests. Remember that Randy is using a pair of FT-1000Ds that are over ten years old, albeit with some mods and updates. After listening for several hours to Randy's recordings and marveling at the results, I believe it is fair to say that there are few, if any, Qs over the 48 hour contest that were lost due to lack of radio capabilities, and that Randy's skill overcame any possible equipment limitation.

In fact, one of the most common observations made is that most felt their scores were not rig-limited. Jim, N3BB, says "The main ingredient is a lot of practice doing SO2R and software that will allow one to process two audio streams for hours on end. This is a skill that cannot be purchased." From my personal perspective, I cannot blame my UBN rates on my radios; it's the gap between the headphones!

Certainly another consideration for anyone contemplating these radios is desk space. These things are *large!* You may need to redesign the operating position to accommodate the larger footprint.

Ironically, it may not be the best operators with the best stations and locations that may benefit most from one of the new radios. Those trying to work Europe from the black hole of the Midwest ,with low or no-gain antennas and a wall of East Coast QRM, might benefit from the dynamic range and selectivity of these new super rigs. If residing in a covenant-restricted neighborhood like myself, the radio may be one of the few variables you can impact.

What became apparent in the responses is the popularity of the FT-1000 (and the FT-990) series transceivers. Ed, N1UR, and Yuri, VE3DZ, joined N3BB in endorsing the FT-1000MP as a viable and less expensive alternative to the new radios. Nonetheless, there will be those who will purchase and master these leading-edge radios, and it will be interesting to see if there will be a quantifiable improvement in scores attributable to the radios.

In Perspective

With the dizzying price spiral on these new radios, it might help to put things in perspective. In 1960, you easily could spend $1500 on a decked-out Collins S-line, which is about $10,200 in today's dollars. If you consider what you are getting today, including color panoramic displays, voice and CW memory messaging, high-power solid-state broadband finals, computer control, and DSP on transmit and receive just to mention a few, you realize what a bargain this technology is. The key will be how we harness that technology to raise the bar.

Thanks to all who contributed for their short-notice inputs: N1UR, N3BB, VE3DZ, W5OV and K5TR.

Topic for September-October 2006: Swap Meet Secrets! Here's your chance to share your techniques for buying, selling and trading at swap meets. How do you bring home what you want without putting a hole in the wallet? What are your "best buys" and what do you avoid? Thanks in advance for your inputs.

NCJ

DX Contest Activity Announcements

Bill Feidt, NG3K

RSGB IOTA Contest (Jul 29-30, 2006)

Call	*Entity*	*IOTA*	*Operators*
AK1Q	USA	NA-137	AK1Q
CU8T	Azores	EU-089	CT1AGF, CT1EPV, CU2HJA, DJ2VO, DF6QV, F6HMJ, G3KHZ, HB9CRV, HB9FMU, VA2AM
DL3KUD	Germany	EU-129	DL3KUD
GM0B	Scotland	EU-123	GM0ELP, GM0LIR, MM0BHX, 2M0VLF, MM0GPZ, GM0OQV, GM0HKS (Mid Lanark contest team)
GW5X	Wales	EU-124	M0OXO, M0NJW, M1TRC, 2E0JTI, 2E0JRZ
K1VSJ	USA	NA-046	K1VSJ
KO1U	USA	NA-137	KO1U
KO1U	USA	NA-137	KO1U
KU8E	USA	NA-058	KU8E, K4BAI
M8C	England	EU-011	G0VJG, G4BUO, M0MYC, G7GLW, M3CVN, G0FDZ
MM3M	England	EU-123	G3VCQ, M3VCQ, M1ERS, 2E0TWS, M0GAV
OZ/DL2VFR	Denmark	EU-088	DL2VFR
OZ/DL4FO	Denmark	EU-172	DL4FO
OZ8MW/p	Denmark	EU-088	OZ2TF, OZ5JR, OZ7KDJ, OZ9V
OZ0ACA	Denmark	EU-125	ON4ACA + NOK members
VE7SAR/VE2	Canada	NA-038	VA7AQ
VE3ZZ/VY2	Canada	NA-029	VE3ZZ
VO1	Canada	NA-140	VO1MX, VO1TA, VO1KVT, VO1JNS
W3RFA	USA	NA-140	W3RFA

Thanks to: DL2VFR, DL3KUD, F5NQL, G0VJG, G3VCQ, GM0EGI, K1VSJ, KO1U, KU8E, NG3K, ON4ACA, OPDX, VA7AQ, VE3ZZ
See **www.ng3k.com/Misc/iota2006.html** for further details

CQ World Wide DX SSB Contest (October 28-29, 2006)

Call	*Entity*	*Class*	*Operators*
CN2R	Morocco	SOSB 80M	W7EJ
IG9R	African Italy	?	TBA
P40W	Aruba	TBD	W2GD
PJ4E	Neth Antilles	M/?	K0RAY, K0RI, N0KE, N0VD, WA4PGM
VK9AA	Cocos (Keeling)	M/S	VK2IA, VK2CZ + another
ZP0R	Paraguay	SO	ZP5AZL

Thanks to: IK8HCG, VK2CZ, W2GD, W7EJ, WA4PGM, ZP5AZL
See **www.ng3k.com/Misc/cqs2006.html** for further details

CQ World Wide DX CW Contest (November 25-26, 2006)

Call	*Entity*	*Class*	*Operators*
9Y4AA	Trinidad Tobago	M/2	W6NV, KH6ND, OH2MM, N6TJ
CN2R	Morocco	SOSB 40M	W7EJ
IH9P	African Italy	M/M	IT9BLB + international team
VK9AA	Cocos (Keeling)	SOAB	VK2IA
VP5W	Turks Caicos	M/2	W7VV, VE7XF, K7BTW, perhaps others
VP9I	Bermuda	SO	WA4PGM
ZP0R	Paraguay	SOAB HP	CX6VM

Thanks to: IT9BLB, N6TJ, VK2IA, W7EJ, W7VV, WA4PGM, ZP5AZL
See **www.ng3k.com/Misc/cqc2006.html** for further details

Contest Tips, Tricks and Techniques

By Gary Sutcliffe, W9XT

Noise – Part 3

This installment of CTT&T finishes up a three-art series on noise. Noise limits what we can hear on our radios, and thus limits what we can work. In the first two installments we looked at various sources of noise. Natural sources of noise, commonly classified as QRN, are more of a problem at the lower frequencies. Special receiving antennas can help pull out the weak ones.

We also looked at various man-made noise sources, mostly line noise. Our readers explained how they tracked down power line noise and other more esoteric sources of noise. We will continue this time with a man-made noise source that was not a problem in the early days of Amateur Radio—namely digital noise.

Digital noise is caused by the high-speed switching signals used in digital technologies. There will be one or more clock sources that provide the master timing for circuits. The clock frequencies will often be a large noise source because these signals usually go to many places in the circuit and the power content will typically be higher than other parts of the circuit. There will also be a multitude of lower frequencies present from the various signals. Since the signals are square waves, large numbers of odd harmonics will also be generated. Even a fairly simple digital circuit can produce hundreds or thousands of different signals that can cover up that needed weak multiplier.

FCC Regulations

Because of the potential for interference, the FCC mandates that digital equipment must not radiate RF frequencies beyond certain limits. Before it can be sold in the United States digital equipment must be tested and labeled for compliance. Similar regulations apply in Europe, and are part of the CE certification process. As part of my day job as an electronic design engineer, I have been through this process many times.

Unfortunately these regulations don't go as far as we might like in preventing digital interference. First they are not often enforced, and some companies ignore them, including some in the ham radio industry. EMC engineers I work with tell me that a large percentage of consumer equipment on the market does not come close to meeting specifications.

Another problem for HF contesters is the frequency range the FCC regulations cover. The FCC was more concerned with interference in the VHF and higher range, including broadcast FM and TV. The radiated emission limits for Part 15 devices cover 30 MHz and above. Finally, the signal level from an emission from a nearby digital device, even when below legal limits, can be much stronger than a weak DX signal. The serious contester trying to maximize receive capability may have to take extra steps to reduce digital noise.

Isolate the Source

The first step is isolating the source. The easiest way is to tune in an interfering signal, and then start turning off equipment until the signal disappears. Sometimes just unplugging parts of a system, such as display, keyboard or printer of a PC system, can help further isolate the problem.

PCs are an important part of the modern ham shack, and are often a major contributor to noise. Terminals and displays are very often the problem. Questions regarding quiet monitors are fairly common on ham related Internet discussions. Bill, AA4LR, got his first taste of this problem 20 years ago with a Wyse terminal used with his packet TNC.

Part of the problem was the lack of shielding. Bill made improvements by spraying the inside of the case with RF conductive spray. Disconnecting the keyboard made a big difference with the remaining noise. Bill tried clamp-on style toroids on the cable, but they didn't help much. He fixed the problem by wrapping the coiled cord around a ferrite rod.

The Magic of Ferrite

Ferrite can be a great help in solving digital RFI problems. Most of the emissions escape from digital devices through the cables. The cables act as antennas. Clamp-on ferrites are easy to install, but are often more expensive than regular toroids and beads. Unless the beads or toroids are large, you usually need to remove the connectors before slipping them over the cable. This can be a pain. If the cable is shielded, it may be impossible to get the shield reinstalled properly.

A little understanding of ferrite material and its characteristics will help in using it effectively. Toroids impart impedance on wires passing through them. This impedance will start at a low value at low frequencies and increase with frequency. The impedance will reach a maximum at some frequency, and then it will drop as the frequency increases further. Depending on the shape, size and composition of the ferrite, the peak impedance can range from a few 10s of ohms up to 1K or more.

Another less-known fact about ferrite is that its effectiveness can be greatly reduced by dc currents flowing through the wires it surrounds. Many of the smaller ones will lose a lot of their effectiveness with only a few 10s of milliamps. Clearly, ferrite suppressors for use on your high current dc switching supply will have to be carefully selected.

There are a few tricks for installing ferrites. First, place them close to the case of the radiating equipment. The shorter the distance from the case to the ferrite, the less effective that wire will be as an antenna, especially on the lower frequencies. Make several loops through the center of the ferrite if you can. This will increase the impedance seen by the wire. This advice might not apply if the cables carry current because the effective current through the ferrite will increase with each additional turn, and as mentioned before, a dc bias will reduce their effectiveness. In some cases one turn may be more effective than two.

That wraps up our series on noise. I hope you learned a bit about its sources and methods of dealing with it. Thanks, as always, to our readers who contributed their experiences. Contributors for this series on noise include AA4LR, K4RO, K5ZD, K9AY, KØUK, KK9K, KJ9C, N4GG, N4ZR, N6NC, N9AU, W1WEF, and W9RE.

Topic for September-October 2006 (deadline July 12)

Filters – What filters have you installed in your receiver? Which ones are most effective under different conditions? How effective is your radio's DSP filter? On which types of interference is it most effective? Do you use external DSP or other filters? Have you added a roofing filter? What is more important, the filter in the radio or the one between your ears?

Send your ideas on these subjects or suggestions for future topics. You can use the following routes: Postal mail - 3310 Bonnie Lane, Slinger, WI 53086. E-mail - **w9xt@unifiedmicro.com**. NCJ

Propagation

Carl Luetzelschwab, K9LA

Solar Cycle 23 and WRTC2006

Solar Cycle 23 continues its march toward solar minimum. July 2006 is the 117th month of Cycle 23; it has been 9 years and 9 months since its official beginning in October 1996. Solar minimum between Cycle 23 and Cycle 24 is expected to occur later this year or early in 2007. Figure 1 shows Cycle 23's progress to-date, and its predicted decline.

WRTC2006 in July 2006 will, for all intents and purposes, take place at solar minimum. How will this impact propagation for the contest? With *VOACAP*, that's an easy question to answer. We'll look at paths from the WRTC2006 QTH in Brazil to the three major contest population areas: North America, Europe and Japan. We'll limit this to a broad look; those interested can work out the details as they see fit. Table 1 shows these propagation opportunities on 20, 15 and 10 meters.

The times in Figure 1 are based on 500W, 12dBi gain antennas, and an SNR (Signal-to-Noise Ratio) midway between what's acceptable for CW and for SSB. Included are times when the SNR is marginal, but still usable. Whether you can hear anything will depend on your local noise environment, your power and your antenna.

For 80 and 40 meters, use appropriate sunset and sunrise times for your QTH in conjunction with the sunrise and sunset times at the WRTC2006 QTH area (sunrise = 1002 UTC, sunset = 2033 UTC).

Note that propagation to JA is given for both short path and long path. This is due to the fact that the distance from the WRTC2006 area to JA is 19,000 km via short path and 21,000 km via long path. That's not much of a difference, and it means one path may be better than the other way around.

Predictions

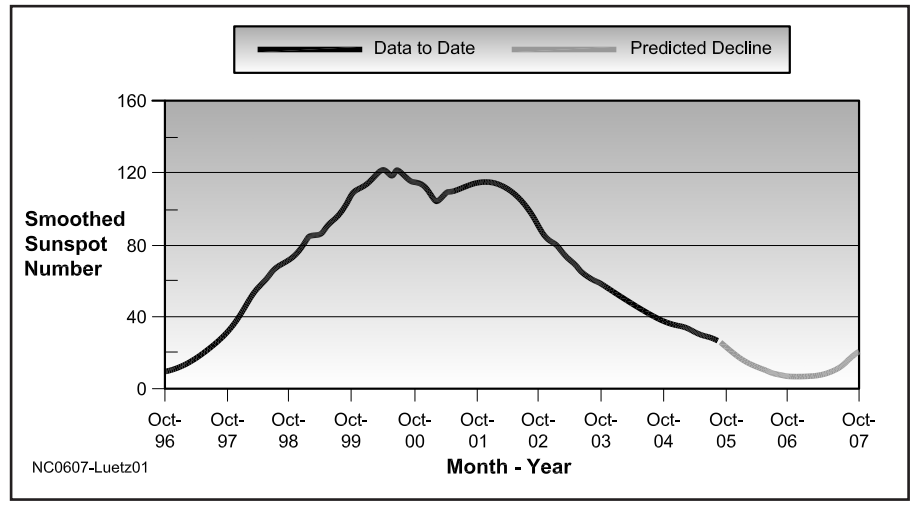
The predictions say that 20 and 15 meters will be the favored daytime bands. That's not too much of a surprise around solar minimum. Any help from 10 meters will be a low probability, but the participants should keep an eye on this band at the indicated times to catch any brief openings.

Table 1

A Broad Look at Propagation for WRTC2006

All times are UTC.

Target Area	*20 Meters*	*15 Meters*	*10 Meters*
North America	0930-0630	1430-2300	2000-2200
Europe	1630-0530	0930-2200	1700-2000
	0830-1100	2330-0130	
Japan (short)	0930-1400	1130-1230	
	1830-0300	2200-2330	
Japan (long)	0900-2200		



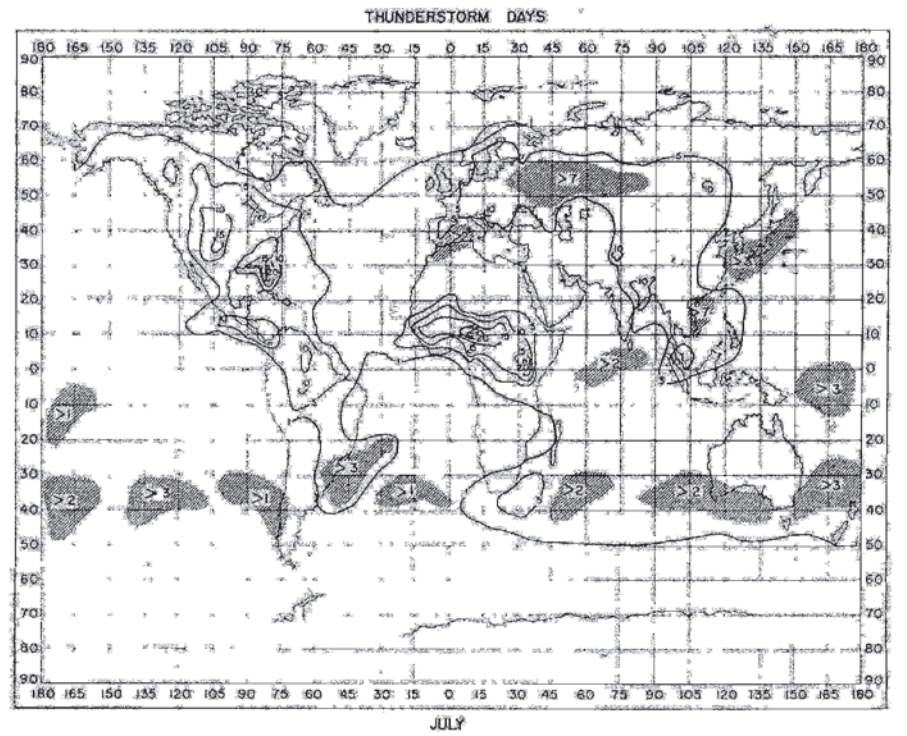


Figure 2—Worldwide thunderstorm activity for July.

February 2006 CW Sprint Results

Boring Amateur Radio Club

The first *NCJ* CW Sprint was held on September 11th UTC, 1977 starting at 0200z. The four lowest amateur bands were available, including 160 meters.

The rules for this contest appeared in the August 1977 *NCJ* and the results were reported by W6OAT in the October 1977 issue. While we might take pride in our current process of turning out the results within two weeks on the Internet, we have never since published the results so quickly in the printed magazine.

When the contest was over, nobody had a clue who had won. The rules stipulated that you had to use separate logs sheets on each band, starting with QSO number one each time. Also, since the multiplier for DX was not limited to North America, it was possible for someone to focus on country multipliers and win with a large multiplier. Of course, getting a DX station to dance to the unique QSY rule was going to be a challenge.

When the smoke cleared, Tom Schiller, N6BT, had the winning score with 231 QSOs and 44 multipliers. Topband was not a factor in this contest as most of the top ten had no QSOs there. On twenty meters, Tom's QSO total was reported as "89!" We assume the exclamation point was for emphasis since this was significantly above the QSO totals from the other stations (and not 89 factorial, which would be a very large total indeed).

This contest also included a multi-multi category and WØZLN operated by WAØCWV and NØXX had 267 QSOs with 46 multipliers for a score of 12,282 points.

With 90 logs received and some band QSO totals approaching 150, it would seem that the first event was pretty popular. Remember, this was before the Internet and the *NCJ* was just a little magazine stapled together by some kids in Pasadena (WA6OTU, WB6KJI and WB6ZVC). The subscription cost was $4 per year.

In the team category, the Independent Contesters team formed by John Crovelli, W2GD, trounced the other teams. In the first running, up to 15 team members were allowed. This means that this team has had more total victories in the contest than any other team during the entire existence of the CW Sprint. The WASP (Winning Alliance of Sprint People) came close, but is one shy of their total.

At the end of the printed results, Rusty mentions that a large number of letters and soapbox comments indicated that some changes needed to be made to the contest. A questionnaire was included in the issue. Here are some of the questions that were asked:

1. Should the contest be moved up to 0100z? (It was).

2. Should 160 meters be dropped? (It was).

3. Should 15 meters be added? (It was not).

4. Should multipliers be counted once per band? (They were not).

5. Should the operator's name be replaced with RST? (It was not).

6. Should the number of participants on a team be limited to 10? (It was).

7. Should logs by band be abandoned and have the QSO number be the total number of contacts? (This change was made).

With these changes, the contest became very close to today's CW Sprint. The starting time was eventually moved up to 00z and multipliers were restricted to North American countries along the way.

The complete top ten looked like this:

Call	*Name*	*QTH*	*20*	*40*	*80*	*160*	*Total*	*Mult*	*Score*
N6BT	Tom	CA	89!	118	24	0	231	44	10,164
W2REH	Joe	NJ	32	79	97	0	208	45	9,568
K4BAI	John	GA	47	78	95	0	220	41	9,020
N6TV	Bob	CA	69	105	37	2	213	42	8,946
K3UA	Phil	PA	48	56	110!	0	214	41	8,774
K5RC	Tom	TX	58	148!	0	0	206	42	8,652
N2NT	Andy	NY	23	90	97	0	210	41	8,610
K6RV (N6OP)	Bill	CA	65	100	31	0	196	43	8,428
N4SA	Dan	FL	39	50	107	0	207	39	8,073
WA5YTX	Fred	NM	0	148!	50	0	198	40	7,920

TOP 10

Call Sign	*Scores*	*Band Changes*	*QSOs Lost*	*00Z*	*01Z*	*02Z*	*03Z*
N2NL	16873	101	7	107	89	77	88
N2IC	15996	136	1	118	83	86	85
N6TR	15781	64	1	95	98	95	79
W6YI	15752	88	2	110	86	85	77
K5TR	14921	136	2	106	82	91	69
N9RV	14564	137	2	102	72	74	84
K5GA	14256	132	4	87	87	84	66
N6ZZ	14028	2	0	92	87	59	96
K6LL	13776	2	0	99	86	68	83
N3BB	13640	139	4	89	69	80	72

Top One-Radio

Call sign	*Score*	*Band Changes*	*QSOs Lost*	*00Z*	*01Z*	*02Z*	*03Z*
N6ZZ	14028	2	0	92	87	59	96
K6LL	13776	2	0	99	86	68	83
N6AA	13502	4	5	89	84	59	84
N6TV	13459	8	2	87	67	87	73
W6YX	12427	2	2	77	85	62	66
K6NA	12363	5	1	91	83	81	62
K9NW	12348	7	3	77	74	85	59
N4OGW	12000	4	0	80	75	73	72
W6RGG	11782	2	4	72	68	62	72
K4XU	11726	2	10	78	69	67	72

Top 10 QSOS

N2IC	372
N6TR	367
N2NL	359
W6YI	358
K5TR	347
K6LL	336
N6ZZ	334
N9RV	331
K5GA	324
W4PA	324

Top Mults

N2NL	47
NK7U	46
K5GA	44
KW8N	44
N3BB	44
N9RV	44
W6YI	44
AA3B	43

Top Low Power

NØAX	9984
N4PN	9234
N5DO	9139
W9WI	9120
K5AF	8970
KA9FOX	8880
N6ZFO	8816
N7CW	8806
K7SV	8720
N6PN	8697

Top QRP

NØSXX	2756
N6WG	2024
KB7Q	1533
NA4BW	1482
WC7S	230

Golden Logs

K6LL	336
N6ZZ	334
K6LA	315
N4OGW	300
K5KA	291
N6XI	279
N5DO	247
K9BGL	218
W5JAW	210
K2UA	52
VE3RCN	28
N7EIE	12
NØAT	4

Top 10 Band Changes

W4PA	155
N3BB	139
N9RV	137
K5TR	136
N2IC	136
K5GA	132
N2NT	126
N2NL	101
W6YI	88
AA3B	84

Team Scores

NCCC #1		*SCCC #1*		*Austin Powers Rangers*		*PVRC/FRC #1*	
N2NL	16873	W6YI	15752	K5TR	14921	N2NT	12546
N6TV	13459	K6LL	13776	K5GA	14256	N4AF	12040
NK7U	13064	K6LA	13545	N3BB	13640	AA3B	11997
W6YX	12427	N6AA	13502	K5NZ	12684	W2RQ	11214
AE6Y	12054	W4EF	12986	N4OGW	12000	N2NC	10962
W6RGG	11782	K6NA	12363	K5OT	11508	K3WW	10277
K6AW	11000	AC6T	10725	N5DO	9139	K3MD	9160
N6XI	10881	XE1NTT	10374	K5AF	8970	K7SV	8720
K7NV	9500	W6SJ	6358	W5JAW	7980	WW2Y	8126
K6RB	9477	K6EY	864	AC5AA	2700	N8NA	3706
Total	120517	Total	110245	Total	107798	Total	98748

5. SSC #1 (W4PA, K4BAI, K4RO, W4NZ, KU8E, K4FXN, N4PN, W9WI, AA4GA) 91978
6. Dead Lizards Can't S (N9RV, W9RE, AG9A, N9CK, KØOU, KA9FOX, K9KM, J79WI, K9ZO, WW9R) 78030
7. NCCC #2 (AJ6V, N6ZFO, N6PN, NI6T, WØYK, W6OAT, K6LRN, KF6ZWZ, W6RK, N6WG) . 74154
8. Azenmokers (N2IC, N6ZZ, N5OT, K5KA, W7YS) 58135
9. Corner Pocketeers (N6TR, NØAX, N7WA, KI7Y, K7WA, NG7Z, N7LOX) 48373
10. PVRC/FRC #2 (WJ9B,W4AU,N4ZR,W3YY,K3STX) 30886
11. YCCC #1 (K1KI, K1HT, K5ZD, W1JQ) 27739
12. SSC #2 (K4LTA, K1GU) 15957
13. Coloradoans (WØETT, KØRI, NØSXX) 13952
14. MWA (KØAD, ACØW, KSØT) 13666
15. North Coast Contesters (KL7WV, K2UA) 9018
16. Austin Powers Rustlers (WQ5L, KS5V) 6192
17. NCCC #3 (NO6X, K6NV) 6120
18. EU LiDz (LZ9W, DJ1YFK) 4281
19. SCCC #2 (KQ6ES, K1USC, N6TW) 3378

Dave Mueller, N2NL

One thing seemed to have become impossible, however. No station from California ever won this contest again. K6LL/7 did win the event just over the border in Yuma, Arizona—and several second place showings were posted, but it wasn't until nearly 30 years later that someone from California would win the contest.

That someone is Dave Mueller, N2NL. Due to a recent transfer by the Coast Guard, Dave found himself moving from Key West to Novato, California about 20 miles north of the Golden Gate bridge. Dave had been posting some pretty impressive scores from the station of K1PT back in Florida and took full advantage of the opportunity to operate from W6NL's mountaintop station. Perhaps someone forgot to mention that you couldn't win from California. At any rate, Dave finally erases one of the more fun trivia questions about the CW Sprint, which was "Who is the only person to have won a CW Sprint from California".

It would seem we need a new trivia question to replace this. We propose the following: "What stations were active in both the first and fifty-ninth CW Sprint?" The answer is K1EA, N2NT, W2RQ, W3YQ/KL7WV, K3UA, K4BAI, N6AN (WB6KJI), N6TV, KW8N (WB8DQP), K8MR, W9RE and KØOU (WB0LFY). Special mentions to K5RC who is now W7RN and had his station operated by KL2A this time around and Danny, K7SS, who was active this time, and had K7RA as a guest op in the first one.

As with the first running of the event, we are left with a question that might result in a small rules change. For the past 12 years or so, the CW Sprint has typically been run during the same weekend as the CQ WPX RTTY contest. This contest has grown significantly during the last five years to the point that it qualifies as a major contest event. The impact to the CW Sprint is felt by having fewer operators on for the contest—and a significant QRM problem on 40 meters. The CW sprint activity gets pushed down the band, and this time that was a major issue with the 3YØX DXpedition going full force.

Do you think the CW Sprint should be moved to prevent this conflict? Let us know and a decision will be made after the September Sprints. One option is to swap it back with the Phone Sprint—which does conflict with the FOC marathon—but that is probably a smaller impact than the RTTY contest. Another possible option is a three way swap with the RTTY Sprint moving up to be the first sprint in February, and the other two moving back one slot. This would put the CW Sprint on the last weekend of February.

QRP Category

Five QRP logs were received this time around. Gary Slagel, NØSXX, operating from Colorado posted the winning score with 108 QSOs in the log, holding off Bob, N6WG, who climbed to 100 QSOs just before the contest ended. Gene, KB7Q, stopped off on his way to Mexico to give the Sprint a try using a mobile setup and put an impressive 80 QSOs in the log. NA4BW put in a full effort for four hours, but could only manage to get 68 QSOs in the log and WC7S did his best to put Wyoming in your log with a solid effort on all three bands. Remember to keep an ear out for those weak ones.

Low Power Category

In the shoeless category, that famous *QST* author, NØAX, posted the top low power score. This is a fine way for Ward to close out operations from his old station in Washington. I expect he will be a guest operator in some of the future sprints until he settles down in a new place. A close three way race for second place was won by Paul, N4PN, from Georgia with Dave, N5DO and Doug, W9WI, on his heels. K5AF had a bit of breathing room for fifth place and the rest of the pack were nearly too close to call. Special mention must be made to Matt, N6PN, who snuck into the top ten. Matt was one of my early Elmers and was the first person I talked to on a ham radio. Matt used to sponsor a contest back 40 years ago called the Ten Meter Band Opening contest, which might have been inspiration for some of the current contests that are sponsored by the Boring Amateur Radio Club. You might remember WB6KPN appearing in some of the early Amateur Radio films produced by Dave Bell, W6AQ.

High Power

Going into the event, Steve, N2IC and Tree, N6TR, were the favorites and neither one disappointed as they battled it out for the high QSO total. Steve jumped out to a huge 23 QSO lead after the first hour, and hung on to finish five QSOs ahead of Tree. However, N2NL found enough extra multipliers to sneak ahead of both of them. Dan, N6MJ, operating from the W6YI superstation, was the only other log to finish above 350 QSOs. Does anyone think the team of N2NL and N6MJ might be tough to beat at WRTC-2006? The rest of the top ten includes N5RZ operating from K5TR, last September's winner N9RV and two "one radio" scores from N6ZZ and K6LL. N3BB snuck in for tenth place.

The one radio category is dominated by West Coast stations, which makes sense as they were able to make hay for a significant time on 20 meters at the start and maintain a more traditional band change philosophy.

Team Competition

The Northern California Contest Club has been very active in promoting the CW Sprint contest, holding practice sessions on Thursday nights and a ladder competition during the summer. They are training a whole new crop of Sprint operators. This paid off for them with a victory in the team competition over their rival Southern California Contest Club. Austin Powers Rangers came in third followed by the PVRC/FRC team. The nineteen teams that were registered accounted for the majority of activity in the contest. This continues to demonstrate that forming a team is one positive way to improve activity in the contest.

Records

Three new records were established this time around. KB7Q's QRP effort set a new record in Arizona. J79WI posted the first score from Dominica and DJ1YFK pushed up his German record.

Next Time

The next *NCJ* CW Sprint will be held in September on Saturday 10th UTC (Saturday the ninth local time). For team registration, use the *NCJ* Web page at **www.ncjweb.com**. Logs can be submitted via e-mail to **cwsprint@kkn.net** or using the log submission form on the *NCJ* Web site. There is also a handy log submission form on the *NCJ* Web page for those of you who kept a paper log. Logs are due seven days after the contest.

Check out the Web resources at **n6tr.jzap.com/sprint.html** and rules, records and previous results at the *NCJ* Web page at **www.ncjweb.com**. Previous results can also be viewed on the *NCJ* Web page.

Soapbox

No propagation at all on 20m. On 40m I had to contend with the PA contest, 3Y0X and that infernal RTTY racket, so got to 10 QSOs and then gave up.—*G4BUO*

Many difficulties, but it was fun and interesting to do. Arrived at the QTH about 3 hours before the start, and with the help of K5KG, K1XX, W4IX and KK9K, got the antenna up and the rig and computer running about 30 mins before the start. Very slow start, but then things picked up a bit. Fought through sleep deprivation, unfamiliar radio (IC 756PROII), unfamiliar logging program (*Writelog*, I use *NA* in sprint home), RF in the computer on 80, so I had to hand key everything there, low power, low antenna (V at 35 ft), and everyone pointing their beams elsewhere. But in the end it was fun and informative. Thanks to everyone who pulled my signal out. Operator WI9WI.—*J79WI*

Worked KL7, ZF2, J79, and XE on 80 meters. Missed some easy ones like AR, AL, IA, NE, and VE7—best 4 hours in radio—*K0OU*

20 stayed open longer than I expected, but it might as well have closed. I wasn't getting many answers (30 QSOs in 63 minutes). I have hardly ever had my best hour on 80!—*K1HT*

Took a while to make my first contact. It was tough trying to get up to speed and then catching someone before they were taken and gone. 20 meters was fast at the start of the contest so I went to 40M to get started and eased into it. Once all the speed demons had worked each other, it slowed down to something recognizable that I could work. I got into a groove after an hour or so, but still a tough process. Thanks to all for QRSing and the repeats. Even folks I've worked in other contests, my brain needed repeats to get the names right. My goal here was to get more experience at copying CW in stressful conditions. It helped and I feel ready to take on next week's contest as part of a Multi-Multi group here in So. Cal. I'll still be the slow one in the group, but I'm improving.—*K1USC*

Not a fun Sprint. The RTTY conflict and early sunset combined with low sunspots to make for my worst opening hour ever. Looking forward to September, though!—*K2UA*

Not too bad—a good warm-up for the DX contest. Glad to make the No 1 team from PVRC/FRC after I agitated the club in the reflector to put in a showing. My first sprint (the third held, I think) was 112 contacts.—*K3MD*

Missed Kentucky as usual. Bands were sure long.—*K4FXN*

With 3Y0X and WPX RTTY both on, it was bumper car action on 40 meters. More band changes, more CQs, lower score. Maybe I should stick to one radio in this contest. Still the best four hours on the air. Thanks for showing up.—*K4RO*

Great contest as always, the hardships caused by RTTY contest, band conditions an—*K5AF*

Second radio cratered early in second hour ... just as I was feeling better about the two-radio rhythm. Guess it ended up as SO-1.25R radio category?—*K5OT*

Very frustrating at end of the first hour, so took a break to watch the Olympics. Bring back the sunspots!—*K5ZD*

Limited operating time...bummer, but fun as usual!—*K6EY*

Decent start on 20, early to 40. Conditions were flaky, north-south path was difficult, the Seattle guys were weak on every band; few Canadians.—*K6NA*

Off to a bad start killing 20 minutes figuring out logging program misconfiguration. Settled down during second hour, but then had to contend with the RTTY/3Y0 situation on 40.—*K7SV*

I need to get SO2R going and maybe study the code too.—*KA9FOX*

We're on our way to Mexico in the RV. Stopped at Painted Rocks Petroglyph site in near Gila Bend, AZ to give QRP Sprinting a try as my first sprint effort. Good code practice (humor)! A K-2 with 25' of vertical on the back bumper.—*KB7Q*

Tree made me send this log in.—*KL7RA* (what a whiner—*Ed.*)

My first Sprint since 2000. I don't know I ever stopped doing it.—*KQ6ES*

Need to get on CW more. A few times a year doesn't cut it here.—*KW8N*

Although it looked like the possibility of 20 being a washout was strong, there was quite a bit of action for the first hour. Then it really went fast. Low power guys had to dodge fast on forty, or else a giant foot came out of the Midwest and flattened you! Finally, 80 turned out great—best finish ever on 80 and the first time I've ever had more Qs on 80 than 40 or 20. Low flux sprints are a different animal. This is probably the last sprint for me from this QTH—it's been quite a good run and I'll miss it!—*N0AX*

FUN-O-FUN! All three bands were great from here. RTTY/3Y0X made 40m real interesting. KL7WV was outstanding on all three bands. This is a lot of fun...maybe sked on weekend when no RTTY Test.—*N4PN*

I'm sure glad 3Y0X pileups and RTTY contests won't be around next time.—*N6TV*

Sprint was really tough chewing this time. I made a strategic error in spending way too much time CQing. Should have focused on S&P with just the occasional CQ following an S&P QSO. Still, I only missed my previous best by 4 QSOs, so I don\'t feel too bad. As we say in bowling, at least I beat my average. Mults seemed a lot harder to come by this time. I see a lot of others also noticed this too. I was down 9 mults from last year. Worked no VEs at all, but I did hear one VE7. Holiday from radio? I hope in the future the various contests can be a bit better coordinated, so we don't have this horrible cat fight going on for QSO room. This was just ridiculous. Anyway, as usual, Sprint was a

great "learning experience". Now getting ready for the upcoming ARRL DX contest. Hope for better conditions. Thanks for the Qs and see you on the air.—*N6WG*

Awful! With pileups on 3YØX on 20 and 40 and huge RTTY activity on 40, this was the worst Sprint in memory. Yuck!—*N6XI*

This is one of the most challenging contests out there, especially when I haven't tried it in 3 years! CU in September.—*N7EIE*

Nothing much doing on 20m. A fair amount of noise on 40m and 80m with the snow storm, so sorry if I missed anyone who needed DE.—*N8NA*

Next time I will be Bob. Should change my call to N9SZ.—*N9HZ*

40 was certainly a challenge. It also was in terrible shape, propagation wise, for most of the contest. I look forward to working Ohio and Illinois again sometime.—*N9RV*

What a disaster that was! First, I got home from a funeral a couple of minutes before the contest. No time to check the computer hoping the config file was right. 20m was fine but I noticed that the dupe sheet wasn't working right. So kept plugging away at the contest. Then, when I changed to 40m, I found that the band was filled with a DX pile up and what seemed like hundreds of RTTY signals. Only made 7 Qs on that band. Then my wife comes home early and wants to talk. Then the software really started to act up. Something was terribly wrong so I had to start all over with the contest setup and re-log everything. By that time I got the software running correctly, 40m was useless and so I went to 80m. Finally made good progress. Near the end, I heard 3YØX calling CQ and immediately a pileup started and spread. Didn't know who was calling for NA or the DX. Maybe I'll just take a valium and go to bed.—*NG7Z*

Sprint was lively as always. RTTY contest hurt 40m effort which is too band as conditions seemed very good. 80m was my best band for QSOs, which is a complete change from past sprints.—*WØETT*

Score down a bit, but still enjoyed this Sprint—*W2RQ*

Bad snow storm during contest. Precipitation static and de-tuning of antennas limited operation.—*W3YY*

A Yaesu MarkV Field transceiver running 100 W—SO1R—to a modified 40m Carolina Windom at 30 feet. This was my second Sprint. About same results as last year, but lots more work this time what with conditions and 40m distractions. As usual on 20, I was always behind the curve. 40 is usually my best band, but I really struggled there too. Never would have thought that 80 would be my best rate band, with a half sized, low antenna. One kick in the butt was being called by J79WI on 80 near the end of the contest. Heard him CQing with no answers after that. Apologies to the guys who I slowed down when making bad typing mistakes. My keyboard broke a few hours before the contest, and I had to get a replacement. I changed over to a curved, ergonomically sound version that is a lot more comfortable to use. Unfortunately, in the heat of battle, my limited muscle memory wanted to still use the old keyboard. I especially remember one QSO with Tree where I screwed up big time, and then could not answer the pileup calling afterward. All told, I figure I lost about a dozen Qs because of this problem. Still, it's the coolest contest going. And, yes, rescheduling to avoid RTTY contest would be a good thing. Jim—*W5JAW*

Operating from AA6PW. Thanks, Bob—*W6SJ*

Equipment: FT1000 and low dipoles. This was tough going due to low sunspots and the RTTY contest that was taking place at the same time. There were not as many sections present as in the past.—*WW2Y*

First time CW sprint. Wow—my brain hurts!-*WW5X*

Many thanks to Hector, XE2K, for the use of his fine station. I got a pretty good start on 20. But things cooled down too fast and got slower as time passed. 84, 72, 65, 53 were my hour totals. 40 was quite a slog after the 20 minutes or so. I needed to go to 80 sooner than expected. After last year's experience in the ARRL DX CW test I knew XE1NTT/2 is not so easy to copy, but I didn't anticipate as much difficulty in the Sprint. I wonder if the call sign variations I experienced were typing errors or just difficulty copying? As I became less of a multiplier later in the contest my QSO rate really tanked because some callers seemed just a bit too anxious to call me.—*XE1NTT*

Scores

(* indicates low power, ** indicates QRP)

Call	Name	QTH	20	40	80	QSO	Mlt	Score	Team
K1KI	TOM	CT	73	67	128	268	39	10452	YCCC #1
K1HT	*DAVE	MA	29	105	85	219	38	8322	YCCC #1
K5ZD	RANDY	MA	51	64	96	211	39	8229	YCCC #1
W1JQ	*MIKE	CT	0	0	32	32	23	736	YCCC #1
N2NT	ANDY	NJ	64	123	119	306	41	12546	PVRC/FRC #1
W2RQ	BILL	NJ	52	104	111	267	42	11214	PVRC/FRC #1
N2NC	JOHN	NJ	46	101	114	261	42	10962	PVRC/FRC #1
N2GC	MIKE	NY	0	61	82	143	39	5577	
K2UA	RUS	NY	27	25	0	52	24	1248	North Coast
N2ZN	*KEN	NY	0	12	25	37	18	666	
AA3B	BUD	PA	42	127	110	279	43	11997	PVRC/FRC #1
K3CR	ALEX	PA	62	101	104	267	42	11214	
K3WW	CHAS	PA	50	81	108	239	43	10277	PVRC/FRC #1
K3MD	JOHN	PA	60	69	100	229	40	9160	PVRC/FRC #1
N8NA	*KARL	DE	3	50	56	109	34	3706	PVRC/FRC #1
K3STX	*PAUL	MD	24	32	50	106	28	2968	PVRC/FRC #2
N3SD	*GREG	PA	0	6	25	31	18	558	
W4PA	SCOTT	TN	84	131	109	324	42	13608	SSC #1
N4AF	AL	NC	68	126	107	301	40	12040	PVRC/FRC #1
K4BAI	JOHN	GA	67	86	115	268	43	11524	SSC #1
K4RO	KIRK	TN	79	96	109	284	39	11076	SSC #1
W4NZ	TED	TN	76	93	88	257	42	10794	SSC #1
KU8E	JEFF	GA	85	75	89	249	41	10209	SSC #1
K4FXN	DAN	KY	47	99	87	233	41	9553	SSC #1
N4PN	*PAUL	GA	86	76	81	243	38	9234	SSC #1
W9WI	*DOUG	TN	58	79	91	228	40	9120	SSC #1
WJ9B	WILL	FL	71	96	54	221	40	8840	PVRC/FRC #2
K4LTA	BILL	TN	67	79	64	210	42	8820	SSC #2
K7SV	*LARRY	VA	38	90	90	218	40	8720	PVRC/FRC #1
K4AMC	*JIM	TN	57	73	88	218	38	8284	
W4AU	JOHN	VA	55	79	69	203	40	8120	PVRC/FRC #2
K1GU	*NED	TN	52	76	55	183	39	7137	SSC #2
AA4GA	*LEE	GA	60	69	67	196	35	6860	SSC #1
N4GG	HAL	GA	8	53	89	150	37	5550	
N5VI	*VAN	GA	44	57	52	153	34	5202	
NA4K	STEVE	TN	15	46	58	119	37	4403	
W3YY	BOB	VA	52	47	13	112	31	3472	PVRC/FRC #2
K4MX	*JERI	VA	3	24	40	67	27	1809	
NA4BW	**BRIAN	GA	20	6	31	57	26	1482	
N4LF	*LEX	FL	8	6	32	46	19	874	
N2IC	STEVE	NM	128	139	105	372	43	15996	Azenmokers
K5TR	GEO	TX	98	145	104	347	43	14921	Austin Rangers
K5GA	BILL	TX	81	136	107	324	44	14256	Austin Rangers
N6ZZ	PHIL	NM	113	124	97	334	42	14028	Azenmokers
N3BB	JIM	TX	79	131	100	310	44	13640	Austin Rangers
N5OT	MARK	OK	97	128	86	311	41	12751	Azenmokers
K5NZ	MIKE	TX	85	111	106	302	42	12684	Austin Rangers
N4OGW	TOR	MS	91	111	98	300	40	12000	Austin Rangers
K5KA	KEN	OK	90	106	95	291	40	11640	Azenmokers
K5OT	LARRY	TX	70	103	101	274	42	11508	Austin Rangers
N5DO	*DAVE	TX	73	106	68	247	37	9139	Austin Rangers
K5AF	*PAUL	TX	53	88	89	230	39	8970	Austin Rangers
N5PO	LEE	TX	61	78	84	223	36	8028	
W5JAW	*JIM	TX	50	80	80	210	38	7980	Austin Rangers
WQ5L	*RAY	MS	63	64	51	178	34	6052	Austin Rustlers
N5CHA	*TODD	TX	43	15	50	108	32	3456	
AC5AA	*DUANE	TX	10	37	43	90	30	2700	Austin Rangers
WW5X	*BILL	OK	22	48	16	86	26	2236	

Call	Name	QTH	20	40	80	QSO	Mlt	Score	Team
W5ASP	*JOE	TX	50	28	0	78	24	1872	
KS5V	*ED	TX	16	4	0	20	7	140	Austin Rustlers
N2NL	DAVE	CA	109	148	102	359	47	16873	NCCC #1
W6YI	JIM	CA	103	134	121	358	44	15752	SCCC #1
K6LA	KEN	CA	111	123	81	315	43	13545	SCCC #1
N6AA	DICK	CA	108	129	77	314	43	13502	SCCC #1
N6TV	BOB	CA	120	105	88	313	43	13459	NCCC #1
W4EF	MIKE	CA	106	112	84	302	43	12986	SCCC #1
W6YX	MIKE	CA	100	102	87	289	43	12427	NCCC #1
K6NA	GLEN	CA	98	111	108	317	39	12363	SCCC #1
AE6Y	ANDY	CA	104	115	68	287	42	12054	NCCC #1
W6RGG	BOB	CA	84	101	89	274	43	11782	NCCC #1
K6AW	STEVE	CA	83	99	93	275	40	11000	NCCC #1
N6XI	RICK	CA	81	105	93	279	39	10881	NCCC #1
AC6T	STEVE	CA	102	106	67	275	39	10725	SCCC #1
AJ6V	ED	CA	99	101	66	266	38	10108	NCCC #2
K6RB	ROB	CA	81	75	87	243	39	9477	NCCC #1
N6ZFO	*BILL	CA	95	79	58	232	38	8816	NCCC #2
N7CW	*BUD	CA	78	99	61	238	37	8806	
N6PN	*MATT	CA	73	85	65	223	39	8697	NCCC #2
NI6T	AL	CA	83	96	60	239	36	8604	NCCC #2
W0YK	ED	CA	82	92	61	235	36	8460	NCCC #2
W6OAT	RUSTY	CA	101	108	19	228	36	8208	NCCC #2
K6LRN	DICK	CA	74	74	56	204	40	8160	NCCC #2
KF6ZWZ	AL	CA	76	81	47	204	35	7140	NCCC #2
W6SJ	*RANDY	CA	62	79	46	187	34	6358	SCCC #1
NO6X	KEN	CA	62	53	23	138	33	4554	NCCC #3
W6RK	*RISTO	CA	41	75	11	127	31	3937	NCCC #2
KQ6ES	*JOHN	CA	45	40	14	99	24	2376	SCCC #2
N6WG	**BOB	CA	33	35	24	92	22	2024	NCCC #2
N6NF	*TOM	CA	3	44	26	73	27	1971	
K6NV	BOB	CA	22	3	33	58	27	1566	NCCC #3
K6EY	*BECKY	CA	0	38	10	48	18	864	SCCC #1
K1USC	*TONY	CA	15	24	9	48	14	672	SCCC #2
N6TW	*LARRY	CA	1	10	22	33	10	330	SCCC #2
W6NOW	*JUAN	CA	5	1	0	6	4	24	
N6TR	TREE	OR	105	132	130	367	43	15781	Corner Pocketeers
K6LL	DAVE	AZ	123	119	94	336	41	13776	SCCC #1
NK7U	JOE	OR	67	105	112	284	46	13064	NCCC #1
K4XU	DICK	OR	81	97	108	286	41	11726	
KO7AA	BILL	AZ	91	101	75	267	38	10146	
N0AX	*ED	WA	83	85	88	256	39	9984	Corner Pocketeers
K7NV	KURT	NV	100	99	51	250	38	9500	NCCC #1
KL7WV	TIM	AK	73	86	63	222	35	7770	North Coast
N7WA	*MIKE	WA	65	80	63	208	37	7696	Corner Pocketeers
KN5H	STEVE	AZ	67	56	72	195	35	6825	
KI7Y	*JIM	OR	40	83	38	161	34	5474	Corner Pocketeers
W7YS	*BILL	AZ	70	26	24	120	31	3720	Azenmokers
K7WA	*JIM	WA	39	59	21	119	31	3689	Corner Pocketeers
NG7Z	*PAUL	WA	42	6	67	115	31	3565	Corner Pocketeers
N7LOX	*BRIAN	WA	62	16	0	78	28	2184	Corner Pocketeers
AB7RW	*PHIL	WA	10	15	36	61	28	1708	
KB7Q	**GENE	AZ	43	2	28	73	21	1533	
W3CP	*JIM	OR	11	19	28	58	25	1450	
KL7RA	RICH	AK	34	10	2	46	16	736	
WC7S	**ED	WY	7	13	3	23	10	230	
N7EIE	*LEROY	WA	4	3	5	12	8	96	

Call	Name	QTH	20	40	80	QSO	Mlt	Score	Team
KW8N	BOB	OH	62	89	90	241	44	10604	
W1NN	HAL	OH	53	73	109	235	40	9400	
N8EA	*JOE	MI	51	63	78	192	39	7488	
N4ZR	*PETE	WV	44	74	79	197	38	7486	PVRC/FRC #2
K8MR	JIM	OH	36	61	90	187	39	7293	
K8BB	DON	MI	45	51	102	198	36	7128	
W8TM	*PAUL	OH	27	52	44	123	35	4305	
W8WTS	*JIM	OH	23	27	53	103	28	2884	
W8UE	*TED	MI	4	14	36	54	31	1674	
N9RV	PAT	IN	92	126	113	331	44	14564	Dead Lizards
W9RE	MIKE	IN	93	99	119	311	42	13062	Dead Lizards
K9NW	MIKE	IN	74	86	134	294	42	12348	
AG9A	MARK	IL	69	118	98	285	40	11400	Dead Lizards
N9CK	STEVE	WI	61	98	104	263	41	10783	Dead Lizards
WT9U	JIM	IN	46	82	91	219	41	8979	
K9BGL	KARL	IL	79	46	93	218	41	8938	
KA9FOX	*SCOTT	WI	58	81	101	240	37	8880	Dead Lizards
K9QVB	*JOHN	IL	52	74	53	179	38	6802	
K9KM	*HOWIE	IL	17	52	62	131	36	4716	Dead Lizards
N9HZ	*BRENT	IN	17	15	68	100	36	3600	
K9ZO	RALPH	IL	0	0	55	55	27	1485	Dead Lizards
WW9R	*PAT	WI	2	16	21	39	22	858	Dead Lizards
K0OU	STEVE	MO	71	95	85	251	38	9538	Dead Lizards
WW2Y	*PETER	NE	62	75	102	239	34	8126	PVRC/FRC #1
W0BH	BOB	KS	81	54	86	221	36	7956	
K0AD	AL	MN	59	85	73	217	36	7812	MWA
W0ETT	*KEN	CO	78	40	80	198	37	7326	Coloradoans
K4IU	*FRED	MN	27	49	72	148	32	4736	
K0RI	LOU	CO	43	48	38	129	30	3870	Coloradoans
AC0W	*BILL	MN	16	39	44	99	30	2970	MWA
KS0T	*MIKE	MN	1	39	63	103	28	2884	MWA
N0SXX	**GARY	CO	43	30	33	106	26	2756	Coloradoans
K0PC	*PAT	MN	22	29	22	73	26	1898	
N0BK	*BRUCE	MN	2	0	13	15	13	195	
N0AT	RON	MN	4	0	0	4	4	16	
VA3NR	CHRIS	VE3	50	92	64	206	34	7004	
VE3RCN	*KEVIN	VE3	0	1	27	28	20	560	
XE1NTT	REX	XE	95	97	81	273	38	10374	SCCC #1
LZ9W	ILIYA	LZ	0	83	20	103	33	3399	EU LiDz
J79WI	*JIM	J7	27	53	18	98	28	2744	Dead Lizards
DJ1YFK	FAB	DL	0	30	12	42	21	882	EU LiDz
G4BUO	DAVE	G	0	8	0	8	6	48	

Guest Operators
AC6T (at W6RFU)
J79WI (WI9WI)
K3CR (LZ4AX)
K5OT (at K5NA)
K5TR (N5RZ)
K6AW (at N6RO)
KF6ZWZ (AD6E)
KL7WV (W3YQ)
LZ9W (LZ4UU)
N6PN (at W6JZH)
NK7U (KL2A)
W4EF (at W6UE)
W6YI (N6MJ)
W6YX (N7MH)

CW Sprint Records—Through Feb-2006

QTH	Pwr	Date	Call	20	40	80	QSO	Mul	Score
AK	H	Feb-2000	KL9A	139	63	0	202	47	9,494
AK	L	Feb-1995	KL7FAP	7	0	0	7	6	42
AK	Q	Sep-2003	N6TR/KL7	1	0	0	1	1	1
AL	H	Feb-2004	K4NO	115	98	67	280	48	13,440
AL	L	Sep-2003	K4IQJ	70	89	60	219	44	9,636
AL	Q	Feb-1998	KJ3V	0	8	0	8	7	56
AR	H	Feb-2000	K5GO	81	117	80	278	50	13,900
AR	L	Sep-1995	N8VV	49	54	38	141	39	5,499
AR	Q								
AZ	H	Feb-2000	K6LL	178	144	42	364	50	18,200
AZ	L	Feb-2002	K7UAZ (N4OGW)	126	87	23	236	45	10,620
AZ	Q	Feb-2006	KB7Q	43	2	28	73	21	1,533
CA	H	Feb-2003	W6EEN (N6RT)	150	147	81	378	54	20,412
CA	L	Feb-2004	N6MJ	106	158	77	341	50	17,050
CA	Q	Feb-2002	K6III	122	27	4	153	48	7,344
CT	H	Sep-2003	K1KI	153	132	84	369	50	18,450
CT	L	Sep-1999	NT1N	122	115	43	280	49	13,720
CT	Q								
CO	H	Feb-2003	N2IC	154	151	84	389	52	20,228
CO	L	Feb-2002	W0ETT	122	86	15	223	46	10,258
CO	Q	Sep-2005	N0SXX	30	72	8	110	34	3,740
DE	H	Sep-1989	KN5H	98	102	72	272	46	12,512
DE	L	Feb-2002	N8NA	107	79	76	262	45	11,790
DE	Q	Sep-1999	N3DEL	6	1	0	7	5	35
FL	H	Feb-2003	N2NL	151	139	67	357	55	19,635
FL	L	Sep-2003	K0LUZ	118	132	0	250	47	11,750
FL	Q	Sep-1999	N4BP	119	51	0	170	34	5,780

GA	QTH	Pwr	Date	Call	20	40	80	QSO	Mul	Score
A	H	Sep-2003	K4AAA (W4AN)	146	170	88	404	54	21,816
GA	L	Feb-2003	KU8E	42	124	81	247	48	11,856
GA	Q	Sep-2005	NA4BW	15	28	20	63	28	1,764
IA	H	Sep-2000	N0NI (AG9A)	126	136	89	331	43	15,093
IA	L	Sep-1998	K0RX	70	84	73	227	43	9,761
IA	Q								
ID	H	Feb-2000	W7ZRC	123	107	44	274	45	12,330
ID	L	Feb-2001	W7UQ (KL9A)	144	88	44	276	48	13,248
ID	Q								
IL	H	Sep-2003	AG9A	130	162	73	365	52	18,980
IL	L	Sep-2003	K9AA (K9PG)	112	119	59	290	48	13,920
IL	Q	Feb-1999	WO9S	43	66	32	141	41	5,781
IN	H	Sep-2003	N9RV	134	168	87	389	53	20,617
IN	L	Feb-2003	KJ9C	76	95	91	262	48	12,576
IN	Q								
KS	H	Sep-1982	K0VBU	50	103	78	231	42	9,702
KS	L	Sep-2004	K3LR	95	94	67	256	41	10,496
KS	Q								
KY	H	Sep-1998	K4LT	82	107	92	281	44	12,364
KY	L	Feb-2002	K4FXN	103	98	53	254	45	11,430
KY	Q								
LA	H	Feb-1995	W5WMU (K5GA)	105	115	86	306	48	14,688
LA	L	Feb-2004	W5EKF	43	67	18	128	40	5,120
LA	Q	Feb-2003	KC5R	11	51	49	111	35	3,885
MA	H	Feb-2003	K5ZD	136	144	85	365	54	19,710
MA	L	Feb-2003	K1HT	72	106	114	292	50	14,600
MA	Q	Sep-2003	NB1B	75	29	3	107	33	3,531
MD	H	Sep-1989	W3LPL	120	110	80	310	47	14,570

QTH	Pwr	Date	Call	20	40	80	QSO	Mul	Score
MD	L	Sep-2002	K3MM	95	95	71	261	40	10,440
MD	Q	Sep-2002	K3ESE	19	35	0	54	17	918
ME	H	Sep-2004	N4CW	94	81	44	219	44	9,636
ME	L	Feb-2003	NY1S	37	42	81	160	43	6,880
ME	Q								
MI	H	Feb-2003	N8EA	197	124	100	331	52	17,212
MI	L	Sep-2004	N8EA	59	111	82	252	44	11,088
MI	Q	Sep-2004	WA8REI	32	33	12	77	27	2,079
MN	H	Feb-2003	K0SR	98	127	83	308	50	15,400
MN	L	Sep-2003	NA0N	112	125	51	288	47	13,536
MN	Q	Sep-2002	N0UR	62	44	5	111	32	3,552
MO	H	Sep-1996	K4VX (WX3N)	104	133	95	332	46	15,272
MO	L	Feb-2002	KA0GGI	74	83	45	202	41	8,282
MO	Q	Sep-2004	NJ4X	61	99	38	198	41	8,118
MS	H	Feb-2000	WQ5L	123	136	58	317	49	15,533
MS	L	Feb-2005	WQ5L	95	101	57	253	40	10120
MS	Q	Feb-2002	WA2NYR	30	16	0	46	26	1,196
MT	H	Feb-1996	AB7BG	50	100	88	238	40	9,520
MT	L	Feb-1998	K7BG	79	105	89	273	43	11,739
MT	Q								
NC	H	Sep-2003	N4AF	98	129	115	342	49	16,758
NC	L	Feb-1995	K7GM	73	101	69	243	45	10,935
NC	Q	Feb-1998	W4WS (N4VHK)	13	23	13	49	24	1,176
ND	H	Feb-2002	WB0O	124	106	88	318	47	14,946
ND	L	Feb-1998	W0HSC (KB0O)	49	96	72	217	36	7,812
ND	Q								
NE	H	Feb-1991	KV0I	82	62	60	204	34	6,936
NE	L	Sep-2005	WW2Y	42	120	67	229	41	9,389
NE	Q	Feb-2003	W8TM	0	116	0	116	41	4,756
NH	H	Feb-2003	K1DG	129	119	83	331	50	16,550
NH	L	Feb-2002	K1BX	131	76	62	269	47	12,643
NH	Q	Feb-2003	AB1AV	2	0	0	2	2	4
NJ	H	Feb-2003	N2NT	88	158	134	380	51	19,380
NJ	L	Feb-1999	K2SQ	94	101	85	280	46	12,880
NJ	Q								
NM	H	Feb-2003	N6ZZ	133	153	65	351	52	18,252
NM	L	Feb-1999	N6ZZ	99	116	44	259	44	11,396
NM	Q	Feb-2002	W5YA	121	75	28	224	42	9,408
NV	H	Feb-2000	K7BV	106	141	43	290	50	14,500
NV	L	Feb-2000	KU7Y	88	116	0	204	45	9,180
NV	Q	Feb-1999	KU7Y	59	69	20	148	40	5,920
NY	H	Feb-2002	K2UA	113	123	85	321	50	16,050
NY	L	Sep-2004	K2KQ	80	94	56	230	46	10,580
NY	Q								
OH	H	Feb-2003	K8MR	72	128	109	309	52	16,068
OH	L	Sep-2003	K8NZ	78	114	93	285	46	13,110
OH	Q	Sep-2004	N8VW	43	86	50	179	42	7,518
OK	H	Sep-2003	K3LR	131	133	88	352	48	16,896
OK	L	Sep-1998	K5KA	79	89	62	230	40	9,200
OK	Q	Sep-2004	K5KA	91	69	52	212	43	9,116
OR	H	Feb-2003	N6TR	172	142	79	393	52	20,436
OR	L	Feb-2003	K4XU	121	110	46	277	47	13,019
OR	Q								
PA	H	Sep-2004	K3NM (N2NC)	131	116	91	338	49	16,562
PA	L	Sep-2003	W1NN	87	83	59	229	46	10,534
PA	Q								
RI	H	Feb-2002	KI1G	122	95	93	310	47	14,570
RI	L	Feb-2004	AJ1M	7	6	0	13	13	169
RI	Q								
SC	H	Sep-2003	W4OC	108	107	83	298	46	13,708
SC	L	Sep-2003	W4OC	87	92	116	295	50	14,750
SC	Q								
SD	H	Feb-2003	WD0T	115	124	108	347	47	16,309
SD	L	Sep-2002	K7RE	51	37	2	90	24	2,160
SD	Q								
TN	H	Sep-2003	W4PA	134	163	96	393	51	20,043
TN	L	Sep-2003	K4AMC	77	127	66	270	47	12,690
TN	Q								
TX	H	Feb-2000	N5TJ	148	137	96	381	52	19,812
TX	L	Sep-1998	N5TJ	141	111	80	332	46	15,272
TX	Q	Feb-2000	KG5U	122	60	22	204	47	9,588
UT	H	Sep-1991	K6XO	128	93	42	263	44	11,572
UT	L	Sep-1995	AH3C	59	91	65	215	38	8,170
UT	Q	Feb-2003	NC7J	101	96	38	235	45	10,575
VA	H	Sep-1989	KT3Y	95	122	79	296	48	14,208
VA	L	Feb-2003	K7SV	84	101	115	300	52	15,600
VA	Q								
VT	H	Feb-2004	NT1Y (W4PA)	116	175	47	338	48	16,224
VT	L	Sep-1999	W1EAT	38	33	33	104	35	3,640
VT	Q	Sep-2004	WT1L	18	2	18	38	21	798
WA	H	Feb-2003	W7WA	133	113	54	300	49	14,700
WA	L	Feb-2003	K7RI (K7SS)	149	111	37	297	53	15,741
WA	Q	Feb-2002	K7RI (K7SS)	109	112	19	240	45	10,800
WI	H	Feb-2000	K9AA (K9PG)	94	169	69	302	55	16,610
WI	L	Feb-1999	K9AA (K9PG)	96	109	67	272	47	12,784
WI	Q	Feb-2002	N9NE	69	66	21	156	40	6,240
WV	H	Feb-2002	N4ZR	69	100	117	286	48	13,728
WV	L	Sep-1998	K3LR	62	93	64	219	39	8,541
WV	Q	Sep-2003	K5IID	49	52	42	143	34	4,862
WY	H	Sep-1999	K7KU (N2IC)	132	117	63	312	48	14,976
WY	L	Feb-2004	KO7X	57	142	28	227	47	10,669
WY	Q	Feb-2003	WC7S	26	16	3	45	22	990
VE1	H	Feb-2004	VO1AU	36	79	0	115	40	4,600
VE1	L	Sep-2000	VE9DX (K5NZ)	99	56	28	183	40	7,320
VE1	Q								
VE2	H	Sep-1988	VE2ZP	75	98	41	214	41	8,774
VE2	L	Feb-2003	VE2AWR	49	77	26	152	39	5,928
VE2	Q								
VE3	H	Feb-2000	VE3EJ	90	93	87	270	50	13,500
VE3	L	Feb-2003	VE3NE	71	43	108	222	49	10,878
VE3	Q								
VE4	H	Sep-2003	VE4/WB0O	136	130	0	266	45	11,970
VE4	L	Feb-2003	VE4XT	38	42	6	86	32	2,752
VE4	Q								
VE5	H	Sep-2000	VE5DX	122	92	50	264	43	11,352
VE5	L	Feb-2003	VE5SF	106	119	12	237	49	11,613
VE5	Q								
VE6	H	Feb-2000	VE6EX	228	43		9,804		
VE6	L	Sep-1999	VE6EX	117	64	14	195	46	8,970
VE6	Q								
VE7	H	Feb-2000	VA7RR	151	128	37	316	48	15,168
VE7	L	Sep-2001	VE7QO	87	5	21	113	37	4,181
VE7	Q								
VE8	H	Feb-2000	VY1JA	36	0	0	36	22	792
VE8	L								
VE8	Q								
4U1	H	Feb-1985	4U1UN (W2TO)	3	52	15	70	23	1,610
4U1	L								
4U1	Q								
8P	H	Sep-2002	8P9JG (N5KO)	164	105	8	277	42	11,634
8P	L								
8P	Q								
C6	H								
C6	L	Feb-1999	C6AKP	15	4	2	21	14	294
C6	Q								
HH	H	Sep-1996	HH2AW	48	61	30	139	33	4,587
HH	L								
HH	Q								
HI	H	Feb-1991	HI8DMX	0	40	0	40	19	2,420
HI	L								
HI	Q								
HP	H								
HP	L	Feb-2000	HP1AC	50	14	0	64	30	1,920
HP	Q								
J7	H								
J7	L	Feb-2006	J79WI (W9WI)	27	53	18	98	28	2,744
J7	Q								
KP4	H								
KP4	L	Feb-2004	NP4Z	49	150	54	253	48	12,144
KP4	Q	Feb-2004	K1ZZ/KP4	1	18	3	22	14	308
TG	H								
TG	L	Sep-2001	TG9/N5KO	150	0	0	150	42	6,300
TG	Q								
V4	H	Feb-1996	V40Z (AA7VB)	0	21	33	54	23	1,242
V4	L								
V4	Q								
VP2E	H	Feb-1996	VP2E/KJ4HN	2	66	0	68	30	2,040
VP2E	L								
VP2E	Q								
VP9	H	Feb-1985	W6OAT/VP9	43	93	66	202	31	6,262
VP9	L	Sep-2005	WA4PGM/VP9	77	59	17	153	36	5,508
VP9	Q								
XE	H	Sep-1990	XE2XA (WN4KKN)	134	127	44	305	47	14,335
XE	L	Sep-2003	XF1K (N6AN)	113	85	39	237	47	11,139
XE	Q								
ZF	H	Sep-1992	ZF2KI (K1KI)	154	90	7	251	49	12,299
ZF	L								
ZF	Q								
9A	H	Sep-2000	9A6XX	29	0	0	29	19	551
CT	H	Sep-1998	CT1BOH	122	76	27	225	40	9,000
DL	H	Feb-2006	DJ1YFK	0	30	12	42	21	882
EA8	H	Feb-1994	EA1AK/EA8	15	21	0	36	21	756
F	H	Sep-1990	F/N6TR	100	78	18	196	38	7,448
G	H	Feb-2002	G4BUO	45	84	31	160	40	6,400
HC8	H	Feb-2000	HC8N (N5KO)	142	121	8	271	52	14,092
I	H	Sep-1998	IK0HBN	64	26	10	100	35	3,500
JA	H	Feb-1991	7J1AAI	13	0	0	13	9	117
KH6	H	Sep-1981	KH6NO	86	35	0	121	30	3,630
LU	H	Feb-2003	LU1FAM	74	18	0	92	35	3,220
LY	H	Sep-2000	LY4AA	107	56	0	163	38	6,194
OH	H	Sep-1998	OH1NOA	56	0	0	56	22	1,232
PY	H	Sep-1980	PY8ZPJ	28	1	0	29	14	406
UA9	H	Feb-2000	RU0SN	15	0	0	15	13	195
UN	H	Sep-2000	UP6F	13	0	0	13	10	130
VK	H	Sep-1994	VK5GN (N6AA)	48	0	0	48	22	1,056
ZD8	H	Sep-1990	ZD8Z (N6TJ)	116	93	19	228	43	9,804
ZS	H	Feb-2000	ZS1ESC (N6AA)	51	0	0	51	18	918

March 2006 NA RTTY Sprint Results

Ed Muns, WØYK

The 11th RTTY Sprint attracted over 126 participants despite poor propagation, noisy bands and reported "low activity." Fifty-six logs were submitted with 4959 QSOs and 43 different multipliers. There were another 25 call signs that didn't submit logs, yet had more than 10 QSOs across the 56 submitted logs. Scores were generally lower than some of our more memorable Sprints. Perhaps that is why many reported low activity in their soapbox comments. There were 20, 34 and 2 logs submitted for HP, LP and QRP respectively. Five stations operated SO2R. Nine self-proclaimed first-time RTTY sprinters were: AA3B, WF4W, W6RK, KO7AA, NG7Z, KU8E, WN0L (first RTTY contest!), KTØR and WØYK.

As with previous Sprints, power class didn't entirely stratify the results. W6YX (K6OWL op.) and KO1H activated the QRP category with W6YX coming in 11th overall. N6EE topped the 34 Low Power entrants, taking 6th overall. K6LL once again took High Power honors with 9 more QSOs than WØYK. (WØYK busted K8JWT's call sign, losing not only the QSO, but also the WV multiplier, and subsequently dropped into second place. Logging errors can be costly!)

SWACC handily beat NCCC #1 this time around in the team competition. Part of their secret was to get ten operators on the air, all of whom submitted logs. Seriously, team or club competition can help increase contest activity. As a personal example, the NCCC lobbied its members to get into the ARRL 2004 RTTY Round-Up in an effort to win the first club competition gavel for that contest. Yours truly had never operated RTTY, but succumbed to peer pressure and got into that contest as my first RTTY experience. I had fun and it turned me into a monster, as I traveled to Aruba to operate the 2005 and 2006 Round-Ups. This Sprint was my fifth RTTY contest. So contact your friends, form a team for the next RTTY Sprint and help increase activity for all of us to enjoy.

Log Checking

All logs were "Cabrillo enough" to run through the log checking software without modification. Thanks! Full exchange cross-checking was performed between all logs. There were a fair number of NIL (Not-In-Log) QSOs as well. That could be due to multiple stations on the same frequency getting confused about who is working who, but since the Sprint rules require both call signs to be sent in the exchange, this shouldn't occur very often. More probably it is due to a station deleting a QSO from their log, either inadvertently overwriting QSO data with the next exchange by forgetting to log the first contact, or thinking the QSO was invalid (no QSL message, poor copy, etc.) and striking it from their log. Make sure you have a really sound reason for deleting a QSO, because you risk causing another station to not only lose the QSO credit but also to incur a one-QSO penalty as well.

Your LCR (Log Checking Report) is available by sending an e-mail request to **w0yk@arrl.net**.

Golden Logs

KØJJR	63
K5WW*	59
NP3D/W2*	56
KO1H**	54
N8NA*	48
VE7FO*	36
KJ6RA*	30
5U7B	13
VE8NSD*	8

* designates Low Power
** designates QRP

"Missing" Logs (>10 QSOs)

Call sign	*Estimated QSOs*
K6NR	36
W7OM	184
K6RFA	70
W7WHY	86
KK5OQ	112
N7DQ	22
WB0WIV	18
K5NRC	86
K9DJ	24
WC8VOA	60
KD4POJ	26
WA6ES	56
NØLP	62
VA7CAB	62
WW3S	28
KEØLX	22
WØRAA	74
VE7MVF	54
NJ4F	26
N1WI	24
AI4FR	48
KØAMZ	194
K9MUG	26
N4BCB	46
KB3DZ	20

Top 10

	Score	*Band Changes*	*QSOs Lost*	*00Z*	*01Z*	*02Z*	*03Z*
K6LL	8470	4	7	59	58	59	52
WØYK	8388	4	1	44	62	56	53
AD4EB	6696	74	7	54	51	48	56
AD6WL	6230	19	6	46	45	50	24
K7WM	5632	5	21	41	40	46	32
*N6EE	5181	4	2	40	35	30	42
W7WW	4992	32	10	53	37	41	11
NB1B	4785	12	8	34	40	37	32
*W6OAT	4002	1	4	44	35	43	9
AA3B	3952	2	2	27	35	43	35
*K2PS	3864	2	3	40	19	24	45
**W6YX	3668	40	1	23	32	31	41

* designates Low Power
** designates QRP

NOTE: The hourly QSO numbers do not always add up to the overall QSO total due to a bug in the hourly reporting software that extracts all dupes, including legal RTTY Sprint dupes. We hope to fix this in future log checking.

Top 10 QSOs		Top 10 Mults		Top 10 Low Power		Top 10 QRP	
K6LL	242	WØYK	36	N6EE	5181	W6YX	3668
WØYK	233	AD6WL	35	W6OAT	4002	KO1H	1026
AD4EB	216	K6LL	35	K2PS	3864		
AD6WL	178	N6EE	33	W6FFH	3348		
K7WM	176	K7WM	32	KM6Z	2912		
NB1B	165	W7WW	32	N7UVH	2619		
N6EE	157	AD4EB	31	W6RK	2525		
W7WW	156	W6FFH	31	W7KB	2523		
AA3B	152	NB1B	29	VE3ESH	2461		
W6OAT	138	W6OAT	29	VE3IAY	2415		
K2PS	138	W7KB	29				

Dupes

"Legal dupes" (RTTY Sprint only) were a surprising low percentage of contacts. Perhaps this special RTTY Sprint rule is more psychological than real, but if it encourages activity that's good. It will remain in the rules for the next RTTY Sprint in October.

One log had /1, /2, /3, etc. appended to the logged call sign for each legal dupe on each band. While not a problem for log checking, it is unnecessary. The operator was probably adding the / n manually to keep his logging software from counting subsequent QSOs on the same band as dupes.

Real dupes were rare while legal dupes were common in many logs. However, the majority of real dupes were ones where there were only two intervening QSOs. This suggests that some operators may be erroneously thinking they can work a station again just three QSOs later. Of course they must wait until the fourth QSO in order to have three intervening QSOs to satisfy the legal dupe rule. K6LL and WØYK fell into a rhythm during the last half hour on 80 and worked each other almost every 4th QSO in both logs.

Remember that there must be at least three intervening QSOs in *both* logs for the legal dupe to be valid in *each* log. Four logs had a dupe removed because the other station did not have the required three intervening QSOs. However, it is probably faster to still work the QSO than to recognize that the received serial number is less than four above the last one received from that station … not to mention entering into a dialogue about not working each other because it is a real dupe! If everyone insures that they always have three intervening QSOs in their own log, then no one gets hurt.

Finally, remember that the three intervening QSO rule holds regardless of band. This often surprises operators who think their first QSO with a station on a new band can be within three log entries of that station on a prior band or even back-to-back contacts across bands. Not so, say the rules.

QSY Rule

There were a few infractions of the QSY rule, some by first-time Sprinters, but also some by others. Based on the QSO times, it appeared that people may have actually QSYed, tuned around for a while looking for someone to work, and inadvertently ended up back on their last QSO frequency. While understandable, it is still a rule violation.

October RTTY Sprint

The next RTTY Sprint takes place on 8 October 2006 (UTC). Let's get some more stations active. Please campaign within your local club to get more people on. Sprints are a great way to keep your station and your skills honed without taking a huge bite out of your weekend. The Sprint QSY rule really helps practice quick and accurate tuning on RTTY.

Team Competition

SWACC		*NCCC #1*		*SMC*	
AD6WL	6230	K6UM	1200	AA9DY	0
K5AM	225	KJ6RA	480	AI9L	0
K6LL	8470	N6EE	5181	K9WX	1296
K7WM	5632	WØYK	8388	N2BJ	1254
KE5OG	1078	W6OAT	4002	N9LF	429
KO7AA	1776	W6RK	2525		
N7UVH	2619	W6YX	3668	**Total**	**2979**
NB1B	4785	W6ZZZ	198		
W7WW	4992				
WA6BOB	1976	**Total**	**25,642**		
Total	**37,783**				

Scores

* designates Low Power
** designates QRP

Call Sign	*Name*	*QTH*	*20m*	*40m*	*80m*	*Qs*	*Mults*	*Score*	*Team*
NB1B	DENNIS	MA	27	90	31	165	29	4785	SWACC
KO1H	**JOHN	RI	4	40	10	54	19	1026	
KK1X	*JOHN	MA	4	17	16	39	17	663	
K2PS	*PETE	NJ	40	23	65	138	28	3864	
NP3D	*ANDREI	NY	9	13	32	56	17	1064	
AA3B	BUD	PA	26	82	36	152	26	3952	
N8NA	*KARL	DE	0	18	29	48	19	912	
KB3KGP	RANDY	PA	8	29	0	37	11	407	
AJ3M	MASA	MD	41	1	0	42	9	378	
AD4EB	JIM	TN	56	97	57	216	31	6696	
KU8E	*JEFF	GA	11	54	20	84	20	1660	
N4ZZ	DON	TN	55	41	0	97	17	1649	
WF4W	*RON	GA	17	32	1	52	15	780	
WA4OSD	*FRANK	TN	5	22	11	39	17	663	
K4GMH	MIKE	VA	0	46	0	49	11	539	
K5WW	*GERT	TX	20	33	0	59	19	1121	
KE5OG	*BILL	TX	46	3	0	49	22	1078	SWACC
K5AM	*MARK	NM	0	4	21	25	9	225	SWACC
WØYK	ED	CA	40	126	54	233	36	8388	NCCC #1
AD6WL	JIM	CA	52	116	1	178	35	6230	SWACC
N6EE	*RON	CA	52	59	39	157	33	5181	NCCC #1
W6OAT	*RUSTY	CA	55	79	0	138	29	4002	NCCC #1
W6YX	**MIKE	CA	23	64	41	131	28	3668	NCCC #1
W6FFH	*DON	CA	28	44	31	108	31	3348	
KM6Z	*VLAD	CA	40	31	44	119	26	2912	
W6RK	*RISTO	CA	34	52	8	101	25	2525	NCCC #1
WA6BOB	*BOB	CA	18	42	15	76	26	1976	SWACC
KJ6RA	*RICH	CA	0	11	19	30	16	480	NCCC #1
KG6ZHC	SHAWN	CA	4	13	11	28	14	392	
NC6P	*DAVE	CA	18	6	0	24	15	360	
W6ZZZ	MARK	CA	6	8	4	18	11	198	NCCC #1

Call Sign	*Name*	*QTH*	*20m*	*40m*	*80m*	*Qs*	*Mults*	*Score*	*Team*
K6LL	DAVE	AZ	66	116	48	242	35	8470	SWACC
K7WM	WAYNE	AZ	41	77	43	176	32	5632	SWACC
W7WW	RED	AZ	56	80	9	156	32	4992	SWACC
N7UVH	*PAT	ID	28	41	24	97	27	2619	SWACC
W7KB	*RICK	UT	29	13	45	87	29	2523	
NG7Z	*PAUL	WA	16	55	11	91	22	2002	
KO7AA	BILL	AZ	26	47	0	74	24	1776	SWACC
K6UM	*STEVE	OR	12	28	17	60	20	1200	NCCC #1
N8GU	*BOB	OH	16	60	4	83	19	1577	
K9WX	*TIM	IN	18	46	8	72	18	1296	SMC
N2BJ	*BARRY	IL	11	52	2	66	19	1254	SMC
N9LF	*TIM	IN	8	22	2	33	13	429	SMC
KTØR	DAVE	MN	5	37	19	64	26	1664	
KØJJR	JOE	MN	24	30	9	63	23	1449	
WNØL	*LANCE	NE	19	41	4	66	21	1386	
NØAT	*RON	MN	6	6	15	28	16	448	
VE3ESH	*IAN	VE3	17	41	44	107	23	2461	
VE3IAY	*RICH	VE3	11	44	38	105	23	2415	
VE5CPU	BART	VE5	59	40	0	102	23	2346	
VA7ST	*BUD	VE7	14	50	6	73	24	1752	
VE7FO	*JIM	VE7	1	23	10	36	16	576	
VE7AXU	*JOHN	VE7	0	12	2	14	6	84	
VE8NSD	*GARTH	VE8	8	0	0	8	6	48	
F4JRC	THIERRY	F	0	23	0	23	13	299	
5U7B	BRUCE	5U	9	4	0	13	5	65	

NOTE: The band QSO numbers do not always add up to the overall QSO total due to a bug in the band reporting software that extracts all dupes, including legal RTTY Sprint dupes. We hope to fix this in future log checking.

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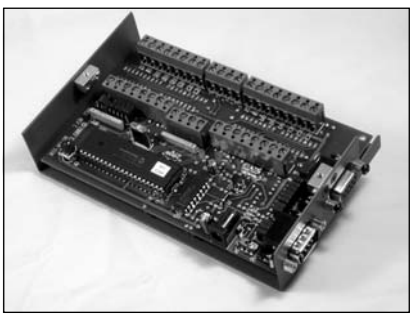

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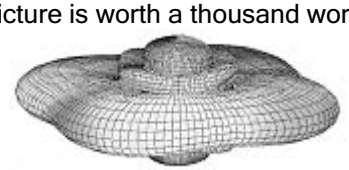

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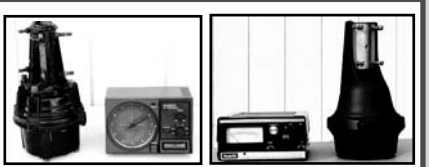

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.500"	$.90/ft	1.375"	$1.85/ft
.625"	$1.00/ft	1.500"	$2.05/ft
.750"	$1.10/ft	1.625"	$2.35/ft
.875"	$1.20/ft	1.750"	$2.60/ft
1.000	$1.30/ft	1.875"	$2.85/ft
1.125	$1.45/ft	2.000"	$3.10/ft
		2.125"	$3.60/ft

EXTRUDED 6061-T6

		.188" rod	$.35/ft
.250" rod	$.50/ft	4"x.375" bar	$6.50/ft
2"x.125"	$4.50/ft	2"x.250"	$8.00/ft

6' OR 12' LENGTHS. 6' LENGTHS SHIP UPS.

ANTENNA ROTATORS

M2 OR-2800PDX	$1379
Hygain HAM IV	$499
Hygain T2X Tailtwister	$569
Yaesu G-450A	$249
Yaesu G-800SA/G-800DXA	$329/409
G-1000DXA	$499
Yaesu G-2800SDX	$1089
Yaesu G-550	$299
Yaesu G-5500	$599

ROTATOR CABLE

R62 (#18), HD 6 conductor	$.39/ft.
R81/82/84, 8 cond.	$.29/ft./.49/ft./.99/ft.

ROHN TOWER

25G/45G/55G	$99/209/259
25AG2/25AG3/25AG4	$119/149/129
45AG2/45AG4	$249/249
AS25G/AS455G	$49/109
BPC25G/BPC45G/BPC55G	$89/119/129
BPL25G/BPL45G/BPL55G	$99/189/219
GA25GD/GA45GD/GA55GD	$99/139/159
GAR30/GAS604	$39/49
SB25G/45/55	$59/109/149
SB25G5/SBH25G	$79/139
TB3/TB4	$139/159

PLEASE CALL FOR MORE ROHN ITEMS.

COMET ANTENNAS

GP3, 2m/70cm Vertical	$99
GP6, 2m/70cm Vertical	$149
GP9 2m/70cm Vertical	$189
GP15, 6m/2m/70cm Vertical	$159
GP98, 2m/70cm/23cm Vertical	$189

DIAMOND ANTENNAS

X50A, 2m/70cm Vertical	$109
X200A, 2m/70cm Vertical	$149
X510MA 2m/70cm Vertical	$195
X500HNA 2m/70cm Vertical	$259
X700HNA 2m/70cm Vertical	$399
V2000A 6m/2m/70cm Vertical	$172

COAX CABLE

RG-213/U, (#8267 Equiv.)	$.55/ft
RG-8X, Mini RG-8 Foam	$.35/ft
RG-213/U Jumpers	Please Call
RG-8X Jumpers	Please Call

CALL FOR MORE COAX/CONNECTORS.

TIMES MICROWAVE LMR® COAX

LMR-400	$.69/ft
LMR-400DB Direct Bury	$.89/ft
LMR-400 Ultraflex	$1.05/ft
LMR-600	$1.39/ft
LMR600 Ultraflex	$2.35/ft

CALL FOR MORE SIZES & CONNECTORS.

TRYLON "TITAN" TOWERS

SELF-SUPPORTING STEEL TOWERS

T200-64	64', 15 square feet	$1489
T200-72	72', 15 square feet	$1819
T200-80	80', 15 square feet	$2169
T200-88	88', 15 square feet	$2529
T200-96	96', 15 square feet	$2969
T300-88	88', 22 square feet	$2869
T400-80	80', 34 square feet	$2759
T500-72	72', 45 square feet	$2629
T600-64	64', 60 square feet	$2499
T700-56	56', 80 square feet	$2349

MORE TRYLON TOWERS AVAILABLE.

M2 VHF/UHF ANTENNAS

6M5X/6M7JHV	$259/319
6M2WLC/6M9KHW	$549/589
2M4/2M7/2M9SSBFM	$119/129/149
2M12/2M5WL	$209/249
2M5-440XP, 2m/70cm	$219
440-470-5HD/420-50-11	$169/119
432-9WL/432-13WLA	$219/299
440-18/440-21ATV	$159/179

M2 SATELLITE ANTENNAS

2MCP14/2MCP22	$209/299
436CP30/436CP42UG	$299/349

CALL FOR MORE IN-STOCK M2 ITEMS.

TOWER HARDWARE

3/8"EE/EJ Turnbuckle	$15/16
1/2"x9"EE/EJ Turnbuckle	$21/23
1/2"x12"EE/EJ Turnbuckle	$24/26
3/16"/1/4" Big Grips	$5/6
3/16"EHS-500'/1/4"EHS-500'	$119/149

PLEASE CALL FOR MORE HARDWARE.

HIGH CARBON STEEL MASTS

5 FT x .12" / 5 FT x .18"	$45/59
11 FT x .12" / 11 FT x .25"	$80/199
12 FT x .18" / 17 FT x .12"	$159/149
20 FT x .18" / 22 FT x .12"	$249/199
23 FT x .25" / 24 FT x .18"	$369/299

UNIVERSAL ALUMINUM TOWERS

4-40'/50'/60'	$619/879/1249
7-50'/60'/70'	$1119/1599/2079
9-40'/50'/60'	$869/1249/1719
12-30'/40'	$659/1029
15-40'/50'	$1159/1629
16-60'/80'	$1529/3529
21-50'/60'/70'	$1849/2459/3059
23-30'/40'	$1029/1509
35-40'	$1739

BOLD IN PART NUMBER SHOWS WIND LOAD CAPACITY. SHIPS DIRECT FROM THE FACTORY TO SAVE YOU MONEY!

HYGAIN ANTENNAS

AV18HT Hightower	$739
DIS71/72	$269/569
TH3JRS/TH3MK4	$319/399
TH5MK2/TH2MK3	$659/319
TH7DX/TH11DX	$749/995

MFJ

259B/269, Analyzers	$259/339
948/949E, Tuners	$139/159
969, HF–6m Tuner	$189
986, 3kW Tuner	$319
989D, Deluxe 3kW Tuner	$339
991/993 Autotuners	$169/229

PHILLYSTRAN GUY CABLE

HPTG1200I	$.45/ft
1200 END KIT	$3.60
HPTG2100I	$.59/ft
PLP2738 Big Grip (2100)	$7.00
HPTG4000I	$.89/ft
PLP2739 Big Grip (4000)	$9.50
HPTG6700I	$1.29/ft
PLP2755 Big Grip (6700)	$13.50
HPTG11200	$1.89/ft
PLP2758 Big Grip (11200)	$16.00

PLEASE CALL FOR HELP SELECTING THE PHILLYSTRAN SIZE FOR YOUR PROJECT.

US TOWER CRANK-UPS

MA40/MA550	$1099/1699
MA770/MA850	$2799/4349
TMM433SS/HD	$1479/1789
TMM541SS	$1939
TX438, 38' Crankup Tower	$1379
TX455, 55' Crankup Tower	$1899
TX472, 72' Crankup Tower	$3139
TX489MDPL, 89' Motorized HD	$8239
HDX538, 38' Extra Heavy Duty	$1649
HDX555, 55' Extra Heavy Duty	$2889
HDX572MDPL 72' Motorized	$7549

SHIPPED DIRECT TO SAVE YOU MONEY!

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9 AM–5 PM CENTRAL

SATURDAY HOURS:
9 AM–12 NOON CENTRAL

CREDIT CARDS:
M/C, VISA, DISCOVER

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