NCJ
NATIONAL CONTEST JOURNAL
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Volume 27 Number 6

- China Multiplier Secured
- Isle of Man, GD4UOL—1988 to 1998
- *Results*, July '99 RTTY NAQP
- Amateur Radio in Bulgaria
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- *NCJ Profiles*: N6TV

If it seems that collecting BY multipliers is just a bit easier this contest season, perhaps old Sol deserves only *part* of the credit.

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American Radio Relay League
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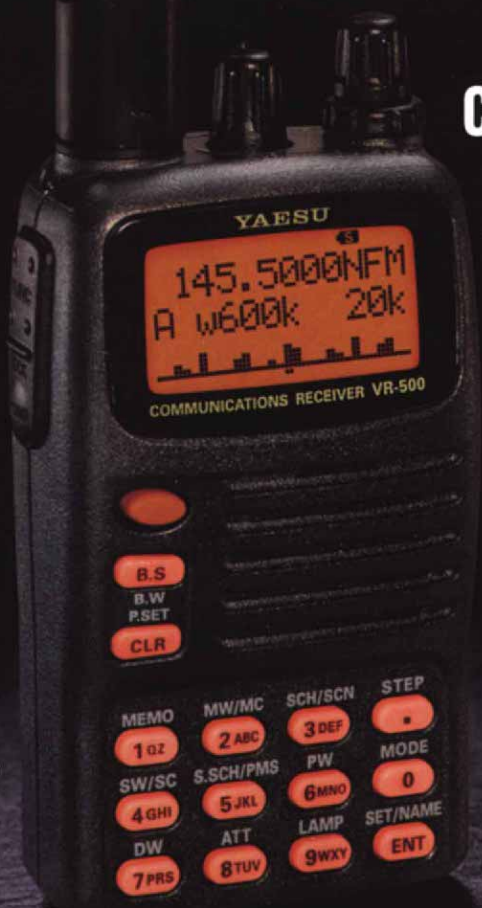

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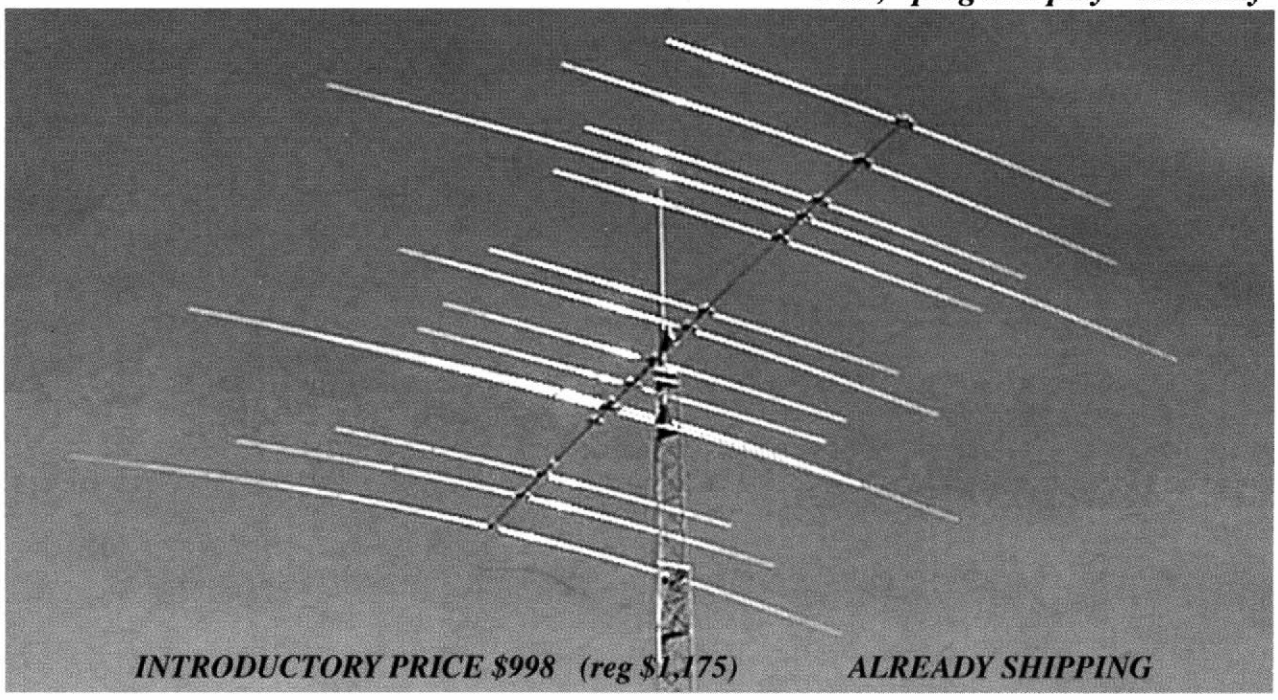

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Editorial

Dennis Motschnebacher, K7BV
k7bv@aol.com

Let the Fun Begin

I trust that by now many of you are already taking your first breather between the winter season contests. We are all praying that conditions will see a big up turn and we will experience some of those fantastic openings on 10 and 15 meters we recall from past cycles. I think that almost everyone agrees that it has been a fairly strange upside of the sunspot cycle so far. We are all hoping that things will settle out some for this contest season.

Call for Articles

You haven't seen that plea for a while, have ya?! Although we still have a small backlog of articles for upcoming issues of the *NCJ*, it is again time to ask you to consider preparing an article for your fellow contesters describing your operating techniques, your equipment, your contesting adventures or any other subject that relates to contesting. We have had some really fun and informative articles covering a wide range of contesting subjects in 1999 and I would very much like to see 2000 be an even more enjoyable year for our *NCJ* readership.

One does not have to be a Top Ten contester or an accomplished writer to prepare an article for the *NCJ*. If you have an idea for an article, just let me know and I will assist you in molding it into one that will please you *and* the eager crowd that reads our favorite contest magazine.

Why not make 2000 the year you come out of the closet and become an *NCJ* "*Participant*" instead of just a silent reader? I promise you that you will enjoy the experience.

NCJ Contest Committee

The *NCJ* Contest Committee is now a reality with the five *NCJ* contest managers—Rick, K7GM; Bob, K6ZZ; Bruce, WA7BNM; Ron, K5DJ; and Mark, AG9A—holding positions on the committee. They are taking a hard look at the Sprint and NAQP rules right now and will be looking for your comments in the very near future. Watch for information on how to communicate with the committee directly via the new *NCJ* Web site.

The *NCJ* Web site

Bruce, WA7BNM, is working on the new *NCJ* Web site. I expect that a formal introduction will appear in the January/February issue of this magazine. He promises a useful site for all of us—including many new features that will support and enhance your *NCJ* magazine. I am as eager as the rest of you to see the new site up and running!

On the Personal Side...

I have committed to continue performing Editor duties for the *NCJ* for at least one more year since I have not accomplished all my goals yet. I trust you will stick with me and collectively we shall continue to grow the value of the magazine and our contests through this year.

My apologizes to those who may have noticed that I appeared to be a bit "distant" the last few months. I experienced a major down turn in my business and had to hit the grind stone to get it back cook'n again. I hate it when my work interferes with my hobby—but such is life from time to time. Things are back on track at the office so life has regained balance for me. Thanks for your patience.—73, Dennis, K7BV

Our Cover

A collection of colorful QSL cards from the People's Republic of China.

BY1DX is China's first corporate-sponsored Amateur Radio club station and was developed through a partnership between the Nokia Corporation and the Beijing Chaoyang Youngsters' Activity Center. The Center is open to Beijing's primary and intermediate school students and provides a wide range of programs related to science and the arts.

B1A was a special event station activated for the 1998 running of the CQ WW SSB Contest. The team, made up of Chinese and Finnish operators, racked up an impressive total of nearly 9,000 QSOs and earned over 11 million points.

BT1WW, hit the airwaves for the 1999 CQ WW 160-Meter DX contest. The gang at the Chinese Radio Sports Association received a special permit for this operation from the Chinese Government.

Their dipole antenna was suspended from the roof of the Beijing World Trade center some 300 feet above street level. Noise levels were high—but so was the excitement—as hams worldwide scrambled for a chance to work this rare multiplier.

See *China Multiplier Secured* and find out what's behind this increase in Chinese Amateur activity. ■

China Multiplier Secured

Martti Laine, OH2BH

Two Finnish contesters, OH2BH and OH2PM, have been based in Beijing, China for quite some time. They have been active from Macau (signing XX9X/XX9TRR/XX9TZ) in most of the contests, and have provided plenty of contacts to those in need.

The 1998 running of the CQWW SSB contest saw a significant increase in Chinese contesting activity when B1A (a multi-multi operation) and B1Z (multi-single) hit the airwaves from downtown Beijing.

During this historic weekend, B1A racked up some 9,000 QSOs and served as an introduction for many of its Chinese operators to the fine art of contesting.

You can look forward to a more permanent increase in activity from this region! On April 18,1999, Nokia China signed a sponsorship agreement with the Chayong District (Beijing) Youth Activity Center leading to the establishment of a corporate-sponsored radio club at the Center. The station—BY1DX—is on the air and has been very active ever since.

As of June 1999, more than 10,000 QSOs have been completed from the new station. These include those made by OH2BH while participating in the CQ WPX SSB Contest and OH2PM's operations during the CQ WPX CW Contest.

Another notable event was the culmination of an Amateur Radio course organized by the club. Some 15 Chinese amateurs were trained. Many of these newly minted hams have already had the opportunity to hit the bands from BY1DX while making preparations for their own stations. (All BY1DX QSLs are currently being handled by OH2BH via his Finland call book address.)

Currently, there are over 70 Class 1 amateurs—identified by their BA prefix—licensed in China. They are allowed to use up to 500 W and enjoy full access to the HF, VHF, UHF and 1.2 GHz amateur bands.

There are about 150 Class 2 licensees. These amateurs hold calls with a BD prefix and are limited to 100 W with some restrictions on their frequency privileges.

In addition to these, there are some 1,000 Class 3 (and Class 3 VHF/UHF) licensees—identifiable by their BG prefix. They are permitted to run up to 3 W on small portions of 80, 40, 15 and 10 meters and are also allowed to operate on segments of 6 and 2 meters, and 70 and 23 cm.

The BY prefix is assigned only to club stations. There are presently about 120 such clubs located throughout China.

Opening ceremonies for BY1DX.

A joint strategy session for the B1A/B1Z groups. From left: BA1DU, BA1KA, BA1FB, OH2KI, BA1AJ, OH2PM, OH6LI, OH2BH, BG1SUN, BG1BF, BZ4DCH, BD1CM, OH2TA, BA1RB and BZ1OM.

The well-equipped club station.

Students receiving instructions on station operation.

From a Nokia Corporate Press Release dated 18th April 1999...

Nokia China has made arrangements with the Beijing Chaoyang Youngsters' Activity Center to enter into a sponsorship agreement to support the Center with Amateur Radio training materials and radio equipment, and to participate in the actual classroom training of youth of the Chaoyang district, Nokia's home district in Beijing. Through this cooperative effort, Amateur Radio station BY1DX has been set up at the center and is now open to the local youth and licensed Nokia personnel.

The Center is part of a China-wide extracurricular educational system that provides meaningful activities for the young people of China in the areas of science and the arts, in addition to a variety of technical activities. The Center is located in the eastern part of Beijing and has 37 classrooms plus related laboratories and computer rooms to support these activities.

Mr. Wang Xim Min, Secretary General of the Chinese Radio Sports Association (*CSRA*) states "Entering into this sponsorship agreement with Nokia is a new approach in Amateur Radio in China in our efforts to provide early exposure for Chinese youth to telecommunications and electronics, obviously guiding their road to their professional careers."

In a speech at the opening ceremony for the station, Mr. Han In Sheng, director of the center, underlined the value of this cooperation "in not only assisting the center with its extracurricular activities but also providing the Chinese youth with a window to the world through local joint activities with Nokia personnel."

In his opening remarks, Mr. Pertti Simovaara, General Manager of Nokia Mobile Phones China, attributed early innovations made at Nokia in Finland to enterprising radio amateurs and expressed hope that amateur activities will lend similar support to Chinese society. "It is an honor for Nokia to play a role in Chaoyang, the company's home base in China, and to support Chinese youth in their entry to the world of telecommunications."

Nokia is a leading supplier of mobile phones and network equipment to China's telecommunications market. Nokia has seven production sites in China, as well as a global research and development unit and offices nationwide, and employs a total of over 3,000 people.

The Chinese Amateur Bands

160 Meters

Class 1, 2	1.800 - 2.000 MHz SSB/CW/DATA/SSTV, FAX

80 Meters

Class 1	3.500 - 3.575 MHz CW/DATA
	3.575 - 3.900 MHz SSB/CW/DATA/SSTV, FAX
Class 2	3.525 - 3.575 MHz CW/DATA
	3.800 - 3.900 MHz SSB/CW/DATA/SSTV, FAX
Class 3	3.570 - 3.575 MHz CW
	3.840 - 3.860 MHz AM/SSB/CW

40 Meters

Class 1	7.000 - 7.040 MHz CW/DATA
	7.040 - 7.100 MHz SSB/CW/DATA/SSTV, FAX
Class 2	7.025 - 7.040 MHz CW/DATA
	7.040 - 7.100 MHz SSB/CW/DATA/SSTV, FAX
Class 3	7.050 - 7.075 MHz AM/SSB/CW

30 Meters

Class 1, 2	10.100 - 10.140 MHz CW/DATA
	10.140 - 10.150 MHz SSB/CW/DATA/SSTV, FAX

20 Meters

Class 1	14.000 - 14.100 MHz CW/DATA
	14.100 - 14.350 MHz SSB/CW/DATA/SSTV, FAX
Class 2	14.035 - 14.100 MHz CW/DATA
	14.225 - 14.350 MHz SSB/CW/DATA/SSTV, FAX

17 Meters

Class 1,2	18.068 - 18.110 MHz CW/DATA
	18.110 - 18.168 MHz SSB/CW/DATA/SSTV, FAX

15 Meters

Class 1	21.000 - 21.200 MHz CW/DATA
	21.200 - 21.450 MHz SSB/CW/DATA/SSTV, FAX
Class 2	21.000 - 21.200 MHz CW/DATA
	21.300 - 21.450 MHz SSB/CW/DATA/SSTV, FAX
Class 3	21.025 - 21.200 MHz CW
	21.400 - 21450 MHz AM/SSB/CW

12 Meters

Class 1,2	24.890 - 24.930 MHz CW/DATA
	24.930 - 24.990 SSB/CW/DATA/SSTV, FAX

10 Meters

Class 1, 2	28.000 - 28.200 MHz CW/DATA
	28.200 - 28.500 MHz SSB/CW/DATA/SSTV, FAX
	28.500 - 29.000 MHz SSB/CW
	29.000 - 29.300 MHz AM/SSB/CW/DATA/SSTV
	29.300 - 29.550 MHz Satellite
	29.550 - 29.700 MHz AM/SSB/FM
Class 3	28.105 - 28.335 MHz CW/SSB
	29.550 - 29.700 MHz AM/SSB/FM
Class 3 (V/U)	29.550 - 29.700 MHz AM/SSB/FM

6 Meters

Class 1, 2	50.000 - 51.000 MHz CW/SSB/DATA
	51.000 - 54.000 MHz AM/SSB/CW/DATA/FM/ SSTV, FAX
Class 3 (V/U)	50.000 - 51.000 MHz CW/SSB
	51.000 - 54.000 MHz AM/SSB/CW/FM

2 Meters

Class 1, 2	144.000 - 144.100 MHz CW
	144.100 - 145.000 MHz AM/SSB/CW/DATA/FM/ SSTV, FAX/Repeater
	145.800 - 146.000 MHz SSB
	146.000 - 148.000 MHz AM/SSB/CW/DATA/FM/ SSTV, FAX/Repeater
Class 3 (V/U)	144.000 - 144.100 MHz CW
	144.100 - 145.800 MHz SSB/CW/FM

70 Cm

Class 1, 2	430.000 - 433.100 MHz CW
	433.100 - 435.000 MHz AM/SSB/CW/DATA/FM/ SSTV, FAX/Repeater
	435.000 - 438.000 MHz Satellite/ATV
	438.000 - 440.000 MHz AM/SSB/CW/DATA/FM/ SSTV, FAX/Repeater
Class 3 (V/U)	430.000 - 433.100 MHz CW
	433.100 - 435.000 MHz AM/SSB/CW/FM
	438.000 - 440.000 MHz AM/SSB/CW/FM

23 Cm

Class 1, 2	1.260 -1.273 GHz AM/SSB/FM/SSTV, FAX/ Repeater/Satellite/ATV
	1.273 - 1.290 GHz Satellite/ATV
	1.290 - 1.300 GHz AM/SSB/CW/DATA/FM/SSTV, FAX/Repeater
Class 3 (V/U)	1.260 - 1.273 GHz AM/SSB/FM
	1.290 - 1.300 GHz AM/SSB/CW/FM

Contester and the DX Respondents

Burton E. Eaton N2FYT
3000-15 Stevens St
Oceanside, NY 11572

I met an interesting gentleman at the recent Dayton gathering: Burton, N2FYT. Burton is a DXer. He felt that a lot of contesters are not aware of what it takes to get a contact from non-contesters like him who tune around listening to our seemingly chaotic operations on contest weekends. He volunteered to tell me what he thought you and I needed to know to insure that we get his contact as well as ones from others like him. The following is taken from his letter to me—BV.

This is a letter addressed to the contest community from a DXer. Here are a few suggestions to help you obtain higher scores by using the DX-oriented world. I am a DXer long past DXCC and closing in on 200. I live in a suburb 10 miles east of JFK Airport and 19 miles east of Times Square. It is a typical location in an imperfect world. Like most city dwellers I have a narrow back yard.

Believe me when I comment that a backyard vertical antenna is my only way to go. No roof tops, no towers, no beams. Every one of the other 59 town house owners in my little community is convinced that it is my fault that he hears me on his TV, stereo or clock radio. To keep the peace, I have my own limitations on power output and operating hours. I have a medium-sized tube amplifier. My feed line runs 100 feet to the back of my lot from my basement shack.

I belong to the local DX Association, and like most of its members I am turning 70 years of age. I flew in four-engine piston aircraft too many hours and my hearing is not great. I don't think too fast. Don't laugh at me—I am typical of the hams you need for points. After several hours on the bands my energy level goes down, so I am only a part-time contester.

I want to help you with your score while at the same time I want to help myself work DX. We have a community of interest. I am not sure that you understand that. Why else would you be making so many mistakes?!

Please have a strong, narrow signal. Be sure that the bandwidth that you are transmitting is appropriate for the mode. Too many signals are too wide and don't go as far as they could with their usable energy. I can only respond if I hear and understand you. Each large city and major airport has an electronic mask. Your signal must be strong and clear to penetrate. Please generate crisp, clear audio. Many of you sound like Mickey Mouse. It can be tough to make out your call sign.

It is apparent that a number of contest stations are using a foot switch or VOX that is not properly synchronized with their voice. Wait a fraction of a second—you are cutting off the first two letters of your call sign. Many a time I have had to wait for a call sign to come up on packet before I can verify that I have the correct call sign. I will not try to work you unless I know your complete call sign. This can be especially tough if you slur your speech or you mispronounce phonetics. Don't invent new phonetics. Hit the first letters/numbers hard. Some contesters accentuate the wrong half of the word.

Some contesters are apparently hyperactive. Slow down. Speak slowly. Enunciate. Stop rapid firing your call signs over and over. Space your calls far enough apart to give me time to answer.

I need to understand your call so that I can send you a QSL card—that is the reason I'm in the contest in the first place. I may need a card from your country. Send slowly, clearly and allow return breaks.

I always answer the call of a familiar contest station that has returned an earlier QSL card. No card, no call. Over the years working these stations has become my primary obligation contest after contest. I owe them my points as a return favor.

I am a small-time DXer. I have a life. I am trying to provide a look into what you can do to easily increase your score. Your increased scores give me more DX. When I work you with my vertical from my minor league station, please send me a QSL card. I send out cards the day after a contest—so keep a copy of your contest log for awhile.

Like many operators I start at the MUF and work down. I cruise a band, do my best, and then return cruise. I tune my amplifier for the next band and repeat the process. I work my friends first—then make new friends, QTH by QTH. If you're a contester who is a shrieker or who has an un-catchable call, you're out. My attention span is about two hours before I switch off and do other things. Things happen, the sun moves. It's a fluid situation. I work the easier stations first. I don't care about points.

Our synergism is strong. Both DXers and contesters should have fun and enjoy the event. I would guess that 50% of my DX QSLs came from contest contacts. If I didn't work contests I wouldn't have half of my QSL cards.

Without the contests I would not have made DXCC. I am at my technical limit. I cannot put up a beam on top of a tower. I can not increase my power. What I have is what I will have.

Recent contests have shown that a few participants are listening "up" or "down" with very wide spreads of the calling-in zone. That may be counter-productive. How you can receive call-ins over a spread is beyond me. Perhaps you should select a call-in frequency and limit your pre-selection to that one frequency. A big spread often interferes with other contesters or other radio traffic not involved in the contest. Obviously, traffic varies all over the world. You cannot know what is going on elsewhere.

And, last but not least: kindly remember that many of us depend on the printed media for our radio information—such as contest announcements and rules. Not everyone has e-mail and Internet access.

73,
Burton, N2FYT ■

ARRL Adopts Cabrillo File Format for Electronic Contest Submissions

Dan Henderson, N1ND
ARRL Contest Manager

The Contest Branch is pleased to announce that a new standard electronic file format known as **Cabrillo** has been adopted for all ARRL Contests. Starting with the 1999 ARRL November Sweepstakes, the **Cabrillo V2.0** file format will be the standard file format at the ARRL for electronic submissions.

You may still use any file format that has previously been acceptable for ARRL contests during the next year's transition period. Starting with the November 2000 ARRL Sweepstakes, the Cabrillo format will be the only acceptable electronic file format for ARRL contests. Stations may still use text editors on their home PCs to generate the log files, but these "home designed" files must meet the Cabrillo file format beginning with next year's November Sweepstakes.

The Cabrillo file format is the result of a joint effort by software developers and contest sponsors in response to the proliferation of file formats being submitted to various contest committees. For example, in the 1998 ARRL 10-Meter Contest, several dozen different file formats were submitted. While most formats technically fit the requirements under the rules, almost all of the files required significant work by contest staff and volunteers in order to be processed.

Working with the developers of most major logging software programs and with the sponsors of most major contests, Trey Garlough, N5KO, developed the Cabrillo format. The major software developers have agreed to incorporate the Cabrillo format into new updates of their programs. ***Operators should contact the various software developers and distributors for information on updates to their specific programs.***

The Cabrillo format standardizes the specific information for each QSO that appears in a particular column of data. For more detailed information on the format, please refer to the "General Rules for all ARRL Contests" that appears in the November, 1999 issue of *QST*. Also, the specifications for the Cabrillo file format can be obtained on-line from: **http://www.kkn.net/~trey/cabrillo/**. Besides the file specifications, you may also view sample templates for various ARRL contests, a history of modifications to the format, and some insight into the development of the Cabrillo file format.

For information on the technical specifics of the Cabrillo format, please contact Trey Garlough, N5KO, at **trey@kkn.net**. For more information on ARRL contests, contact ARRL Contest Manager Dan Henderson, N1ND, at **n1nd@arrl.org** or (860) 594-0232. ■

Isle of Man, GD4UOL —1988 to 1998

Steve Muster, G4UOL
60 Genesta Road
Westcliff-on-Sea
Essex, SS0 8DB, UK
steve@g4uol.demon.co.uk

Many entrants in the CQ Worldwide CW contest have cause to be grateful to Steve Muster, G4UOL. He makes an annual trip from his home in southeast England to the Isle of Man to activate GD4UOL and hand out so many multipliers to us all. Steve kindly agreed to write about his latest trip in November 1998 for the readers of NCJ.—Dave, G4BUO
NCJ *UK Regional Contributing Editor*

Steve, G4VOL/GD4OUL, guest operating at GD4UHB.

The Isle of Man is located in the Irish Sea about 40 miles from the English mainland. It is 13 miles wide and 33 miles long. It has a superb, rich landscape of 227 square miles. The island's highest mountain is Snaefell, which is Norse for snow mountain. Snaefell is 2,036 feet high. On a clear day it is possible to see the English Lake District, the hills of Galloway in Scotland, the Mountains of Mourne in Northern Ireland, the Wicklow Mountains of Eire and the Snowdonia National Park in Wales.

The Isle of Man has its own stamps and currency and also its own parliament called Tynwald. The Manx parliament is the oldest in the world with over 1000 years of continuous self-government. On Tynwald Day at St Johns, the now rarely used Manx language is spoken as the new laws of the land are read out. Although The Isle of Man has its own tax system, it is accountable to the UK's parliament.

The Isle of Man is known for its tourist attractions, principally the *TT* (Tourist Trophy) motorbike racing every June and the railway network, which is kept going by enthusiastic volunteers.

Amateur Radio on the Island

There are around 200 GDs on the island, including about 75 HF licensees. However, not many are ever heard on CW—and how many have you worked in the CQWW CW contest? When I was first licensed in 1983, I made 200 phone QSOs but since then I have been CW only. One of my sideband QSOs was with John, GD4UHB. I met him in 1989 at the Manx meeting in Peel, and he offered the use of his shack for my next trip. Since that November, I have had the pleasure of using his shack each year.

My Main Objectives

I have three main objectives in travelling to the island each year. The first is to work as many stations as I can and enjoy the pileups. The second is to continue to work towards 9-band DXCC, using 100 W. As you can imagine this is a long term objective, as each year's operation lasts only two weeks. The last objective is to continue to improve my CQWW contest results. The personal goal of beating my previous best score is always enough to keep up my enthusiasm.

The 1998 Trip

This year saw a new ship come into operation on the ferry service from Heysham near Lancaster to Douglas, IOM—the MV *Ben-my-Chree*. It is designed to cater to both commercial and domestic vehicles, resulting in less space for passengers. After the 4½ sea crossing I had another ten-mile drive across the island to Peel and my holiday apartment. I dropped off my suitcase and drove the final leg of the journey to meet John, GD4UHB, and set up the station.

In October, just before my journey to the island, the UK had been hit by ferocious winds, which unfortunately had damaged John's rotator. It could not be repaired in time, so during the whole two weeks of the operation the beam, a tribander at 50 feet, was fixed in one direction—pointing east. The LF antenna is an 80-meter doublet at about 45 feet. I used my TS-930S barefoot, with 500 and 250 Hz filters.

The following week saw excellent pileups with plenty of new DX worked. I found I had to operate split frequency most of the time, to enable everyone to hear me. Overall, propagation this year was a little disappointing, but the LF bands held up very well for a change. Some years, particularly at night, auroral conditions have come into play causing signals to become fluttery and after an hour or so, fade out completely.

160-meter conditions were very good during one evening. I was working a pileup on 1823 kHz at around 2040Z and was called by VK6VZ. He was a good 599! Also two days later, on the same frequency at 2035Z, VK6HD called me. I had worked VK6HD in 1990, so VK was not new on the band for me, but this certainly indicated good LF propagation.

CQWW Contest

The contest started off the same as every year, with all the big guns working each other. Poor old GD4UOL with 100 W may as well have been using one watt!

I feel every year that a multi-band effort with 100 W is tough—1998 did not feel any different. An hour before the contest started I was on 160 meters testing out conditions and then went to 40 meters. I stayed on 40 meters for the start of the contest and the first QSO was with K1TO. After the second QSO my frequency was lost to the European big guns. By 0400Z I had had enough, with only 176 Qs in the log. I decided it would be better to go single band 20 meters. It can be very frustrating with 100 W—particularly when you know everyone wants GD in their log, but no one is willing to let you call CQ! I returned at 0645Z, refreshed after a few hours sleep and started searching and pouncing. The idea of going single band was soon dispelled when I worked TI1C on 40 meters and 80 meters, the latter being a new band country. The mults were at last building up and a quick tune of 15 meters at 0830 turned up plenty of stations. However, what was strange was that whilst there were lots of strong signals, they all seemed to be from the same areas, namely Scandinavia and Russia. Day two saw a significantly different style of operating compared to previous contests from GD. I called CQ quite a lot on all the bands, and even managed to hold a frequency, most of the time. On day one I collected many of the mults and on day two, plenty of QSOs. (Day one: 1185 Qs, day two: 1318 Qs.)

I have been asked in the past, "Where were you during the contest?" The answer lies in the fact that with 100 W the best method of operating is generally to search and pounce. However, it seems that with the increasing sunspots, calling CQ is now an option!

The final score was the best to date. Here's the breakdown:

Bands	QSOs	Zones	Countries
160	257	9	45
80	211	13	48
40	459	17	74
20	598	23	75
15	680	22	71
10	299	17	55
totals	2504	101	368

I operated for 38 hours and the raw score was 1,838,949 points with 109 different countries and 29 of the 40 zones.

The second week of my 1998 DXpedition saw more pileups, but at a far more relaxed pace. Eighty percent of the QSOs were in week one.

The journey home this year was on the *Super Sea Cat*, which only runs in the winter months when sea conditions allow. Instead of taking 4½ hours to cross the Irish Sea to Liverpool, it only took 2½ hours. It's a pity it does not run too often!

Here's a breakdown of the QSOs by band for the 1998 GD4UOL operation, including the contest:

Bands	QSOs	Zones	Countries
160	776	10	52
80	518	14	54
40	1500	20	83
30	577	11	41
20	1727	28	90
17	688	20	63
15	1578	26	87
12	394	18	59
10	759	24	72
totals	8517	171	601

I spent a total of 131 hours on the air and contacted 130 countries in 36 CQ Zones. I worked 5,585 unique calls in 8,517 contacts (65%).

1988 to 1998

These are my 9-band DXCC totals to date:

BANDS	QSOs	ZONES	COUNTRIES
160	4013	14	67
80	8135	20	99
40	13408	31	141
30	4389	26	96
20	18796	39	174
17	2427	33	104
15	12196	39	176
12	856	24	83
10	6224	34	153
totals	70444	260	1093

Welcome to the Home Page of GD4UOL

I set up my Web site in 1996. It now includes plenty of statistics, graphs and tables; a log search facility (to check to see if you are in my 1998 log); a photo gallery and my complete QSL collection, with cards from each of the 196 confirmed countries. The site can be found at **http://www.g4uol.demon.co.uk**. ■

The Good, The Bad and the Ugly

Left to right: Ben, DL6RAI; Roger, G3SXW and Dave, G4BUO, enjoying refreshments at a London restaurant.

Amateur Radio in Bulgaria —Past and Present

Wally Stefanov, LZ2CJ
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Through this article, I hope to give you a better understanding of Amateur Radio's history and its present state in a small country located in the Balkans—Bulgaria.

History

On the 5th of June, 1926, a group of citizens of Sofia (our capital city), during their first meeting in Sofia's casino, founded the "Bulgarian Radioclub." This is the date that the organized Amateur Radio movement in Bulgaria began. There were 38 founders—electrical engineers, radio technicians, a few military officers, a wholesaler and the owner of a building company. The first attempt to build and use an Amateur Radio station, however, was not made until 1934. That attempt was unsuccessful.

So, arguably, perhaps the real founder of Amateur Radio in Bulgaria was Ivan Dzakov. In 1935, he built the first Amateur Radio transmitter here—a spark transmitter using a coil from an old Ford car, a 6 V battery and a capacitor. The antenna was a 20-meter long wire.

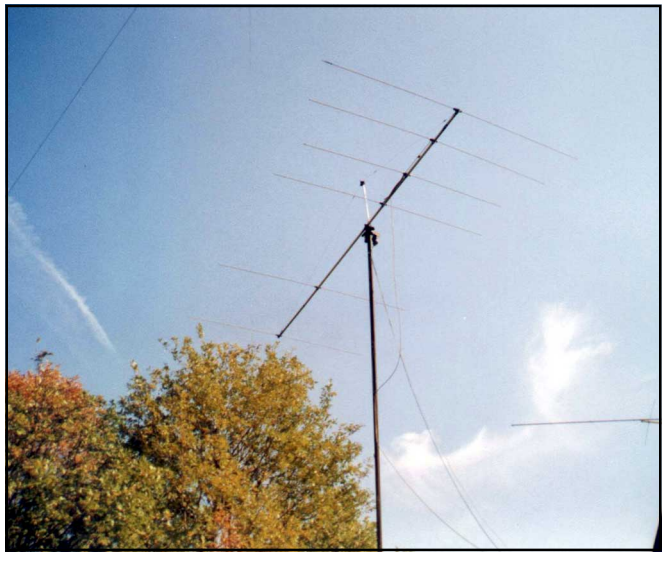
In 1938, after learning more about Amateur Radio, Ivan built a 1V1 receiver and a transmitter with a 6L6 tube that was capable of producing about 1 W of CW on 40 meters. On the 24th of April, 1938, the first QSO between a Bulgarian ham (LZ1ID) and the outside world was accomplished. This contact was with HB9CE—Franz Bech.

In 1945, the American Ally Commission appointed Ivan a "Technician." He later became a serviceman for the transmitter operated by that organization. He was granted permission to use the Commission's 5 kW transmitter for Amateur Radio operations. Signing LZ1XX, he managed to complete QSOs with stations on all the other continents.

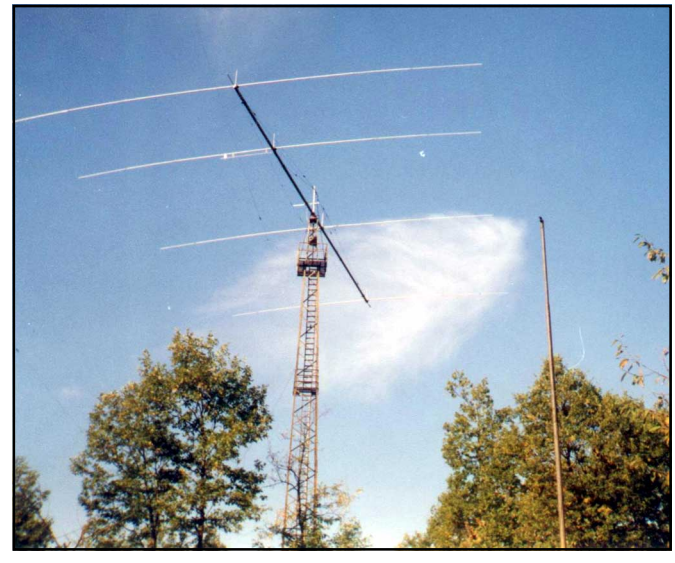
At the end of 1947, the state organization—the *Committee for*

The QTH of LZ2II—10 km from Troyan at 1200 meters above sea level.

LZ2DF at LZ2II during the 1999 160M SSB contest.



A 6-element 10-meter Yagi at LZ2II.



A 4-element 40-meter Yagi at LZ9A.

Amateur Radio—was formed under the "People's Union for Sports and Technique."

A list of the pioneers of Bulgarian Amateur Radio would include LZ1ID (later LZ1XX), LZ1WD, LZ1AJ, LZ1FF, LZ1AH, LZ1TQ, LZ1SP, LZ1FN, LZ2AS, LZ1AB—and a few others.

On the 25th of December, 1949, the first club station was formally opened—LZ1AA. In subsequent years, many others followed.

There were certainly problems for radio amateurs in Bulgaria during the socialist years. Some were put in jail for attempting to become members of Western DX clubs. There were even attempts to forbid contacts with Western radio amateur stations in the 1960s, but thanks to the fact that there were hams among the elite of the Communist Party, this never occurred.

To wrap up this discussion of our history, I will share a story that perhaps deserves to be included in the Guinness Book of Records. It is about "Grandfather Peter", LZ1AF, as we refer to him today.

Dimitar Petrov, LZ1AF—A Living History of Bulgarian Amateur Radio

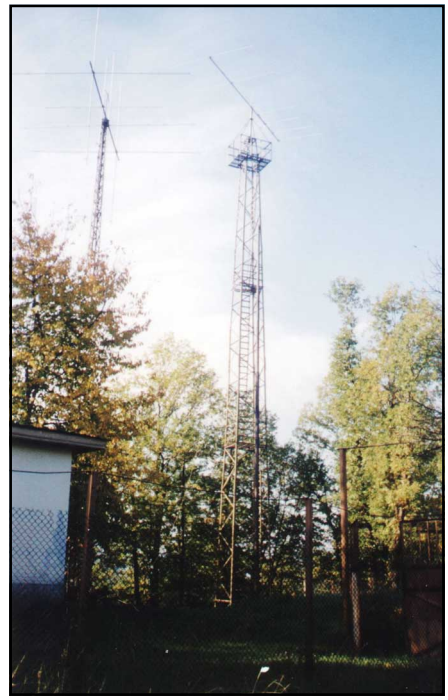
Dimitar's father was against the idea of his son taking up Amateur Radio as a hobby—he forbid him from acquiring a morse code key. His father considered such a hobby dangerous at the time. Dimitar secretly disassembled their home radio receiver and made an amateur transmitter—using one of the tubes as a final. Since he had no key, he used a wire to touch the chassis ground to key the CW transmitter. The power was no more than 3 or 4 W. He used the call sign LZ1KY.

After his first CQ, you can imagine his delight when he received an immediate response from VK6RU in Perth, Australia! (RST 579). Nearly 47 years later, J. E. Rumble, VK6RU (who is still alive and well), has just got around to providing the confirmation QSL for that QSO.

Present Times

With a recently (1996) enacted law relating to Amateur Radio, Bulgaria has seen quite an increase in the number of newly registered hams. There are now over 5,500 licensed radio amateurs in Bulgaria (about one for every 1,500 citizens). This number is really quite impressive, especially considering that the country has experienced a great deal of economic turmoil in the last few years.

Bulgarian hams can select from four different amateur license levels: A, B, C and D. This structure is in agreement with that defined by CEPT (European Conference of Postal and Telecommunications Administrations). There is also a separate license requirement for SWLs.



The quad at LZ9A is 3 elements on 20 meters and 4 elements on 15 and 10 meters. The second tower supports a 6-element 10 meter Yagi.

One can obtain an Amateur Radio license after passing an exam covering the fundamentals of radio and electricity, amateur codes and rules for operating an amateur station, ITU and Bulgarian laws of telecommunication and a Morse code test (required for all license levels except D).

The tests for each license level have a minimum of 60 questions and are approved and conducted by the Commission for Post and Telecommunications. To pass the test a candidate must correctly answer over 80% of the questions. Tests are administered by the Commission and are given by a representative of the Ministry of Post and Telecommunications and two radio amateurs—one with an A license and one with an A or B license. Each successful candidate receives a license certificate.

A and B class licensees are allowed to operate on all amateur bands, including the WARC bands and 6 meters, using all normal modes. Holders of a C class license can operate 160, 80 and 40 meters as well as on VHF and UHF. Holders of a D class license can operate on 2 meters and 70 cm FM only. Club stations can set up a repeater if certain requirements are met.

Bulgarian call signs consist of the prefix LZ, one number and up to 3 letters in the suffix. The number in the call represents the region:

Northern Bulgaria: LZ2, 4, 6 and 8.

Southern Bulgaria: LZ1, 3, 5, 7 and 9.

Club stations call signs are LZ, a number, the letter "K" and a combination of two letters (ie LZ1KDP). Repeater calls are LZ0 followed by 3 letters.

Special call signs may be issued for participation in international contests or for expedition stations. (LZ0A was issued to LZ2UU to operate from our Antarctic base). It is now allowable for any ham or club station to apply for a special contest call sign with just one letter after the number—LZ9A for example.

Visiting Hams

Foreign hams who come from countries that have signed CEPT recommendations T/R 61 - 01 and T/R 61 - 02 are allowed to operate in Bulgaria. They must have a national license issued in accordance with T/R 61 - 01 and T/R 61 - 02 and must be staying in Bulgaria for no longer than three months.

Foreign hams from countries with which Bulgaria has signed other agreements are allowed to operate their own equipment only within the limits of the special signed agreement.

Radio amateurs who do not fall within the above mentioned categories are allowed to operate their own personal stations in Bulgaria only after filing an application with the Committee of Post and Telecommunications and receiving a temporary license. They must attach to the application a copy of their national license and the document that verifies that they have paid the Bulgarian application fee.

Foreign radio amateurs are allowed to operate from Bulgarian club stations as well as from stations belonging to Bulgarian hams without any special permission from the local authorities. They are required to sign the station owner's call along with their own (ie LZ1BB/W2LY).

When a foreign ham has permission to operate his own personal station in accordance with the requirements stated earlier, he must use LZ/his call (ie LZ/W2LY). Those foreign hams who have a license in accordance with recommendation T/R 61 - 01 are allowed to operate from Bulgarian club stations or personal LZ stations by using a call such as LZ/W2LY. This rule is valid for contest operations as well.

Bulgarian hams are quite active in international contesting. Some of them are currently holders of all time records. (LZ9A, LZ2CJ and LZ2BE, for example.)

We all hope to work you in the contests. I will be signing LZ9A or LZ2CJ.

—73, Wally, LZ2CJ ■

Single-Op Two Radio Station Automation at W9RE

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I was inspired to automate my station after reading "Station Automation" by Jim White, K4OJ, in the September/October 1998 *NCJ* and a construction article on a simple decoder for ICOM radios by Art Rideout, WA6IPD, in the May 1998 issue of *CQ*. The final motivation was the acquisition of a second computer-controllable radio, an IC-781, in the fall of '98.

A little background on antenna control here at W9RE... I had only one radio—a CX7A—until 1984 when I purchased a TS-930. At that time, I set up both radios with a combination of four DowKey 120 V ac antenna relays to transfer one radio from coax switch #1 to coax switch #2 (see **Figure 1**). With this setup either radio could be connected to any antenna. This arrangement did result in a situation where the antenna selection was not mutually independent, though. In other words, I had to try and have a 15-meter antenna on switch #1 and a 10-meter antenna on switch #2 so that radio A could be on 15 and radio B could be on 10. Having quite a few antennas and sometimes multiple antennas on a band made this an acceptable compromise.

I bought a second TS-930 in 1985 and used a pair of them until 1995 when I picked up an IC-781 to use as the main radio. I had finally made the jump to computer-controlled radio contesting.

Through the years I had been aware of the ability to extract band information from the '930s—but I could not figure out how to make it play in my situation. After purchasing a second '781 and getting it linked to the computer using *CT*, Jim's article provided the inspiration I needed to build a setup for automatic antenna switching. A block diagram of my system is shown in **Figure 2.** The initial antenna switch box scheme is shown in **Figure 3**.

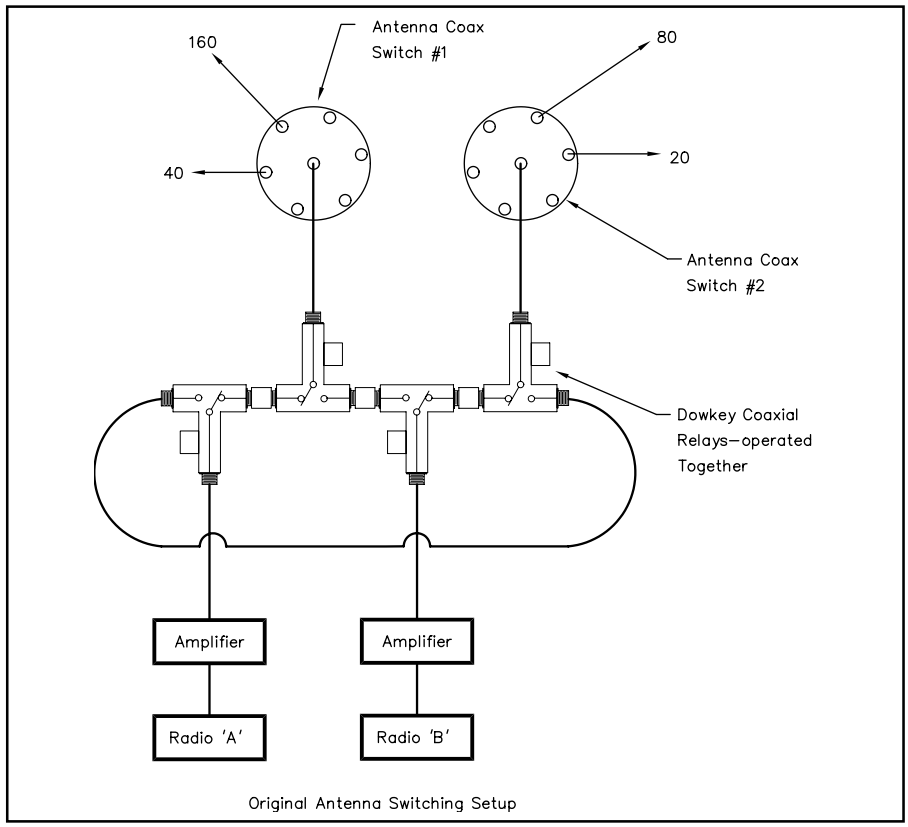

Figure 1

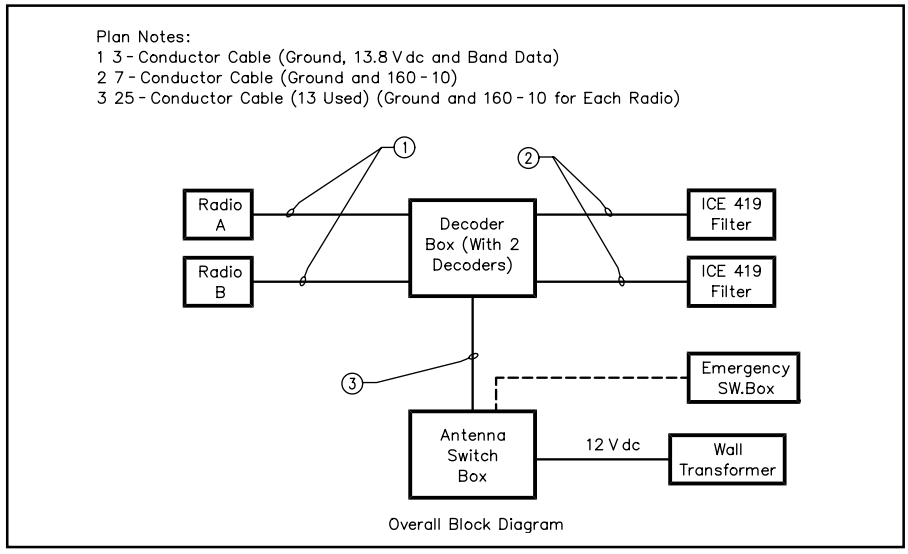

Figure 2

Getting Started

Thanks to my friend Sam, K9SD, who loaned me an antenna switch that he had homebrewed, I was able to modify

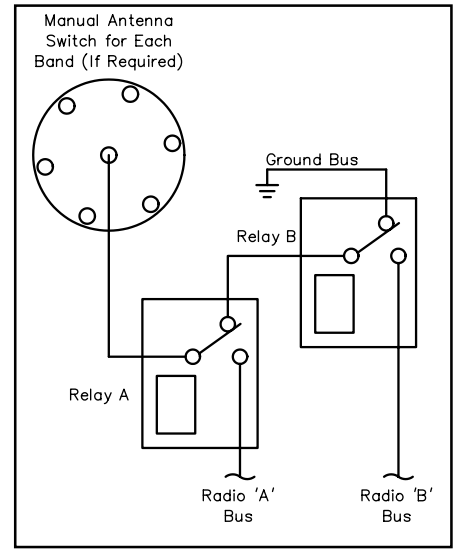

Figure 3

his design for use in my two-radio/six-band antenna switching system.

I really like the relays Sam used. They're a Potter & Brumfield KA style that has since been discontinued. These are open-frame stud-mounted relays that suit this application nicely. I found a supplier of similar surplus Potter & Brumfield relays (at a very reasonable cost) that are 10 V dc instead of 12 V dc and have three DPDT contacts rated at 5 A each. These work very well after slight modification. I ordered mine from C and H Sales Co, tel 800-325-9465, **http://www.aaaim.com/CandH/**. Ask for model RL8200. (The specification incorrectly lists the voltage as 12 V dc.)

I began this project by building the decoder box with just one decoder. Each of the decoder's band outputs drives a small 4PDT 12 V dc "ice cube" relay. The enclosure is 2.5 × 6 × 6.5 inches and is similar in size and appearance to the one WA6IPD used in his article.

In my final version I installed two decoder boards, one above the other, resulting in two rows of band indicator LEDs (one for each transceiver). I use independent 13.8 V dc lines from each radio to drive each decoder and its corresponding "ice cube" relays (by doing this only one radio needs to be on for its decoder and relays to function). I used female inline DIN connectors for the connections to the ICE filters and for the data cables that go to each radio.

Why four-pole units for the interface relays? This gives me one set of contacts for driving the larger relays that do the actual antenna switching, a second set for switching the ICE filter, and a third set for activating a light or alarm to warn the operator if both radios are on the same band. The fourth set of contacts act as a spare.

I tested the single decoder setup and one set of relays in the CW SS contest. All was fine until I went to bed. When I got up the decoder box wouldn't function on 40 meters—the trouble turned out to be a bad solder joint! So far so good.

Assembling the Radio/Antenna Switching Network

Next I added the second decoder and interface relay set to the small enclosure and began construction of the separate radio/antenna switch box.

For the switch box enclosure I purchased a 12 x 8 x 3-inch BUD chassis. I cut a piece of aluminum plate about 0.125-inch thick to fit the bottom and mounted the twelve antenna-switching relays, eight chassis-mount SO-239 coax connectors, a DB-25 jack and a power connector.

I chose to power these larger relays from a 12 V dc 800 mA wall transformer. I did this so that in an emergency the radio/antenna switch box would not depend on the decoder box for its power. I used a DB-25 connector because the decoder enclosure already had the appropriate cut out.

This arrangement also makes it easy to disconnect the decoder box and connect an alternative, emergency, manual-switching control box. The interconnecting cable between the decoder box and the radio/antenna switch box is just a common straight DB-25 cable with molded-on connectors—so it's durable and easy to replace.

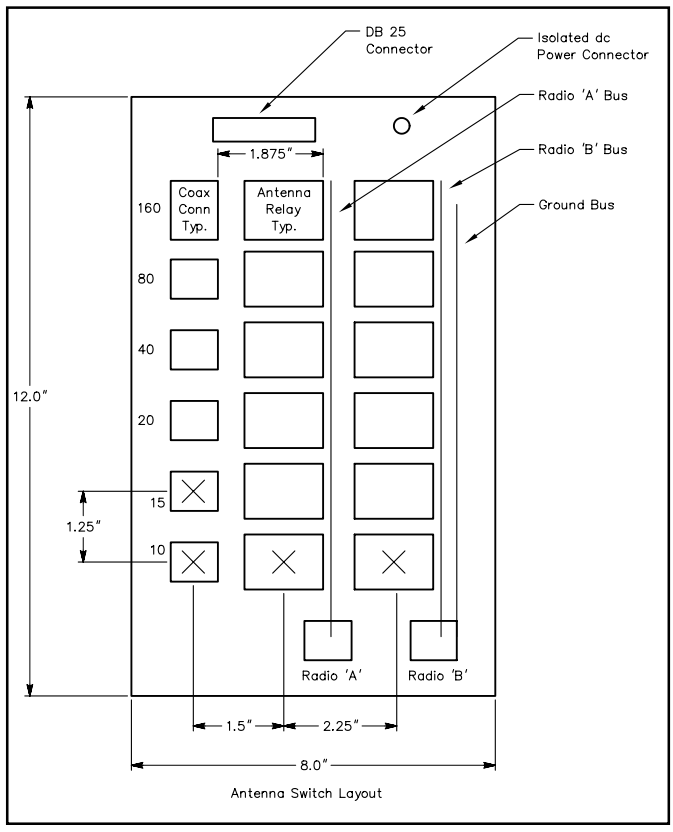

Figure 4

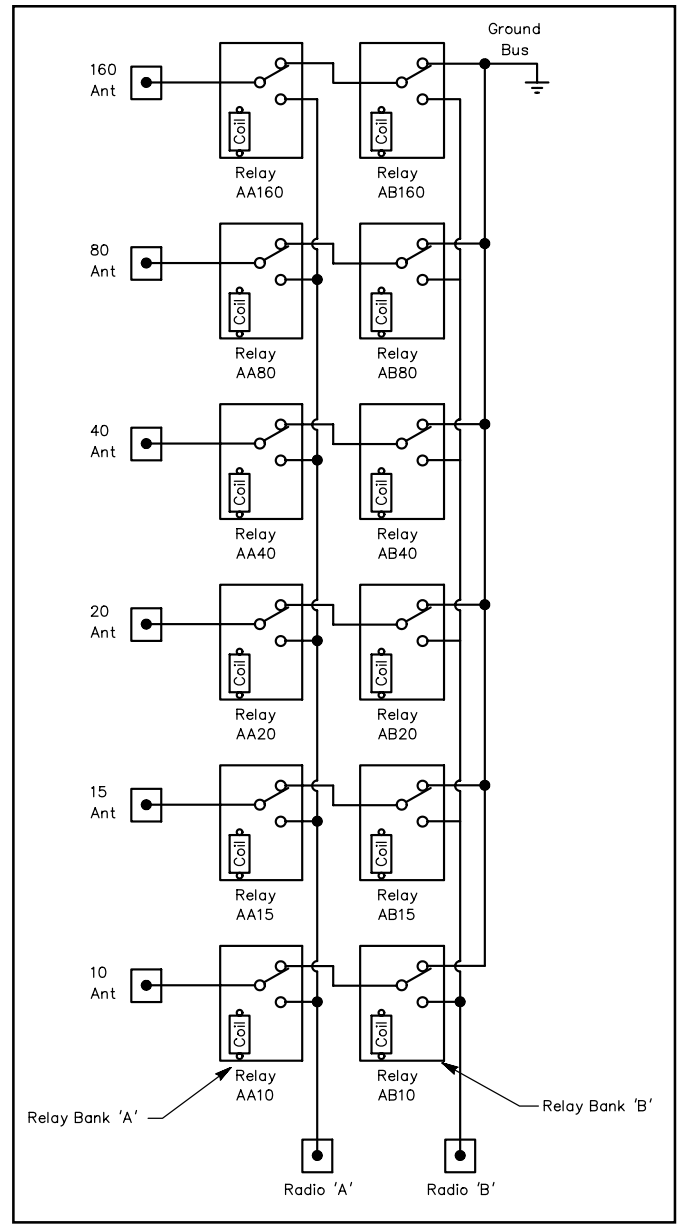

Figure 5

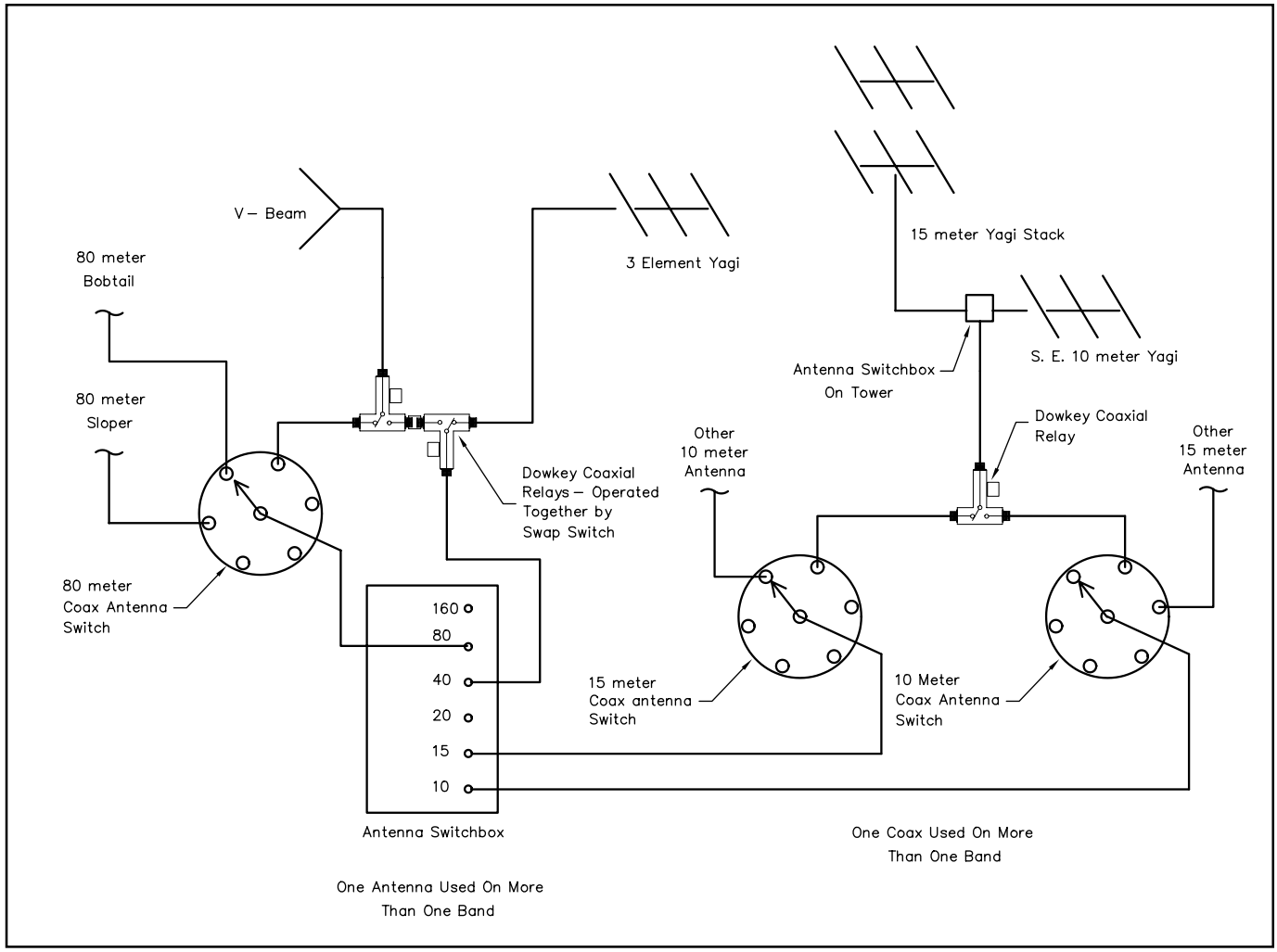

Figure 6

The parts layout for the radio/antenna switch box itself is shown in **Figure 4**. The relay interfacing is detailed in **Figure 8**. I designed the circuit such that if the Run Radio "A" is switched to a certain band/antenna, that band/antenna is not available to the Multiplier Radio "B." This eliminates the chance of both radios being simultaneously connected to the same band/antenna. If both radios are switched to the same band, there is no antenna on radio "B" and the alert sounds. When no power is applied to the radio/antenna switch box or when both radios are off, each band/antenna is grounded. By the same token if radio "B" is on 10 meters and radio "A" is switched to 10 meters, radio "B" loses the antenna to radio "A." (The Run Radio takes precedence.)

Construction Details

There are several great construction details that I picked up from K9SD's unit that I really liked and will attempt to describe and illustrate via figures.

The flying leads on the armatures are unsoldered from the terminals and these three are combined on relay bank "A" and go to the center pin of each band coax connector (see **Figure 5**). You can use a straight piece of #12 house wire (with the insulation removed) to run between all six relays (bank "A") to the second layer down terminals (NO—normally open).

You will need to break off and file the ridge barriers that are between the terminals. I used a pair of long-nose pliers to break them off and then filed them to remove additional material. An air compressor was used to blow out the debris.

One other note—if you use the specified relays and follow my dimensions, you will notice that that the coil terminals on adjacent relays touch. Bend the outside terminals alternately up and down on every other pair. The two terminals that are touching are soldered together with a common wire.

I am describing this procedure with the P & B relays in mind because, in my opinion, these are the absolute best relays for the switch. I used #12 house wire because it does not have enamel on it that would have to be scraped off.

On bank "A" the piece of #12 wire runs along and hits each relay's three contacts. If you do the layout carefully and all of your relays line up, you won't have to bend the wire except to go to the center of the radio "A" coax connector. On the bank "B" relays the flying leads go to the top (NC—normally closed) contacts of the bank "A" relays. On this bank there are two lengths of #12 wire. One wire goes to ground and the other to the center of the coax connector for radio "B."

Additional Switching for My Application

I have multiple transmitting antennas on all bands except 160. So on 80, 20, 15 and 10 meters, I ran a coax jumper from the automatic band switchbox to a manual coax switch for band antenna selection (for example on 20, I use the manual switch to select a rotatable stack or a fixed 204BA).

I also have two antenna feed lines that I use on two different bands. One is a V-beam that is my main southeast antenna

on both 40 and 80 meters. It is fed through a matchbox. The second feedline runs to my secondary 15-meter stack and a fixed southeast 10-meter beam.

On 80 meters the V-beam is selectable by the manual coax switch as long as it is not selected on 40 meters. On 40 meters the normal antenna is a Yagi. If I want to select the V-beam, I have two DowKey antenna relays that operate together, controlled by one switch. If this switch is energized and I select the V-beam while on 80, I know it immediately—I can't hear any signals on 80 as no antenna is connected (see **Figure 6**).

On the 15/10-meter feed line, I used a different approach. A ratcheting solenoid type antenna switch is mounted on the tower (W0MLY/Antenna Mart) which uses 24 V dc on a wire to select a particular antenna. I tap the wire that selects the 10-meter antenna and drive a 24 V dc interfacing relay that in turn controls another DowKey 120 V ac relay. This relay has the moving contact connected to the feed line and the stationary contacts connected to the 10 and 15-meter manual coax switches (see **Figure 6**).

Shake Down

I completed this project on the Saturday of the Phone SS contest so I was able to check it out somewhat—although not in the heat of battle. Pat, N9RV, was going to operate my station in the CQWW CW contest. He hadn't operated here in 6 years—he had never used my old antenna switching arrangement. I thought this would be a great time to implement everything.

During the week prior to the contest, I did more checking and found that when loading up the amplifier on 20 meters, the band decoder lights would flash and I could hear the antenna relays clicking. When this happened, I didn't have an antenna on the amplifier and the relays were being hot switched! Obviously, this had to be avoided. Thankfully, I had a SWR/wattmeter with a high SWR limit cutout for the amplifier I was using.

Early on, I decided I had to construct an emergency box that would allow me to switch the antenna relays manually in the event that a band decoder failed. I didn't want to be put out of a contest because of another bad solder joint!

The switch box I made has two 6-position rotary switches in it and sports a DB-25 jack, just like the decoder box (see **Figure 7**). I disconnected the cable from the decoder box and connected the manual switch box to the radio/antenna switch box. I found that the band decoders didn't act up, so I put a .01 capacitor from each decoder relay contact to ground on radio "A." This seemed to alleviate the problem (not shown on schematic). While Pat was taking his pre-contest nap, I was loading up the amplifier again and the same thing happened to the other bank of relays. So I hurriedly put capacitors on that bank as well.

Pat made 4000 Qs in the contest and had no problems at all! But on Tuesday after the contest, I noticed the 20-meter LED was out. After replacing an open transistor several times, I finally figured out that in my haste I had connected the 20-meter capacitor to the hot side of the relay coil. This had shorted the 1N914

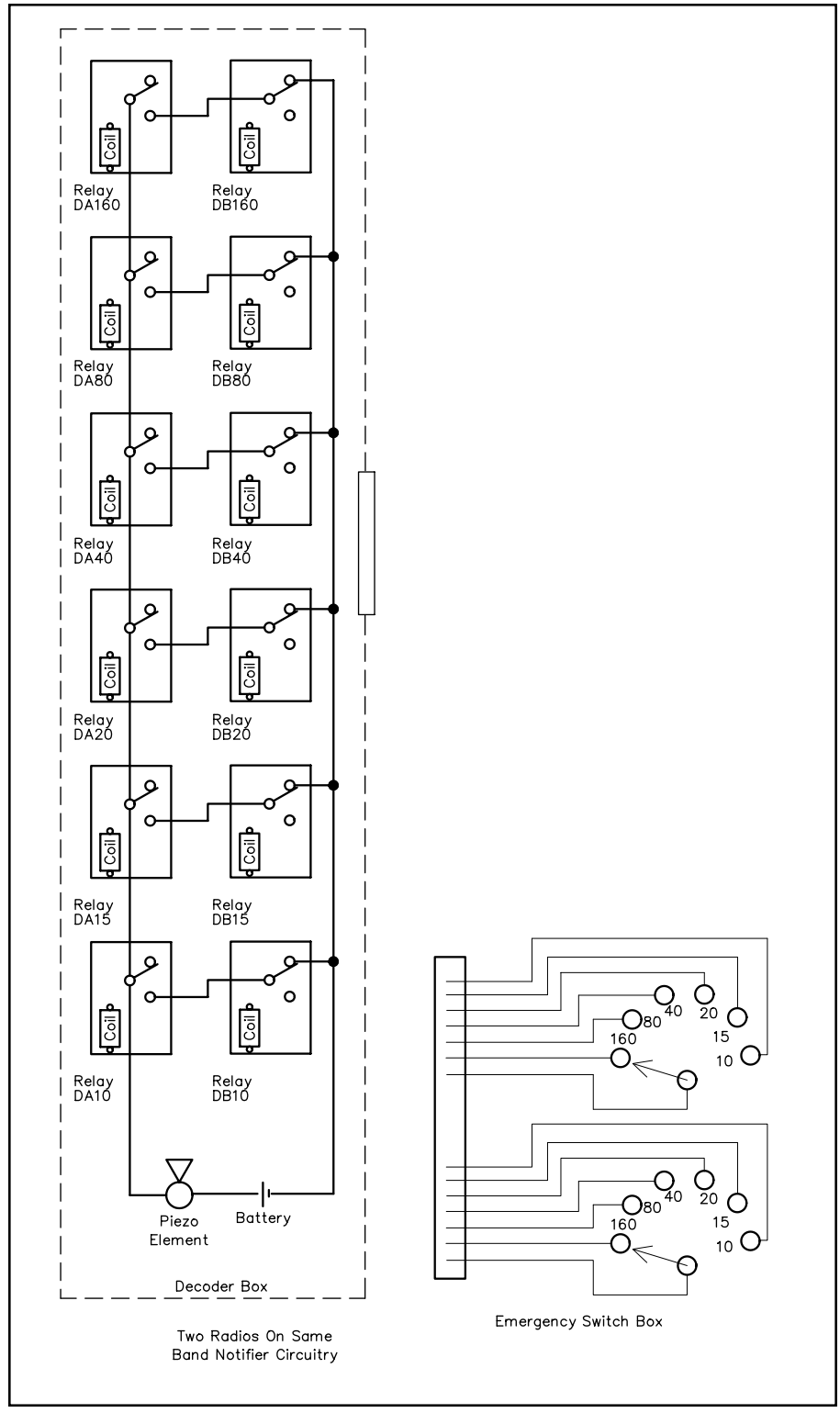

Figure 7

diode used to limit the back EMF of the coil windings and resulted in the destruction of the transistor after a few switches.

The relays I used are rated at 10 V dc. The wall transformer put out about 15 V dc even under load. I was concerned about overheating and possibly burning up a relay. I added two 5 W 130 Ω resistors to drop the voltage to about 10 V with one relay and 8 V with two relays energized. My calculations had indicated that a 1 or 2 W resistor would do the job, but in practice the lower wattage resistors ran too hot.

I used the system myself for the first time in the ARRL DX CW contest. I discovered that when I selected the top two 15-meter beams (out of a 4-high stack) I was getting RF in to something and again the antenna relays were all energizing. I solved this problem by putting some snap-on cores on the cables leading to the radio and to the ICE 419 bandpass filter. I operated the SSB portion of the contest without experiencing any further problems.

Conclusion

This automatic system has eliminated the possibility of having a wrong band/antenna on a radio/amp and has made band switching seamless and fast. It is a worthwhile improvement that I wished I had implemented several years ago.

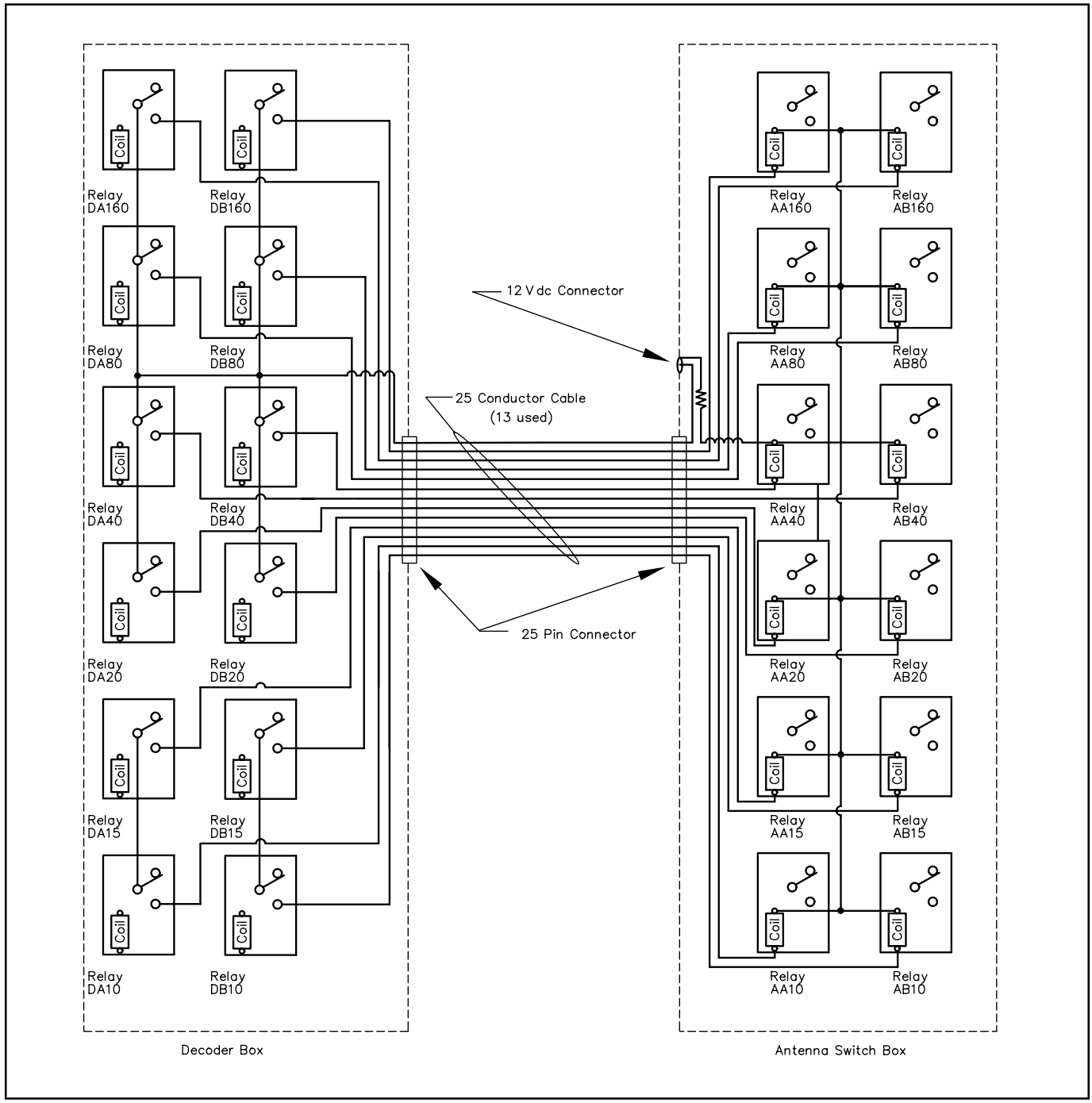

Figure 8 ■

NCJ Columnists Unite Behind Editor

NCJ Editor Dennis Motschenbacher, K7BV, travelling on business in Europe, participated in the SAC contest the weekend of September 18 and 19—signing OJ0/K7BV.

Just prior to the contest, an anonymous—and obviously bitter—contester offered a colorful certificate to the first *NCJ* columnist to steal K7BV's frequency in the contest.

This egregious disrespect for the *NCJ* Editor united the *NCJ* columnists behind their leader with a "show of support."(?!) Comments from several columnists follow. The full calls have been omitted to prevent retaliation by the individual that offered the certificate, or any other involved parties:

*"Wow!! With a carrot like that dangling in front of me, I just may have to use my little 3CX800 amp to drive the BIG amp"—K9***

*"I'd never steal his frequency. But I might 'borrow' his rig, antennas, PC, etc"—W5****

*"Yeah, right—he's over there on business—*my foot!*"—W9***

*"Nah—don't encourage people to steal his frequency—tell them to just keep asking for a repeat"—K5***

*"All my sympathy to N6BV for having the same suffix"—K8***

And the following directed correspondence from a non-columnist was also intercepted:

*"Dear Mr. Motschenbacher, It has come to our attention that you seem to be spending an inordinate amount of time operating from locations outside of the United States. Should we change your permanent address in our database to Market Reef?"—K*ZDH* ■

10 Meters is Dead! (Not!)

Chuck Dietz, KZ5MM
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"Whatcha doing, Chuck?" The old ham said as he looked upon the aluminum tubing spread around in the shack.

"I'm getting my antenna ready for the 10-Meter Contest," I said, wiping down an element with a cloth. "I use this battery terminal cleaner. The little brush cleans inside the elements and this other part brushes the outside so I get a good connection between element sections."

"Humpf!" he opined, "You aren't gonna hear anything anyway—10 meters is dead! Listened there myself just the other day. The band acted like it was coming back last winter, but then everything went down the tubes in about May."

"Well, you might be surprised," I said. "You just might be surprised." I turned around to the rig and flipped in the South American antenna. Sure enough there were signals, but not South Americans. I tuned in one S-7 signal just as he identified: "*Juliet Alpha Two Alpha X-Ray Bravo, QRZ USA on long path.*"

"Wow!" The old ham exclaimed, "JAs on 10 at eight thirty in the morning! I have to go home!"

I smiled as he shuffled off to fire up his own rig. He was right. The band did seem to be coming back last contest season, but it was not quite like it was at the peak of the last cycle. There were lots of contacts on 10 meters during the contests last winter, but there weren't a lot of the strange openings that make 10 meters really interesting.

Well hold on to your hat this season, because 10 is really hot. The reason it seemed to fizzle around May of this year is the seasonal nature of the band. 10 has great DX openings in winter months, but is usually pretty dead in the summer months. It still had some good openings, but not nearly as often.

The 1998 10-Meter Contest had the most entries of any single-weekend ARRL contest ever! There were four new all-time records set: W4WA set a new Low Power, Mixed Mode record with 1,320 QSOs and 237 mults; Mike, K5NU—operating at K5SZ—set a new Low Power, CW-only record with 1,524 QSOs and 121 mults; John, N6MU, set the new QRP, Mixed Mode record from N6NB's station with 1,222 QSOs and 179 mults; and KT0DX set the new QRP Phone-only mark with 1,194 QSOs and 110 mults!

The scores in every category in the 1998 10-Meter Contest were close to the all-time records. K1TO finished less than eleven thousand points below the NX1H high power CW record set in 1991. Many of the others were just a few percentage points away from record territory. With the flux well over last year's levels, I'm sure many of the records will fall during the 1999 contest. This may be your best chance to set a record that will stay on the books for years to come!

Here are the current record standings with the year set indicated

Ten Meter Contest Records

Power	*Mixed*	*Phone*	*CW*
High	WM5G ('90)	K4XS ('91)	NX1H ('91)
Low	W4WA ('98)	KE5FI ('92)	K5SZ ('98)
QRP	N6MU ('98)	KT0DX ('98)	N0AX ('91)
Multi	AA5B ('90)		

Good luck to all of you in the ARRL 10-Meter Contest December 11-12, 1999.

—73, Chuck KZ5MM ■

Third World Championships in High Speed Telegraphy

Heinrich "Hein" Langkopf, DL2OBF
DL2OBF@gmx.de

So, you think you are a pretty hot CW operator, huh? How do you stack up against the competition discussed below? After reading through this article, we hope that you'll agree that more teams made up of contesters should be in attendance at the next running of the World Championships in High Speed Telegraphy. But, please don't just agree—do something to make it happen!

The *3rd World Championships in High Speed Telegraphy* took place in Pordenone, Italy from April 28th to May 2nd of this year. Competitors from 18 countries, most from Eastern Europe, tested their skills against each other.

In Europe, high speed telegraphy is considered as much a sport as swimming or other athletic endeavours. In Russia and Belarus, this sport has a long tradition. The competitors have the chance to train like semi-professionals in addition to enjoying "normal" ham radio. Several participants in this year's competition are contesters that are undoubtedly well known to the readers of the *NCJ*. These included HA3OV, PA4AO (ex PA3GIP), 9A2EU (9A1A), OK2BFN and yours truly, DL2OBF.

From left to right: DF4PA, DL4MM, DJ1YFK, DL2CC, DL2OBF and DF7QK.

Competitions and Categories

The High Speed Telegraphy Championships includes three separate competitions.

A Receiving Test

Reception of letter/figure/mixed groups at the highest possible speed, one minute per speed. The competition starts with 20 WPM and ends with the last competitor throwing away his pencil (copying with a typewriter type device is also allowed).

A Transmission Test

Transmission of letter/figure/mixed groups at the highest possible speed and with the best possible spacing and accuracy.

A Repeating Test

This test consists of a combination of the CW computer programs *RUFZ* (to test the ability to receive calls at very high speeds, written by DL4MM) and *PED* (pileup simulation, written by JE3MAS).

The competitors were divided into six different categories by age and sex. There are also "Combined Results" in each category and a "Team-Results" category.

Speeds and Results

Some participants achieved speeds that are hard to imagine. RV9CPV, who has won nearly everything in the "Male—20 to 39 years of age" category, received letters at 72 WPM, transmitted at nearly 80 WPM and scored an average speed of 110 WPM with *RUFZ*.

Most of the medals went to participants from the former Soviet Union. Well-known contester Anti, HA3OV, was amongst the few who broke into that group. He won a Silver Medal in the *Repeating Test* and took third place in the *Transmitting Test*.

Pileup Simulation

The portion of the competition that most closely resembles contesting is the pileup simulation test, *PED*. This makes up one-half of the *Repeating Test*. Each competitor had two attempts to work as many stations as possible within a 5-minute period. The results were awesome! The top competitor in the "Male" category, HA3OV, worked 47 stations. (I took 4th place with 39 stations worked.)

The German starters, Mark, DF4PA and DL2OBF (yes—*me*), set their main hopes on the *Repeating Test*. We did well, but in the end it was 7th place for me and 8th place for Mark. 15-year-old Fabian, DJ1YFK, scored a very respectable 6th place for his age category in the *Transmission Test*. *Team Germany* also included Manuela, DF7QK, referee Frank, DL2CC, and team leader Mathias, DL4MM.

Not Only a Sporting Event...

Apart from the competition, there were lots of chances to make new friends and renew old ones. A trip to Venice was part of the program, and there was superb Italian food and beverages at the official banquet after the awards ceremony.

There were rumours about some extensive and enthusiastic victory celebrations in the hotel room's of *Team Russia*. A certain German competitor never knew that he could speak (some) Russian until actively participating in these celebrations.

The next High Speed Telegraph World Championships will be held in 2001 in either Belarus or Romania. They are always a great affair and deserve participation from even more countries. Societies or interested individuals should contact the IARU HST-Working-Group for further details.

The complete results and many photos can be found on the Internet at **http://www.darc.de/referate/dx/fgdth.htm**. ■

NCJ Profiles—Ham Radio's own TV-Bob—Bob Wilson, N6TV

H. Ward Silver, N0AX
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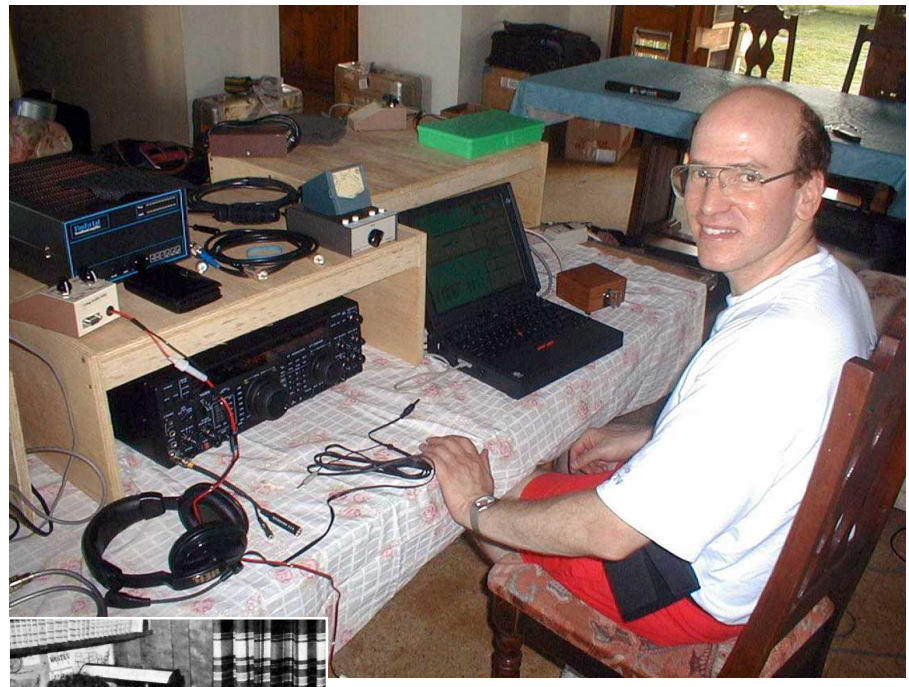
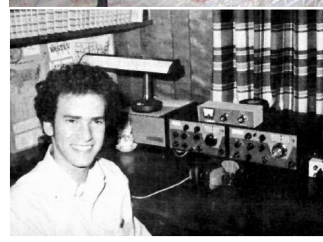
Every CW contester on the West Coast knows N6TV—known as "TeeVee Bob" to friends—for his hot hand on the paddle, and ears to match. My occasional ragchews with him about antennas or radios accelerates faster and faster until I'm just a stumbling weenie at the key, while Bob doesn't even seem to notice, much less break a sweat. Who is this guy, anyway?

An active and successful contester from home and abroad, Bob has been logged from a variety of prefixes. Some are common contest destinations—FO, 4U, KH6, P4—and some are more sought after, such as his participation in the ground-breaking YK0A expedition, running the masses from the up-and-coming Top Ten QTH of HC8N, and setting all-time records with the 6Y4A and 6Y2A crews. By the time this story comes out, Bob will be savoring his successful tour of duty as part of 4M1X in the 1999 IARU HF Championship. What all of these operations have in common is *rate*, and lots of it.

Bob was first licensed in 1972 at age 15, as WN6TLV, then WA6TLV, in the QTH of Tarzana (*Aaaaheeaaheeaaaaaaaah!*—sorry, couldn't help myself—N0AX) in Los Angeles's San Fernando Valley. "I'm a 'Valley Guy'", admits Bob. "I got N6TV in the second round of N6's, around 1975."



N6TV at the 6Y2A operation in the 1998 CQ WW CW contest.



Bob at his home station in the mid 1970s.

Travel tends to bring out an operator's strengths and weaknesses. Bob has discovered that "there's nothing more fun than being on the DX side of a CW pileup. The Caribbean is easy to get to, and the warm climate allows you to pack more equipment and bring less clothes. I've learned never to send '?' after coming back to a European, or else they'll all call again. Conversely, you almost always have to send the '?' as part of a partial JA call, or else no one comes back. However, it's far more fun to run the states than anywhere else—the call signs are shorter and more familiar, they send fast, and they usually sign only once."

"Overall, I prefer the challenge of a contest with multipliers to straight running. YK0A was a DXpedition combined with the CQWW CW. It was fun to be the 'main attraction' on a band when we first came on the air—the pileups were huge—but to me, multiplier chasing or passing mults is more interesting than sitting on a frequency and running endlessly."

"I have also learned the tremendous value of the NCDXF HF Beacon Network (direct your browser to **http://www.ncdxf.org/beacon.htm**) when you need to verify new, unfamiliar antennas, and propagation predictions. With beacons coming on the air from all over the globe every ten seconds, you can gather a lot of information very quickly."

Bob had an excellent contesting education and benefited from a fertile environment in which to garner expertise. "Competition with Tree, N6TR (who also lived in 'The Valley'), was pretty intense in the CD parties. I remember that we both raced to get 5BWAS. Tree introduced me to traffic handling on the Southern California Net (*SCN*), which really helped me hone my CW skills and made me love QSK. There was a 'rat pack' of young contesters and CW traffic handlers in the LA area: WB6ZVC (N6TR), WB6OLD (KR6X), WB6VZI (N6VI), K6OVJ (K5YA), WA6OTU (N5OT) and WB6KPN (N6PN)."

"My original ham Elmer was Mike Seedman, WB6FUE (now AA6DY), who introduced me to the West Valley Amateur Radio Club (*WVARC*), where I met many of the Southern California contest contingent. My primary contest Elmer was Leigh Jones, KR6X. During my first Novice Roundup, I remember he showed up at my house with a box full of crystals, sat down next to me and gave me a bunch of pointers that really helped. After every contest, we'd analyze it for hours. This was usually more fun than operating the contest. His encouragement got me hooked."

Emulating the Tom Sawyer epic, young and impressionable Bob also spent a summer scraping paint off the side of N6AA's house. Dick didn't earn his reputation as a smooth operator for nothing! "Dick's place, high on a hilltop, was ham heaven. When it got dark, he would feed me and remind me how important it was to get the call right. We would listen to audio tapes of his 200 QSO per hour runs from KH6RS. Cool stuff!"

After high school in 1975, and a summer working with N6RJ at HRO in Van Nuys, Bob moved north to Silicon Valley where he lives and works today as a software engineer for IBM. "When I

attended UC-Berkeley, I met even more contest Elmers from the Northern California Contest Club (*NCCC*) and quizzed everyone, trying to figure out how I could do better. At the time, the NCCC was organizing to win its first Sweepstakes, and I really wanted to help! I operated my first SS in Northern California from WA6AHF (SK), then later from W6JZU, K6UD(SK), W6XR and WA7NIN (now W7UA). I operated many CD parties and contests from WB6ION (now WC6H), W6RGG and N6BT."

"The NCCC has been a huge part of my life since I first moved here. I had no station—not even a car—yet I was always able to find someplace to operate. I am not currently an officer, but I have served as Vice President/Contest Chairman and President. The friendly competition within the club between the likes of N5KO, W6NL, N6RO, W6OAT and N6IG (at W6GO) is always very close. There is a great deal of mutual respect." What about your southern rival club? "We don't think about the SCCC much until they issue us a challenge. Then, watch out!" Look alive, Angelenos!

Bob also does a fair amount of DXing from his home station, now somewhat evolved from the one shown in the mid-seventies "before" picture. Out on the West Coast, how does a guy stay motivated through the trough of a solar cycle? "I worked hard to get 5BDXCC. That kept me and my station active on all bands. I also love the Sprints and Sweepstakes, so who needs sunspots?" Inside the present shack are a pair of FT-1000MPs, an Alpha 86, an Alpha 87A and a two-radio switchbox designed and built by N6BT.

"I live on a small suburban lot, with a single 89-foot self-supporting tower. I wanted monobander performance, so the design was quite a challenge. All of the antennas are squeezed onto 14 feet of mast, but there is very little interaction. From the top down, they are a Create 80-meter rotatable dipole, a 5-element 10-meter Yagi, a 5-element 15-meter Yagi, a 5-element 20-meter Yagi (on a 42-foot boom), a 3-element 40-meter Yagi and the tower is shunt-fed with an Omega match on 160."

"The nice thing about monobanders is that they provide built-in adjacent band attenuation and make it a lot easier to set up a two-radio operation. All of the antennas were designed and installed by Force 12 founder Tom Schiller, N6BT, back in 1989 (before Force 12 even existed—Bob claims he helped Tom come up with the name of the company.). Tom used Hygain parts, but he remodeled all of the dimensions and lengthened some of the booms."

"Some day, I'd like to move to a place where I could have an acre or two of flat land, two or three towers, and no line noise! Hilltops are nice, but they are expensive, it's hard to keep antennas in the air, and to account for take-off angles when the terrain slopes irregularly downhill. Even though there are underground utilities in my current neighborhood, line noise to the east has been a terrible problem for the last few years."

"You have to expect TVI and telephone interference problems in the suburbs, and N6EK taught me that the best way to deal with them is to hand out free filters and ferrites to anyone who complains. This works far better than telling a neighbor to contact the manufacturer, especially if the filter you give them provides immediate relief. I consider it a small part of the cost of the operation."

Bob is in the thick of technology at home, at work and in the community. Does it affect contesting? Of course! "It's amazing how few people still use pencil, paper and dupe sheets. Computers have made contesting easier for almost everyone. On the other side, sophisticated log-checking software makes it very difficult for poor operators to claim victory. Win or lose, you know your log was judged fairly. That's a vast improvement over what we've experienced for most of the history of contesting."

Log checking is a hot topic in contest circles these days (when has it *not* been, really?) with available computer power and electronic logs driving the changes. As the Pacific Division's Contest Advisory Committee representative, Bob helps the ARRL grapple with various contest issues. "Log checking can always be improved. As 6Y2A, we didn't lose credit if someone logged us as BY2A, but we did lose credit if they logged us as BY1A (a two-character error). That doesn't seem right, especially if the times match up. Not only call sign, but the received exchange and QSO time needs to be used."

"A 3-QSO penalty seems too severe, but there should be some penalty to discourage guessing. Assuming that guessing at a letter gets you the 'right' call 50% of the time, the penalty for a busted call should be one extra QSO to cancel the results of guessing, not three. We can catch power cheaters by peer pressure on 3830 and on the Internet after the contest. Packet cheaters can be caught easily with the right software, as they follow the spots up and down the band."

As a trailer on the Baby Boomer bulge, the future of contesting is an interesting proposition. "The health of the Sprint contest is an interesting trend. Conversely, the number of JAs available to work on CW is heading down fast. Video games and the Internet are to blame. But records keep falling. Antennas, radios, contesting software and propagation continue to get better year after year. If this is the 'last great solar cycle' for HF contesting (I hope not), then the records set during this cycle may never be broken."

But who could not be excited about WRTC-2000? "It was a great honor to represent NCCC in the 1996 event with Danny, K7SS—and fun, too. I'm very much looking forward to meeting all those great operators again in Slovenia." See you there! ■

Propagation

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Should I Put Up a Higher Antennax?

Back when I lived in the Dallas/Fort Worth area (1979-1988), I had a Cushcraft A3 tri-bander at 40 feet on a Rohn 25 tower. I always wanted to add another 40 feet to the tower to get the antenna up to 80 feet. I was pretty sure it would improve my signal for contesting and DXing, but I never followed through with this. I didn't know if the improvement would be worth the extra money for the tower sections, guy wires (my 40-footer was self-supporting with a house bracket at 15 feet) and the effort to do all this. (I didn't even begin to address the zoning issues in our residential neighborhood). So my contesting and DXing as K9LA/5 continued status quo with the tri-bander at 40 feet.

Nowadays, we have the tools to make a pretty good assessment of how much improvement I might have experienced had I extended the tower. We owe this capability to Dean Straw, N6BV, of the ARRL. Using *VOACAP*, he determined what elevation angles are needed for the four big contest months—February, March, October and November. (In reality the data is probably good for *all* months.) He uses three levels of solar activity and examines the propagation from various areas of the world to selected target areas on 80 through 10 meters. The original intent of this analysis was to determine what angles needed to be covered when designing an antenna system, but it also is great for comparing antennas at two different heights in terms of the percentage of time when one antenna height is better than another.

All this elevation angle information is on the disk that's bundled with the 18th Edition of *The ARRL Antenna Book*. It can also be downloaded from the ARRL's Web site at **http://www.arrl.org/notes/antbook/yt-files.html**. Be sure to read the accompanying text.

Let's analyze my hypothetical case to see what I would have gained by raising my A3 up an additional 40 feet. As we'll see, I should have put forth the effort and done it!

Table 1 is the elevation angle statistical data for a path from Dallas to southern Africa on 20, 15 and 10 meters. I only show southern Africa to keep the table from getting too big—the data to the other five areas of the world (Asia, Europe, JA, Oceania and South America) is in a similar format. Each data value is the percentage of time that the indicated angle is predominant. For example, the value for 3 degrees on 15 meters is

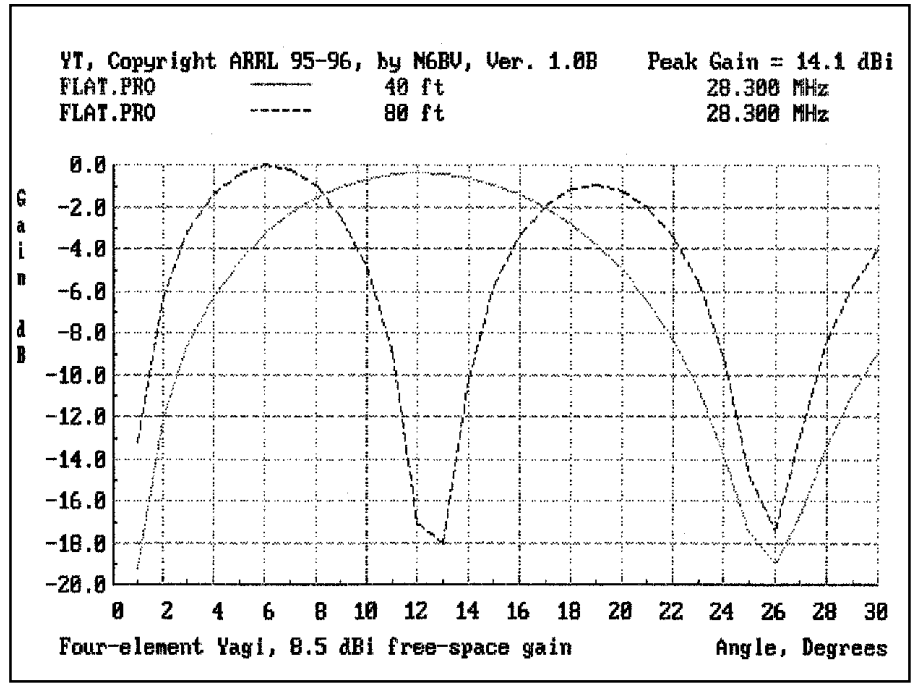

Figure 1

Table 1
Dallas to Southern Africa

Elevation Angle	*20 meters*	*15 meters*	*10 meters*
1	16.3	13.3	25.4
2	11.5	5.0	12.4
3	14.3	21.2	10.5
4	8.1	19.9	13.4
5	14.0	8.3	10.5
6	10.4	10.4	12.0
7	8.1	13.3	5.7
8	7.6	2.9	4.3
9	9.6	5.4	5.7
10	0.0	0.4	0.0
11	0.0	0.0	0.0
12	0.0	0.0	0.0
13	0.0	0.0	0.0
14	0.0	0.0	0.0
15	0.0	0.0	0.0
	99.9	100.1	99.9

Table 2
Percentage of Time that 80 Feet is Better than 40 Feet

Band	*Africa*	*Asia*	*Europe*	*Japan*	*Oceania*	*South America*
10 meters	94%	94%	76%	89%	97%	67%
15 meters	100%	100%	89%	93%	100%	91%
20 meters	100%	100%	99%	100%	100%	98%

21.2—that means that 3 degrees is the predominant angle 21.2% of the time. Note that each column for a given band adds up to 100% (or real close, depending on round-off error), as it should.

Armed with this information, I can now model my A3 at 40 feet and at 80 feet. I did this using another of N6BV's works—his Yagi Terrain Analysis software (*YT*) that's also bundled with the 18th edition of *The ARRL Antenna Book*. I could have used *MN*, *MININEC* or *NEC*, but I chose *YT* because it provides a nice comparative plot of two antenna systems on the same graph. It also allows up to four stacked Yagis per antenna system and provides user-definable terrain profiles for other than flat ground. For more details on *YT*, refer to N6BV's article in the July 1995 *QEX* or the shorter version in the Nov/Dec 1995 *NCJ*.

Figure 1 is a comparison of the A3 at the two heights on 10 meters, and it's plotted in rectangular format (most of the time we display antenna patterns in polar format). The horizontal axis is elevation angle and the vertical axis is gain referenced to the peak gain of the antenna system that has the highest gain (which is the A3 at 80 feet in my case). One note—*YT* uses a 4-element monoband Yagi as the default antenna, so I did not really model my A3 at 40 feet and at 80 feet. This is close enough as long as both antennas are the same and only a comparative analysis is desired—if you want absolute gains, then you'd have to model your specific antenna.

Now let's set an improvement criteria. I'll simply go with when the A3 at 80 feet is better than the A3 at 40 feet (another criteria might be when the A3 at 80 feet is at least 3 dB better than the A3 at 40 feet). In other words, at what elevation angles is the A3 at 80 feet better than the A3 at 40 feet? As an example, on 10 meters, **Figure 1** shows this to be at angles less than or equal to 8 degrees and greater than or equal to 17 degrees. Now all we have to do is go to **Table 1** and add up the percentages for angles that meet these criteria. This will give the percent of the time that the A3 at 80 feet is better than the A3 at 40 feet.

Table 2 shows this data for all three bands. As an example, the A3 at 80 feet is expected to be better than the A3 at 40 feet to Asia all the time (100%) on 20 meters. Looking at all three bands to all areas of the world shows what I said earlier—I should have done it!

Does that mean I should have taken the A3 and moved it up to 80 feet and not had anything at 40 feet? Nope—the 10-meter data indicates that I'd need the lower antenna 33% of the time. That's enough to justify it. What about 15 and 20 meters? Is a lower antenna justified? The data suggests no (especially on 20 meters), but remember this analysis is for all hours, all seasons, and all SSN bundled together. If these three variables were separated out, there just might be specific times when the lower antenna is definitely needed—indeed this is the case based on actual observations. It may not amount to much of the time, but a competitive contest station needs to address this. This is why many contest stations have relatively low antennas in addition to the ones located way up there. This concept falls very nicely in line with Carl Kratzer, K3RV's *Propagation* column in the Jul/Aug 1993 *NCJ*.

This methodology also gives insight into why stations at high elevations or stations with very high antennas sometimes hear DX that us mortals down lower don't hear. There are times when very low angles are dictated, as suggested by the data in **Table 1**, which means high elevation stations or stations with very high antennas will have the advantage. I've experienced this phenomenon with very high antennas at N5AU when we lived in Texas and more recently at K9UWA here in Fort Wayne.

Two final comments are in order. First, this analysis was done for flat ground to keep it simple. My terrain in Texas was actually a small hill. That would tend to modify the results somewhat, so the terrain profile feature of *YT* should really be used.

Second, how accurate is the elevation angle data? Although *VOACAP* and its parent *IONCAP* have been subject to much validation, this has been done in the MUF (*maximum usable frequency*) and signal strength area. I'm not aware of any direct validation of the elevation angle data. K3RV, in his Jul/Aug 1993 *NCJ* column, referenced two technical papers dealing with signal strength comparisons of antennas at different heights. But these two papers did not actually measure arrival elevation angles.

Along these lines I found three other papers that actually measured the arrival elevation angle of incoming DX signals, and N6BV confirms that *VOACAP* is in general agreement with these measured results. This certainly isn't much of a validation program, but something is better than nothing. When you think about it, if the validation of MUF and signal strength is acceptable, then probably the elevation angle data is validated, as it goes hand-in-hand with the other two items. ■

CAC Report

Lew Sayre, W7EW/W7AT
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CAC... CAC... CAC... Sounds like either a cat clearing a hairball or a contester clearing an obstructing cap off a cooling non-terminating beverage lodged near the back of his tongue. In this epistle however, CAC refers to the Contest Advisory Committee. The *NCJ* Editor, K7BV, astutely noted that my name and call were listed on the masthead as the Chairman of this Contest Advisory Committee and as such I am expected to write things for this periodical. In this issue I'll define what the CAC is and how it functions.

The committee is composed of one representative from each Division plus a representative from the RAC for a total of 16 stalwarts. The Division Director appoints the contest representative for his/her Division. The representative serves until he/she is sick of it, dies or is asked to resign due to "philosophical differences in the Division."

The Contest Advisory Committee serves at the pleasure of the ARRL Board of Directors and reports to the Membership Services Committee. The Committee can not officially consider anything until it has received a specific question from the Membership Services Committee (*MSC*). When an issue is sent to the CAC from the MSC for consideration, the CAC discusses the issue with each CAC representative, and they are responsible for soliciting input from contesters in their particular Division. Eventually a vote is taken on the issue with each Representative usually pointing out the rationale of their vote. The results of the ballot are then forwarded to the MSC for MSC's consideration. The CAC opinion can then be followed, partially endorsed or ignored completely by the MSC. The CAC is purely an advisory committee and what we recommend has no power, other than the power of rational thinking by 16 recognized, serious contesters sprinkled throughout the US and Canada.

The CAC can and does generate issues that we'd like to discuss about various contesting situations. This is forwarded to the MSC, but unless the MSC wishes the CAC to officially consider an issue and sends it back to the CAC for discussion, then the CAC won't consider whatever it was that we originally sent to the MSC. Sound confusing? Not really. Confusing would be using your UBN number as a factor in your medical deductions on the long form 1040.

Sometimes the CAC is busy with several questions and sometimes there is a very long time before we get asked to consider something. This is the nature of contesting also. We don't get paid by the issue. In fact we don't get paid anything at all. Not one shoe, garment or semi-conductor company has approached me or the committee about endorsements either.

This implies that we are either crazy or that we care enough about contesting to invest time into it to keep it fun.

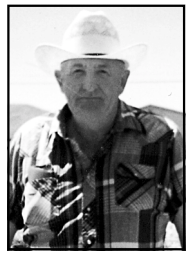
We intend, over the next several issues of the *NCJ*, to introduce via these pages the members of the Contest Advisory Committee so that the contesters will get to know them a bit better, so when an issue is up for ruminating, perhaps the contesting community will remember the *NCJ*, dig out an old issue, discover who their CAC Representative is and let those feelings flow. This issue's *NCJ* Profiles features the Pacific Division's representative—Bob Wilson, N6TV.

Contesters communicate. The Contest Advisory Committee has as its middle name "advisory." Hopefully when we mix the two together we'll arrive at what is best for the sport of contesting. The CAC tries to do their part. The purpose of this dispatch is to help the contesting community understand how we interface with the policy makers and how best to get the community's opinions to the right place.

73 and I remain, Lew Sayre, W7EW/W7AT, Contest Advisory Committee Chairman lew@teleport.com. ■

Contesting for Fun!

Ron Stark, KU7Y
ku7y@sage.dri.edu


KU7Y

Hi all! Here it is the night before the NA Sprint and it just seems right to go with a story about just how much fun some people get out of QRP contesting. Don't think that you have to be young to go running around in the High Sierras where the air is thin. Allan is a Granddad!

I worked both of these stations while I was at and returning from the Fort Tuthill Hamfest in Flagstaff, AZ. From what I heard them describe over the air, I immediately felt that they just had to write up an account of this adventure for all of us to enjoy.

CASUAL CONTESTING IN THE BACKCOUNTRY

Allan G. Taylor, K7GT, and Ed Loranger, WE6W

I recently began taking QRP HF gear on quick trips to a nearby ridge for general operating and some limited efforts in the QRP contests. This year I decided to try combining a major backpacking trip in Yosemite National Park and an HF QRP/portable operation.

Sunday, July 25, was the day of the annual *Flight of the Bumblebees* contest. I found a suitable CW nut (Ed, WE6W) to go along with me. Our purpose was not to win the contest but to participate from a truly unique site. That much we *could* do. Both of us obtained "Bumblebee numbers" from Russ, AA7QU, to use for the contest.

The Adventure Begins

Our trip began on July 23rd with a day of acclimatization at an elevation of 7,000 feet. Of course, the antenna was up even before the tent, and we had fine propagation up and down the West Coast on 40 meters. The actual hike in began just before noon on the 24th and, after some adventures—including going down to the 6,500-foot level and back up to the 7,100-foot level—we arrived at a very beautiful campsite on the Clark Fork just where it enters Illilouette Creek.

For the benefit of those readers not familiar with Yosemite, I'll explain that many of the streams in the south part of the park end up cascading over the cliffs of Yosemite Valley. Illilouette Creek is no exception, and feeds Illilouette Falls near Glacier Point. Even Clark Fork has a small falls just before it drops into the Illilouette. We chose a camp upstream enough to avoid some of the white noise generated by the falls!

Ed and I decided to do some testing that evening to determine what two closely-sited QRP stations would do to each other when operated on the same band. We had both packed-in completely independent stations, each one of us with equipment for both 40 and 20 meters. Our tests were intended to help us determine how far apart we needed to be so that we could operate on the same band simultaneously.

Two dipoles for 40 meters were set up. I had no appreciable problem with Ed's signal getting into my little rig, but I apparently tore his up rather badly.

Communications Breakdown

After a while, Ed was shouting across the forest to me about his rig malfunctioning, and he soon determined that his 40-meter rig was not putting any significant RF into the antenna! Our first guess was that the output transistor was blown. By now it was dark. At least we knew there was a good explanation for his rig not bothering mine! We hit the sack while still mulling over equipment sharing options—none that were particularly appealing.

Ed awoke with a full-blown diagnosis and attack plan for repairing his 40-meter rig. Even before I finished cooking my oatmeal he had determined the problem and was working on a temporary fix. The drive level potentiometer had a broken terminal (on the wiper). The material used to fix it was... of course... DUCT TAPE! He was on with full power in about ten minutes.

Our Lofty Perches

It was now two hours before the start of the contest—10 AM Pacific Time. While he ate breakfast I scouted around for operating sites better than that of our camp. (It was right on the Clark Fork and therefore pretty much in a hole.) Not even 300 yards to the southeast I found a pleasant granite outcropping with suitably spaced trees for two dipoles. It even came with a custom operating table of Yosemite granite and an adjustable granite slab stool.

I headed back to camp and soon returned with Ed to check the spot out together. Almost immediately, Ed spied a granite ridge to the northeast that seemed to be beckoning. It was decided that I would set up at the first site (labeled Peak 7232 on the Merced Peak quadrangle map) while Ed would operate from somewhere on the ridge to the northeast at an elevation of about 7,800 feet.

Antenna setup was straightforward, if not speedy, and I was on for some 40-meter test QSOs by 9:30. Shortly afterward I moved up to 20 meters to run


The K7GT/P station set up on a convenient granite table.


Ed's *very* relaxed operating style!

a few more. A bit later I found Ed on 40 and our initial estimation was that we could coexist there and most likely on 20 meters as well. I had only radio contact with Ed until 4 PM that evening, although Ed claims he waved at me from his perch on the ridge.

Contesting Fun

The contest started with both of us on 40 meters—Ed was my first contact. I had one more QSO and concluded that Ed and I could *not* coexist on the same band at the same time! We negotiated a schedule via radio where we would alternate on the hour, with Ed on 40 meters and me on 20 for the first hour. The remainder of that first hour led to several contacts.

Jumping to 40 meters when it was my turn, I had good results, working almost all of those called. In the final analysis, the very scenic mountains to the east, the Clark Range, was a substantial limitation on 20 meters, and our lack of 15-meter gear kept us from being competitive in any way. We both had barrels of fun anyway.

One highlight was being called by my contesting buddy, Bill, W1HIJ/6. Bill and I entered the last two ARRL DX 'tests (CW) as Multi/Single efforts (no, NOT QRP). But this time I was out in one of my favorite places operating with complete stations for two bands that I carried up there under my own power. The view of the Clark range was sweet compensation for the loss of signals that it caused! I was truly in ham radio nirvana.

When we regrouped back at camp later, Ed told the tales of his adventure on the ridge. Ed had a stunning view in all directions, with his view to the south being only slightly obscured. Ed chose a very casual operating style that allowed for extensive tanning. He is very prone to being diverted from the contest mode and falling into a good old-fashioned ragchew at any time! That was fine—after all, we were there to have FUN!

Post Contest Adventures

We continued on our backpack trip the next day (Monday) with more unplanned adventures. As it turned out, we had to turn back and leave the backcountry on Wednesday due to boot failure (no, not a computer disk drive, ...a BOOT!). We used our QRP HF gear to get messages out to our families about our early return plans and also had many wonderful chats with operators up and down the Pacific coast.

All in all, our casual entry in this contest was a wonderful thing. Winning is great, but participating is where it is at for us. Upon our return, I submitted a detailed account of our entire trip, along with pictures, to the on-line magazine *The Sojourner*, sponsored by the Adventure Radio Society. A more complete description of our trip can be found there, including 21 pictures. Go to: **http://www.natworld.com/ars** and select "Sojourner" or see the "Yosemite Trip" link on my Web page: **http://www.qsl.net/k7gt**.

Once the contest results were published, we found that we *had* won an award after all. No, not for our point totals—we were off the highest scores by a factor of almost 4—we had won for the "Most Beautiful Site." 'GT finally wins a contest!—or should I say Yosemite wins a beauty contest.

Equipment Complement

For gear, I packed a Wilderness Radio NorCal 40A (40 meters) and SST (20 meters), both with KC1 memory keyer/counter units, and both capable of putting out about 2 W. For the antenna system, I used an Emtech ZM2 tuner with coax-fed dipoles constructed of 20 AWG wire for each of band. The battery was a 10-pack of D cells—backup batteries were AA cells in various configurations. My iambic paddle is a homebrew plexiglas and copper strap unit and I brought along a White Rook iambic as a backup. For headphones I used Radio Shack Nova 43s and packed a lightweight fold up set of Sony headphones as a backup.

Ed, WE6W, packed in an Oak Hills OHR100 (40 meters/5 W) and a Small Wonder Labs GM20 (about 2 W on 20 meters). He used (and therefore had to carry!) a Vibroplex bug. His power source was a 7 Ah lead-acid battery and his antenna system consisted of dipoles fed with homebrew ladderline and another Emtech ZM2 antenna tuner. His headphones are military surplus.

Coincidental Contact

There is a footnote to this story. A few weeks after we had returned home, I participated in an Emergency Preparedness Fair in a nearby town (Hanford, California) running an HF station. I took along the 40-meter portion of my wilderness setup, the NC40A station, and put it on display. There were also pictures of both Ed and I operating from a camp near the Illilouette Creek later in our trip.

As it turns out, I was describing our trip and the use of the NC40A to an amateur in nearby Visalia and was called immediately at the conclusion of that QSO by Eric, KU6J/P. Eric was operating from Paradise Lake on the Pacific Crest Trail near Truckee/Lake Tahoe and was using a NC40A—the very rig I had on display! I turned the volume up and serenaded the bystanders with the sweet sound of a NC40A in its native habitat!

When you hear K7GT/P or WE6W/P on the air, please be sure to give us a shout!

Thanks Allan and Ed! Now to continue my preparations for the Sprint. All I need to do is check out the rig, computer and rotator and to get something up for 80 meters. Looks like I'm way ahead of last year's schedule already!

Good luck to all, de Ron, KU7Y

For more information about the people, equipment and philosophy of QRP, please check out these two Web sites. Each of these sites also contain many links to other related sites. The first is the home page of the QRP Amateur Radio Club International: **http://www.qrparci.org/**. The second is the home page of the NorCal QRP Club: **http://www.fix.net/~jparker/norcal.html**. ■

Contest DX Ventures

DXpedition Destinations

Sean Kutzko, KX9X
kx9x@uiuc.edu

Greetings, adventurous contesters! I hope everybody has had a good showing in this season's first events. In this installment, we'll return to the Caribbean for our featured DXpedition location. I'd like to invite everyone to have an inside look at a station many of us have worked in the contests—8P9Z in Barbados. I asked Steve, K4FJ, to write a few words about this well-known contest station—and one that is available for YOU to rent. Take it away, Steve!

"During the past six years, K3KG and I have developed this Barbados station into one that can be competitive in any contest event. The station is located in a leased cottage on the grounds of Warleigh Plantation, a sugar cane operation, near Speightstown in the parish of St Peter on the northern end of the island. With the assistance of the former plantation manager, 8P6PW, we were able to secure permission for a long-term lease and have erected several towers and numerous wire antennas.

The cottage is completely fenced in from the surrounding plantation grounds and is well-maintained year around. Two large bedrooms easily accommodate four adults and extra mattresses are available if needed. The kitchen is fully equipped with a stove, refrigerator and a washing machine for laundry. The operating room occupies about half of the living room in the front area of the cottage. A large porch provides a comfortable relaxation area for guests

The 8P9Z cottage, located on the Warleigh plantation.

and offers a pleasant view of the Caribbean Sea to the west.

Three towers support four Yagi and three wire antennas. A Rohn-Spaulding tower features a TH-6DX at 50 feet and an 80-meter inverted-V favoring the US. A Rohn 25G tower supports a 5-element 10-meter Yagi at 100 feet, a 3-element 40-meter Yagi at 90 feet, a 160-meter inverted-V and an 80-meter sloper that favors Europe. The third tower, a crankup belonging to 8P6PW, supports a
TH-7DXX at 55 feet. Future plans call for a 6-meter beam and a vertical array for 80-meters.

A gasoline generator is available (although power failures are a rare occurrence). It is housed in a cinder block building separate from the cottage.

Renters are encouraged to bring their own radio equipment.

The location of the plantation is away from the heavily populated southern end of the island but only a few miles from convenient shopping and dining in Speightstown and Holetown. Travel from the airport takes about 45 minutes, but does require special attention to map details.

Licensing in Barbados is not difficult—but you must appear in person to show your current license, fill out a form and pay the necessary fee. Licenses are generally issued in sequence and visitors are assigned 8P9 calls.

While the south and west coasts of Barbados are the locations for the popular hotels and lovely Caribbean beaches and restaurants, the east coast view of the Atlantic Ocean from the high cliffs in St John Parish is simply breathtaking. Your camera should get a good workout on this island.

Public bus transportation is available near the cottage, however guests are encouraged to hire a rental car so they can fully enjoy the beauty of this lovely island. The island is about 30 miles long by 10 miles wide and is shaped much like a pear with the narrow end pointing north. Most Barbados roads are good, but one must pay attention—driving is on the left side of the road! Sightseeing bus tours are available for the less adventurous types.

A few photos of the cottage and plantation site are posted on the 8P9Z Web site, **http://www.erols.com/k4fj/**, and additional cottage info is available on request from **k4fj@aol.com** or **8P9Z@sunbeach.net**. Detailed information about Barbados and the island's various attractions can be found at **http://www.funbarbados.com**.

73, Steve, K4FJ"

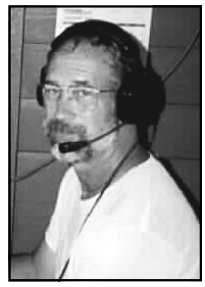
Thanks for the input, Steve! As always, if you have any information for this column, please e-mail me. I (and everybody who reads this column) would like to hear from you. Be sure to visit the QTH Rental Page at: **http://hobbes.ncsa.uiuc.edu/sean/qthlist.html**

73 es see you from the other side!
Sean, KX9X

The Contest Traveler

Joe Pontek, K8JP
v31jp@logical123.net

Well, Bev and I have been making preparations for an extended trip to Belize. This time, we are planning a five-month stay—which is a little different than preparing for a month or so. Besides the normal



K8JP

ham gear and vacation supplies, for a trip of this duration we will need to include some long-term provisions—such as medication, vitamins and various other sundries.

We found that our medical insurance provider's "prescriptions-by-mail" service fits us fairly well. We can receive up to a 3-month supply. (This is not quite enough, but we are working on a method for getting our replenishments shipped to us.)

Most of the other supplies that we need we can acquire in Belize without difficulty, but on our previous trips of shorter duration, we found that it makes economic sense to carry in as much as possible. If you're on a trip to a travel location and are considering a return trip of a longer duration, some price checking and window-shopping might be in order.

Another hurdle I needed to overcome for this trip was general communications—primarily e-mail. Currently, we do not have telephone service at our

place. Even if we can establish a hookup, it would be a rural RF telephone link—this limits data speeds to 4800 baud, at best. There are a couple of walk-in Internet service centers in nearby Dangriga.

When I initially contacted my local Internet service provider (*ISP*), I was told I could pick up my e-mail from any Web connection by using a back door method. After trying that and failing to get access to my e-mail account, another call put me on to an alternate technique.

I already had a free Web e-mail address set up with Netscape. Netscape can provide a service where they will collect messages from multiple e-mail addresses and forward them to your Netscape Web Mail account. This allows you to read them anywhere you can get Web access. Please note that this collection feature will not work if your current mail host is not compliant with Post Office Protocol version 3 (*POP3*) or does not allow POP-ping from outside servers. America Online, for example, is *not* POP3 compliant. If you are unsure, check with your system's administrator or your Internet service provider.

There are other providers that can pick up your e-mail from your local ISP. Mail Excite (**http://www.mailexcite.com**) and Yahoo (**http://www.yahoo.com/**) are a couple of examples.

With this new setup, I can upload logs to my QSL manager in a timely manner, send in my contest logs and keep in touch with the family from whereever I can sign on to the Web. Ah, one more hurdle out of the way.

Have you ever kept track of how much toilet paper; err… toothpaste or shaving cream you use per month? Interesting and surprising results! By the way, T.P. makes great packing for delicate electronics items—and this creates fewer questions as to why you are transporting so many rolls of T.P. and paper towels!

Well, by the time you read this, we should already have been in the warm climate of Belize for awhile—enjoying rum punch, fresh Grouper and the other local delicacies. New antennas are in store for the V31JP station; so we hope to have a signal that's easy for all to work. Check out our Web page at **http://sites.netscape.net/v31jp/homepage** to keep up with our progress.

As you travel about, tell us about your adventures and send us pictures. Pass along your hints for travel arrangements, dealing with customs, licensing, wild stories—whatever. I hope to see you in the pileups.

As always, safe and enjoyable travels—K8Joe "Palooka"

Contest Calendar

Compiled by
Bruce Horn, WA7BNM
bhorn@hornucopia.com

Here's the list of major contests to help you plan your contesting activity through February 2000. The Web version of this calendar is updated more frequently and lists contests for the next 12 months. It can be found at **http://www.hornucopia.com/contestcal/**.

Please note that the Stew Perry Topband Challenge (160 meters) is being held a week earlier than usual in order to avoid the Christmas holiday weekend.

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

November 1999

Ukranian DX Contest	1200Z, Nov 6 to 1200Z, Nov 7
ARRL Sweepstakes Contest, CW	2100Z, Nov 6 to 0300Z, Nov 8
NA Collegiate Championship, CW	2100Z, Nov 6 to 0300Z, Nov 8
High Speed Club CW Contest	0900Z-1100Z and 1500Z-1700Z, Nov 7
Japan Int. DX Contest, Phone	2300Z, Nov 12 to 2300Z, Nov 14
WAE DX Contest, RTTY	0000Z, Nov 13 to 2400Z, Nov 14
ALARA Contest	0001Z-2359Z, Nov 13
OK/OM DX Contest, CW	1200Z, Nov 13 to 1200Z, Nov 14
Six Club Winter DX Contest	2300Z, Nov 19 to 0300Z, Nov 22
LZ DX Contest, CW	1200Z, Nov 20 to 1200Z, Nov 21
IARU Region 1 160m Contest, CW	1400Z, Nov 20 to 0800Z, Nov 21
LI/NJ-QRP Doghouse Operation Sprint	1700Z-2100Z, Nov 20
ARRL Sweepstakes Contest, SSB	2100Z, Nov 20 to 0300Z, Nov 22
NA Collegiate Championship, SSB	2100Z, Nov 20 to 0300Z, Nov 22
RSGB 1.8 MHz Contest, CW	2100Z, Nov 20 to 0100Z, Nov 21
CQ Worldwide DX Contest, CW	0000Z, Nov 27 to 2400Z, Nov 28

December 1999

ARRL 160-Meter Contest	2200Z, Dec 3 to 1600Z, Dec 5
TARA RTTY Sprint	1800Z, Dec 4 to 0200Z, Dec 5
ARRL 10-Meter Contest	0000Z, Dec 11 to 2400Z, Dec 12
OK DX RTTY Contest	0000Z-2400Z, Dec 11
RAC Canada Winter Contest	0000Z-2359Z, Dec 19
Croatian CW Contest	1400Z, Dec 18 to 1400Z, Dec 19
Stew Perry Topband Challenge	1500Z, Dec 18 to 1500Z, Dec 19
Internet CW Sprint	2300Z, Dec 31 to 0100Z, Jan 1

January 2000

Japan International DX Contest, 160-40 meters	2200Z, Jan 7 to 2200Z, Jan 9
Midwinter Contest, CW	1400Z-2000Z, Jan 8
ARRL RTTY Roundup	1800Z, Jan 8 to 2400Z, Jan 9
North American QSO Party, CW	1800Z, Jan 8 to 0600Z, Jan 9
Midwinter Contest, Phone	0800Z-1400Z, Jan 9
Hunting Lions in the Air Contest	0000Z, Jan 15 to 2400Z, Jan 16
LZ Open Contest, CW	1200Z-2000Z, Jan 15
North American QSO Party, SSB	1800Z, Jan 15 to 0600Z, Jan 16
ARRL January VHF Sweepstakes	1900Z, Jan 22 to 0400Z, Jan 24
CQ 160-Meter Contest, CW	2200Z, Jan 28 to 1600Z, Jan 30
REF Contest, CW	0600Z, Jan 29 to 1800Z, Jan 30
UBA Contest, Phone	1300Z, Jan 29 to 1300Z, Jan 30

February 2000

Minnesota QSO Party	1400Z-2400Z, Feb 5
YL-OM Contest, CW	1400Z, Feb 5 to 0200Z, Feb 7
North American Sprint, Phone	0000Z-0400Z, Feb 6
CQ/RJ WW RTTY WPX Contest	0000Z, Feb 12 to 2400Z, Feb 13
Asia-Pacific Sprint, CW	1100Z-1300Z, Feb 12
Dutch PACC Contest	1200Z, Feb 12 to 1200Z, Feb 13
YL-OM Contest, SSB	1400Z, Feb 12 to 0200Z, Feb 14
North American Sprint, CW	0000Z-0400Z, Feb 13
ARRL International DX Contest, CW	0000Z, Feb 19 to 2400Z, Feb 20
CQ 160-Meter Contest, SSB	2200Z, Feb 25 to 1600Z, Feb 27
REF Contest, SSB	0600Z, Feb 26 to 1800Z, Feb 27
UBA Contest, CW	1300Z, Feb 26 to 1300Z, Feb 27

RTTY Contesting

Jay Townsend, WS7I
ws7i@ewarg.org

Old Tricks and Forgotten Strategies

The problem isn't learning *new* tricks; it's forgetting the *old* ones! This is especially true if the old tricks were pretty good. If they were hard to learn, like contest tricks, we always assume they have some permanent value. But even some of these eventually become useless and must be discarded, along with many other things from times past.

Analysis is my number one trick. I look at old contest results and contest logs and then carefully study the current rules. If I intend to travel for a particular contest, I ask questions and try to get copies of the logs from those who have gone before. For some contests, the best strategy is to travel to a rare three-point country with excellent propagation to Europe and the ability to still work into the states. For others you have to decide where your advantage might lie. Half of the fun of contesting is in the preparation.

The First Major HF Contest of '00

The first major all-band HF contest that takes place in the year 2000 will be the ARRL RTTY Roundup on January 8th and 9th. Let's just hope all of our computers will continue to function and that our power companies can provide the juice for the event. As one of the fastest growing contests (up 26% in 1999), I'm looking forward to even greater activity in 2000.

Strategy and advanced planning for an upcoming contest, along with a short analysis of last year's ARRL RTTY Roundup, are this month's topics. When preparing for any contest, you need to carefully read and understand the rules and identify the entry category that will work best for you. Planning is a fun thing to do. Finding a niche that best suits your current situation is always interesting.

Start with the Rules

First, you'll need to locate the rules. Usually the best source is the contest's sponsor. The official sponsor's version of the rules is more likely to be accurate and up-to-date than those posted on some contesting mega-site. Any last minute changes in the rules can be identified and plans can be made to take advantage of (or to at least act in accordance with) these changes. For the ARRL RTTY Roundup, you'll find the official rules at **http://www.arrl.org/contests/**. For those contests that do not have an official sponsor's Web site, my favorite site for accurate rule updates is **http://home.sol.no/~janalme/RTTY.html**.

Let's look at the ARRL RTTY Roundup rules and see what strategies we can devise. First of all, the Roundup is fairly unusual, as it limits the total operating time—24 out of 30 hours. This helps equalize any geographical advantages.

Roundup does not have band multipliers. This tends to level the playing field for those with limited band capabilities. You can choose to compete in either a high or low power category. It also offers only two types of operator classes—single operator and multi-operator/single transmitter. This results in a total of four classes of operation.

Pick a Power and a Class

The Roundup was the first RTTY contest to offer a low power category. This category has remained the predominant choice. High power entrants have the advantage of being able to hold a frequency slightly better than the low power competitors. As improving propagation on 15 and 10 meters helps to reduce the congestion on 20, the low power classes should continue to gain in popularity.

What's the "real" difference between the single-op and multi-op classes in this contest? This is not very well understood. Most get the idea that the multi-op class is for the big guns. Nothing could be further from the truth. There is a major equalizer—6 band changes per hour rule that applies only to the multi-op entrants. This rule essentially makes using a second radio by a multi-op of less advantage to them than to a single-op. This is why the multi-op scores are always lower than the single-op scores. Most of the top singles in both the high and low power classes are using two or more radios during the contest. The multi-op can only get a few additional multipliers using a second radio—and are in fact somewhat penalized for doing so—as they have to stay on the band or burn a change.

Rate vs Mults

The Roundup results in the highest rate of any of the RTTY contests—it rewards good choices made during the event more than most of the other contests.

To give you an example of the rate potential, in 1999 N1RCT racked up 1,230 QSOs in his 24 hours of operation. He only managed 1,150 contacts in the entire 48 hours of CQWW RTTY Contest held three months earlier.

As Dennis, K7BV, once told me, "*I like rate*." If that is his favorite thing in a contest, then the Roundup is *his* RTTY contest. It smokes for each and every hour. Unlike some stateside oriented contests—the last hour frequently generates the highest rate of the entire contest.

Multipliers are what make this contest interesting. There are some 115 to 130 multipliers available, with more showing up every year. Unlike Sweepstakes, you can't just blow and go and get them all. You have to make specific contesting decisions. Making the right ones will determine where you finish in this one.

I remember a couple of years ago when two locals, W7RY and WA7EGA, were neck and neck during most of the contest. One decided to search and pounce on 20 meters during the last opening from the Pacific Northwest—the other chose to run 'em.

The year before the correct winning strategy during that part of the contest was search and pounce. This time the station that decided to CQ and run stations brought home the bacon. The

Upcoming RTTY Contests

Contest	*Dates*	*Starting Time*	*Ending Time*
Ukrainian DX	Nov 6-7	1200Z Saturday	1200Z Sunday
Worked All Europe DX	Nov 13-14	0000Z Saturday	2400Z Sunday
TARA RTTY Sprint	Dec 4-5	1800Z Saturday	0200Z Sunday
OK RTTY DX	Dec 18	0000Z Saturday	2400Z Saturday
SARTG New Years	Jan 1	0800Z Saturday	1100Z Saturday
ARRL RTTY Roundup	Jan 8-9	1800Z Saturday	2400Z Sunday

difference was about 7 multipliers. For some reason this time the clear channel really attracted the DX. *Multipliers* are what makes two or more radios a real necessity in this contest—you can constantly hunt on the extra radios.

1999 Multioperator High Power

Have a look at last year's results. They are available on the ARRL Web site at **http://www.arrl.org/contests/results/99/rtty.pdf**. (There was a reporting error. W7RY's score was posted as a single-op; he was actually a multi-op entry.) Here are four stations from four areas whose scores were all within a few thousand points of each other.

Station	Score	QSOs	Mults	Location
W0SD	156,897	1,341	117	SD
W7RY	153,900	1,350	114	EWA
KE3ZR	151,496	1,306	116	DEL
AA4NC	132,940	1,156	115	NC

I think that these results point out that what was attempted during the creation of the contest has been achieved. We have stations on the East Coast, the West Coast, the South and in the middle of the country all finishing very closely. The contest was won by W0SD, who collected just enough additional multipliers to make up for the small difference in the QSO total of the W7RY team. It looks like the West Coast needs to get a few more islands up on the air so they can get up to speed with the mults.

Jay's RTTY Tip

For the upcoming contests some 10-meter antennas are going to be the ticket. Several RTTY contests favor stateside contacts, so having a couple of little 10-meter antennas down low will be of benefit. ("Low" on 10 meters can be down to about 15 feet.)

-30- Jay, WS7I

Contest Tips, Tricks & Techniques

Gary Sutcliffe, W9XT
w9xt@9th.com

The Search for the Lost Decibel

W9XT

For a contact to be made, the signal has to overcome the path loss, the noise at the antenna and any noise that's generated within the receiver. There are a number of ways to achieve this. You can increase the transmit power, use higher gain antennas at the transmit and/or receive end, and reduce the noise in the receiver. (The last one is usually not a problem at HF where atmospheric noise is typically much higher than the receiver noise.)

You don't have much control over the other station, but you can improve his ability to hear you by maximizing your transmit signal. You can compensate for the other guy's small transmit signal strength by employing higher gain and/or lower noise receive antennas.

Big gun contesters often talk about working the next tier of stations. The thinking goes that if you improve your station, there is another class of stations that can be worked. Instead of being limited to working stations down to those running 50 W into rain gutters—with large enough improvements to their own station—they strive for the capability to work guys running QRP into bed springs.

Of course—this works from the other side of the equation as well. If you're a small pistol and you graduate from the bed spring to the rain gutter class, you also will be able to work the next level down. Now, for example, you'll not only be able to work the stations with stacked monobanders—but those with large tribanders too. So, it appears that every contester can benefit from a few more dB.

So, how much of an improvement is worthwhile? A single dB is about the minimum change in signal strength that our logarithmically scaled ears can detect under ideal conditions. A single dB improvement may or may not be useful. A 3 dB improvement can be gained by doubling the power. For receive, that's about half an S-unit on most rigs. Every contester would agree that a 3 dB improvement is valuable.

N7NG believes in the "Micro dB Theory." Wayne thinks this concept should be credited to Don Miller from back in the 1960's, but it has since also been adopted by Martti Laine, OH2BH. This theory states that if you increase your signal strength by some small amount, you will statistically improve your results by some corresponding amount.

Transmit or Receive Improvement?

Many of those responding to this topic have very effective contest stations. For them, the best way to secure another dB is likely to be different from those with more modest stations. On the other hand, much of the reason their stations are effective is because they spend a lot of time and effort squeezing every dB out of them. There are lessons to be learned from their experiences.

N0AX points out that signal-to-noise ratios are the most important thing on receive. N4ZR does not think that an extra couple of dB on either transmit or receive would open up another tier of stations to work, but that reducing his receive noise by 2 dB would.

N6TR does not worry too much about transmit dB since most stations are running less power. Another interesting observation that Tree makes is that he thinks a dB is probably more important on SSB than on CW. He attributes that to the increased ability to fight off QRM.

K4OJ likes to work on each part independently. Jim likes the long boom Yagis for their gain, but notes this can be useless when there is so much rain static that you can't hear anything. That's why he prefers to use separate antennas for transmitting and receiving.

High gain antennas are also useless if the gain is focused in the wrong direction. K4JA and K9AY point out that the angle of radiation is very important. Both suggest doing a computer analysis of your station's antenna system and how it interacts with the surrounding terrain. K9AY stresses that you want to be sure your antenna patterns cover all the important wave angles. You may find that you can make improvements by just changing the configuration of your current antenna system. K4JA suggests that adding extra antennas is worthwhile. Even adding an extra dipole at a different height or orientation can be beneficial at times.

N4ZR expands on the importance of hitting all the angles, stating you want to be loud at the start, the middle and the end of the band opening. Pete feels that the expenditures on stacked antennas and switching systems are definitely worthwhile.

K4JA points out that the big stations probably already transmit efficiently, and the challenge is to improve your ability to hear the weak stations—especially on the low bands. Before he dismantled the W9JA contest station in preparation for a move to Virginia, Paul says he felt that increasing the transmit ERP on the low bands wouldn't have helped much for capturing the next tier of stations. He feels that you really have to work on receiving to do that. Increased transmit ERP is useful for breaking the big pileups though.

Again—most of the suggestions here are for receiving improvements. Once you are running near the legal limit and have a reasonably sized beam or above average alternative antenna on the low bands, you will have a more powerful signal than the majority of the other stations. Getting even bigger beams becomes an exercise in diminishing returns. Receive improvements are more likely to give you the biggest bang for the buck. On the other hand, if you live in a quiet area and have trouble getting through even small pileups, increasing your power or otherwise improving your transmit signal may be your best option.

My own experience on 80 meters is a good example of how the transmit/receive equation depends on your situation. When I had only a dipole at 50 feet, I could usually only work the strongest DX stations, and then usually only with great difficulty. Then I shunt fed one of my towers and installed a good ground system utilizing about a mile of radials.

I could then work just about anything I could hear without too much trouble. I could even call CQ into Europe at times and generate acceptable rates. The problem was that I could often hear stations calling me, but I was unable to copy them. I then installed a 350-foot beverage. This is not the optimum length for 80, but it works well enough to shift the balance back to where I have trouble working a lot of what I can copy. It's an issue of changing back and forth between being a rabbit (big ears, small mouth) and an alligator (big mouth, no ears).

K9ZO says it is often difficult to know exactly what is needed. Ralph suggests looking at what the successful stations in the area are using and doing lots of experimentation.

Gain or Front-to-Back Ratio?

Anyone who has played with antenna modeling software will soon find out that it is difficult to design a Yagi that exhibits both maximum gain and maximum F/B at the same time. Which should you choose? That probably depends heavily on where you live and the contests you operate. K4OJ favors gain from his Florida QTH. For DX contests Jim says that when working Europe most of his stateside QRM will be off the side of the beam anyway.

From his location on the West Coast, K6BZ has little trouble off the back when working Japan. A bit better F/B will not help him much. Jerry thinks those on the East Coast would favor F/B since the rest of the country is to their back when they work Europe.

N4ZR does not think raw gain is all that important on the low bands. There, Pete prefers good directivity to cut down on interference.

Most of N6TR's antennas have poor F/B except for the 6-meter Yagi he uses for moon bounce. Tree says a good F/B is essential in that application for keeping noise down.

From here in the Black Hole of the Midwest, I think I would choose gain. Over just about every path we have to go through a wall of contesters on a coast. They are typically one hop closer and therefore have about a 10 dB advantage just due to the shorter path.

High F/B may be a *disadvantage* when operating from the center of the country during domestic contests. You will often have a band open to multiple areas, and will occasionally work someone off the back of the beam.

Additional Sources for the Illusive dB

K9AY says that you may not need to put up bigger antennas to get the next dB. Gary believes the first step is proper maintenance. You should recover the losses due to corroded hardware, lossy coax, loose connectors and bent elements. Bob, AA0CY goes on from there and suggests replacing the finals and optimizing the matching on your antennas to reduce loss.

Keep in mind that dB improvements add up. You may feel that a single dB improvement may not be worth much, but you might get a dB by retuning your antenna, a couple more by replacing your old lossy coax with some inexpensive cable TV hardline, and a few more by changing the height of your antenna to get the right angles. All of a sudden you have a big difference.

K9AY suggests that you use "your gray matter and the gray line." Gary says that you may be running Europe, but there may be a long path opening into some of the rarer Asian zones. You can get a temporary 20 dB or more by just knowing when to turn your beam in a new direction!

Thanks to our contributors on the topic of getting the last dB: AA0CY, K4JA, K4OJ, K6BZ, K9AY, K9ZO, N0AX, N4ZR, N6TR and N7NG. Thanks also to KB8N for suggesting this topic. If you have a topic you would like to see covered here, please let me know.

Topic for January-February 2000 (Deadline November 5, 1999)

The first CTT&T of the new century! Let's take a look back.

Please describe your contesting 25 years or more ago. What kind of equipment did you use? What strategies did you use back then? What did you consider good rates, and QSO or multiplier totals? Were those the good old days, or are they now?

Topic for March-April 2000 (Deadline January 4, 2000)

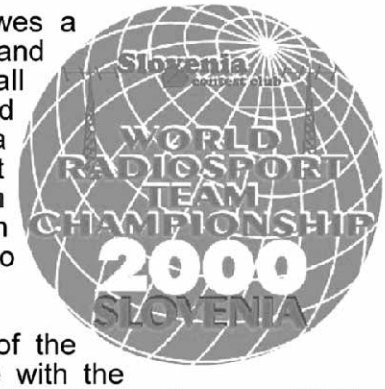
Measuring for Success, How Do You Know You're Getting Better?

Scores are one way of knowing if you're becoming a better contester, but how do you use them to measure self-improvement? For contesters who do not operate in the same contests year after year, or operate from different locations, how do you know if your signal strength and/or your operator skills are improving between major contests?

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

WORLD RADIOSPORT TEAM CHAMPIONSHIP 2000

The amateur radio community owes a debt of gratitude to the energetic and ambitious amateurs in the small European country of Slovenia. Led by Tine Brajnik, S5ØA, the Slovenia Contest Club has agreed to host the **World Radiosport Team Championship 2000**, to be held in the city of Bled, from July 5 to July 11.



The on-the-air operating portion of the event will be held in concurrence with the IARU HF World Championship on July 8. Amateurs worldwide are welcome to come to Slovenia to experience the event or get on the air and participate in the contest.

Having attended the '90 event in Seattle and having been on the committee for the '96 event in San Francisco, I can attest to the goodwill and comradeship generated among the participants from around the world.

It is with great pleasure that I announce my appointment as the United States Treasurer of WRTC 2000.

Having seen the rewards that were reaped by WRTC '90 and '96, I strongly urge everyone to support the Slovenian effort by sending a donation. Donations in excess of $250 may be submitted via a directed contribution to the Northern California DX Foundation, earmarked "WRTC 2000" and sent to Bruce Butler, W6OSP, 4220 Chardonnay Ct., Napa, CA 94558.

Contributions less than $250 may be sent to Carl Cook, AI6V/P49V, 2191 Empire Ave., Brentwood, CA 94513.

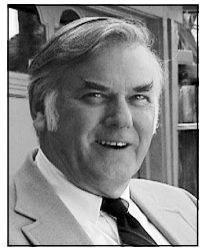
For event information, please see the WRTC 2000 website at **http://wrtc2000.bit.si**

Thanking you in advance. 73, Carl Cook AI6V/P49V

International Contests

Joe Staples, W5ASP
w5asp@aol.com

Call Sign Databases


W5ASP

Most of the current contest logging software provides a means of checking partial call signs. The expressed intent is to allow the use of previously worked call signs to identify a partially copied call that got muddled up somehow by QRM, QSB, QRN or whatever. Originally these calls were those collected during the course of the particular contest and resident in the contest program's active log. For many operators it was the difference between success and total frustration on the low bands, especially during times of high atmospheric activity. It put the casual operator back in the running along with the gifted few having uncanny call sign recognition talents.

It didn't take long before master lists of contest call signs became available for use as an adjunct to the real time log. If you were situated such that you had to open the contest on the low bands, it somewhat "leveled the playing field" for you. It also allowed even the most casual operator the opportunity to draw upon the same accumulation of call sign knowledge that the most active contesters had acquired. It was a "shared resource," and probably encouraged more than a few newcomers to become serious about competitive contesting.

But there was a downside to the use of the Master Call Sign Databases. A number of experienced operators voiced the opinion that using these "professionally prepared" listings was not exactly in the spirit of the game, perhaps bordering upon bending the rules a bit especially in the case of single operator efforts. It was one thing to build up a working database from your own contest logs, they said, but quite another to use someone else's logs as a source of this data. Kinda reminds one of the packet issue—doesn't it?

My point is not to address the controversy as such, but to suggest a way in which any new operator can rather quickly accumulate a viable call sign database from his own efforts, and at the same time start building an invaluable skill—call sign recognition. It won't come as any surprise to some of you that my solution is to use the wealth of international contests as the source for easily expanding your personal call sign database.

Without a doubt many if not most of the calls encountered in the array of active contestants in these contests will also be the ones appearing in the major DX events. Even casual participation will result in picking up the most active foreign operators. Not only will your personal Master Database grow rapidly, but you'll start recognizing not only their calls but certain distinguishing features of their operating practices. It's an invaluable learning experience.

An added benefit of this particular exercise is the satisfaction one derives from seeing a familiar call appear on the screen while in the agony of digging yet another partial out of the chaos. There's something reassuring to know that you've succeeded in picking up an old acquaintance with whom you've shared past contacts—a far better feeling than just recording the next set of unfamiliar alphanumeric characters.

While it's simpler just to download the latest "super list," it is nowhere near as much fun. And isn't that what this is all about... having fun? ■

1999 Helvetia (Swiss) Contest

USA

Call	*QSO*	*Points*	*Mode*	*Category*
K1HT	74	10512	SOP	MIX
K5KG	68	9792	SOP	MIX
W4ADP	68	8976	SOP	MIX
ND5S/8	39	3276	SOP	MIX
K4BAI	25	1350	SOP	CW
W8DA	23	966	SOP	CW
N4MM	13	429	SOP	CW
N8WTH	1	3	SOP	SSB

CANADA

VE3QAA	125	23625	SOP	CW
VE3UOL	41	3690	SOP	CW
VA3UZ	17	714	SOP	CW

1999 JIDX Low Frequency CW Contest

Continental Leaders

Continent	*Call*	*Score*
AF	ZS6AJS	1
AS	DS4CNB	112320
EU	SP7GIQ	42195
NA	N7DR	27470
OC	VK2APK	11792
SA	LU1EWL	1798
JA	JH4UYB	223938

Plaque Winners

Continent	*Class*	*Call*	*Score*
NA	AB	N7DR	27470
NA	7	K6III	345
Zone 4+5	AB	K3ZO	4407

United States

(Zone 3)

Call	*Class*	*QSOs*	*Pts*	*Mult*	*Score*
K6XX	AB	157	205	60	12300
K6III	7	26	23	15	345
K6ILM	3.5L	18	36	12	432

(Zone 4)

N7DR	AB	371	410	67	27470

(Zone 5)

K3ZO	AB	109	113	39	4407
N4MM	7L	6	6	5	30

Upcoming International Contests

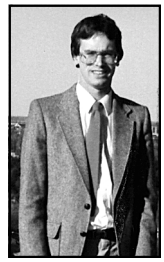
Ukrainian DX Contest	06-Nov-99
Japan Intl DX Contest, Phone	12-Nov-99
OK/OM DX Contest	13-Nov-99
LZ Bulgaria DX Contest, CW	20-Nov-99
RGSB 1.8 MHz Contest, CW	20-Nov-99
IARU 160-Meter Contest	21-Nov-99
EA DX Contest, CW	04-Dec-99
Croatian CW Contest	18-Dec-99
RAC Canada Winter Contest	19-Dec-99
Japan Intl DX Contest, CW/Low Band	07-Jan-99
HA Hungarian DX Contest, CW	15-Jan-99
UBA Belgium Contest, Phone	22-Jan-99
REF French Contest, CW	22-Jan-99

Note: With few exceptions logs and summary sheets must be postmarked within 30 days of the contest.

VHF-UHF Contesting!

Jon K. Jones, N0JK
n0jk@hotmail.com

6-Meter F2 Returns!


N0JK

As predicted in prior columns, 6-meter F2 made an appearance in the 1999 ARRL September VHF QSO Party. Stations in the southern tier of the United States had direct F2 to South America, TEP (transequatorial propagation) and F2 backscatter Saturday and Sunday evening.

W5UWB in EL-17 worked 29 QSOs in 21 grids via F2 modes between 2055Z and 2250Z September 11th.

Direct F2

Time	*Call*	*Grid*
2055Z	HC5K	FI-07
2135Z	LU8YYO	FF-50
2229Z	CX4AAJ	GF-15
2230Z	LU7DZ	GF-05
2233Z	CX9ET	GF-15
2236Z	LU2FFD	FF-97
2236Z	LU9EHF	FF-95
2241Z	LU6DAV	GF-05
2250Z	LU9APM	GF-05

Backscatter

2100Z	NX4E	EM-70
2100Z	W4RCC	EL-96
2101Z	WB2WIH	EL-96
2102Z	W4UDH	EM-52
2104Z	K5LBU	EI-29
2107Z	W4IO	EM-81
2114Z	K2RTH	EL-95
2119Z	KR5X	EM-53
2120Z	KD4HIK	EM-75
2120Z	WA8TTM	EL-98
2124Z	N5XYO	DM-90
2125Z	KC5GSK	EM-73
2126Z	N4DA	EM-74
2127Z	KY5N	EM-12
2127Z	W2BZY	EL-98
2129Z	K4HUM	EM-74
2130Z	XE1/SM0KAK	EK-09
2141Z	WD5K	EM-12
2143Z	K4SC	EL-98
2145Z	W3WYF	EL-87

On September 12th, F2 again occurred for about an hour. Highlights include CX1DDO in GF-15 via direct F2 and K0GU, in DN-70, and W5AL, in DM-95 (both worked via backscatter), to the log.

In all he collected an additional 26 QSOs and 19 grids via F2 modes. John's 6-meter log looks like a 10-meter contest log from a few years ago.

The F2 backscatter conditions extended further north Sunday afternoon, even up into the Midwest.

It is not that surprising that F2 can appear during the September VHF QSO party during high sunspot years. North to south F2 conditions are best around the equinoxes and the September contest takes place close to the fall equinox. If the K index is 3 or greater and the solar flux is over 140, 6-meter F2 can occur.

Since the contest, there have been more 6-meter F2 openings including widespread reception of the HC8GR beacon on 50.035 MHz. On September 19th, the HC8GR beacon created excitement among 6-meter DXers when it was received by stations from New England to Colorado. Even VE9AA heard the beacon for brief periods over several hours by direct F2.

Had this opening occurred during the contest, hundreds of 6-meter F2 contest QSOs would have been possible between the Galapagos and the states. VE6XT donated the beacon transmitter and I provided the antenna, an M2 halo. Thanks to Trey, N5KO, and Guido, HC8GR, for setting up the beacon.

On September 23rd, an F2 opening popped up between the Midwest and Australia! Many 9s and 0s worked VK4s around 0100Z. Is there any way to take more advantage of the improving F layer conditions in VHF contesting?

Springtime VHF Contests?

The current schedule of ARRL VHF contests was not set with the F layer in mind. The June VHF QSO Party is scheduled to take advantage of Es (which tends to peak in mid June) and general tropospheric propagation. The ARRL September VHF QSO Party was timed to take advantage of tropo—and January, well... January boosts activity during the winter months and does create more of a "level playing field" for participants.

The ARRL September VHF QSO Party fortunately takes place near the fall equinox, so F2 propagation is possible at times. F2 has occurred during the January contest under disturbed solar conditions. But what about spring?

It is highly likely even better 6-meter F2 conditions will occur next spring. In 1999, 6-meter F2 was present around the spring equinox for about a week. Stateside stations were working stations in Ecuador, Columbia and Bolivia. Widespread F2 is possible. Unfortunately, there are currently no VHF contests scheduled around the spring equinox.

How about adding the 6-meter band to a current HF contest? There is precedent for this. Back in the 60s, 6 meters was included in the ARRL DX contests and the Sweepstakes. During the 1959 sunspot cycle peak many F2 contacts were made during these contests.

How About Adding 6 Meters to the HF CQ WPX SSB Contest?

This contest occurs near the end of March, which is close to the peak time for north/south F2 conditions. CQ held a VHF version of the WPX, which unfortunately had low activity. Adding 6 meters to the HF CQ WPX could take advantage of the high level of activity already present in this contest.

VHF operators could enter the contest as "single-band 6-meter" entrants. This would boost 6-meter activity and the DX operations that might appear on 6 during the contest could potentially put some new countries on the air.

Multi-Multi stations using 6-meters could achieve even higher scores. The single operator A/B and multi-single categories might find juggling 6 meters along with the other bands challenging, but most handle low activity bands like 160 meters okay now. It may be too late to make a change such as this to the 2000 CQ WPX SSB contest, but good conditions will likely be around in 2001.

If you think this idea has merit, contact the CQ WPX administrators and Bill Lynch, N6CL, who writes the VHF column for *CQ* magazine. I think adding 6 meters to the CQ WPX SSB and CW could be possible, and this really would be a great contest for VHF operators to participate in. ■

2000 North American QSO Party (NAQP) Rules for SSB and CW

Rules

1. Eligibility: Any licensed radio amateur may enter.

2. Object: To work as many North American stations (and/or other stations if you are in North America) as possible during the contest period.

3. Entry Classification: 1) Single Operator and 2) Multi-Operator Two-Transmitter. Multi Operator stations shall keep a separate log for each transmitter. Multi-Operator stations must have at least 10 minutes between band changes. Use of helpers or spotting nets by Single Operator entries is not permitted. Single Operator entrants may only have one transmitted signal at a time. Output power must be limited to 150 watts for eligible entries.

4. Contest periods:

January Contests:

CW: 1800Z January 8 to 0600Z January 9, 1999
SSB: 1800Z January 15 to 0600Z January 16, 1999

August Contests:

CW: 1800Z August 5 to 0600Z August 6, 1999
SSB: 1800Z August 19 to 0600Z August 20, 1999

Multi-Operator stations may operate for the entire 12-hour period. Single Operator stations may operate 10 out of 12 hours. Off times must be at least 30 minutes in length and must be clearly marked in the log.

5. Mode: CW only in CW parties. Phone only in Phone parties.

6. Bands: 160, 80, 40, 20, 15 and 10 meters only. You may work a station once per band. Suggested frequencies are 1815, 3535, 7035, 14035, 21035 and 28035 kHz. (35 kHz up from band edge for Novice/Tech) on CW; and 1865, 3850, 7225, 14250, 21300 and 28500 kHz (28450 kHz for Novice/Tech) on SSB. Try 10 meters at 1900Z and 2000Z, 15 meters at 1930Z and 2030Z and 160 meters at 0430Z and 0530Z.

7. Exchange: Operator name and station location (State, Province or Country). If the name sent is changed during the contest, as sometimes happens with Multi-Operator stations, the changes must be clearly identified in the log.

8. Valid Contact: A valid contact consists of a complete, correctly copied and legibly logged two-way exchange between a North American station and any other station. Proper logging requires including the time and band for each contact. Regardless of the number of licensed call signs issued to a given operator, one *and only* one call sign shall be utilized during the contest by that operator.

9. North American Station: Defined by the rules of the CQWW DX Contests with the addition of KH6.

10. Scoring: Multiply total valid contacts by the sum of the number of multipliers worked on each band. Multipliers are US States (including KH6 and KL7), Canadian Provinces/Territories (British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, PEI, Labrador, Yukon, and NWT) and other North American Countries (Note: do not also count USA, Canada, KH6, or KL7 as Countries. For Canada, count Nunavut (NU) as NWT and Newfoundland (NF) as Labrador). Non-North American Countries do not count as multipliers, but may be worked for QSO credit.

11. Standard Reporting: Send North American QSO Party CW logs to Bob Selbrede, K6ZZ, 6200 Natoma Ave, Mojave, CA. 93501. Send SSB logs to Bruce Horn, WA7BNM, 4225 Farmdale Ave, Studio City, CA. 91604. Entries must be postmarked not later than 30 days after the contest to be eligible for awards. A proper entry consists of: (1) a summary sheet showing the number of valid contacts and multipliers by band, total contacts and multipliers, total score, team name (if any), power output, name, call sign, and address of the operator, station call sign and station location; (2) a complete legible log of all contacts (including dupes marked as such) with indication of all multipliers claimed; (3) a separate Dupe Sheet for each band; and (4) a list of all claimed multipliers worked on each band. Logs may be submitted on 3.5" disk in the form of files generated by a computer logging program as long as they are MS-DOS compatible ASCII files consisting of all information in (1)-(4) above. All entries should include a written, signed statement of "Fair and Ethical Operation". All logs containing over 200 QSOs, which were generated with a computer logging program, must also include a disk copy of the ASCII Text log as defined above. Complete rules, sample Log Sheets and a Summary Sheet may be obtained with an SASE to K6ZZ or WA7BNM.

12. Electronic Reporting: Logs submitted via e-mail are also acceptable. E-mail log submissions MUST BE in ASCII Text Format and include your summary sheet and complete Log. Name your files with your call sign (ie, yourcall.SUM and yourcall.LOG). Forms are available on-line. Please do not send any binary format logs (ie, yourcall.BIN or yourcall.QDF). NAQP CW logs should be sent to **k6zz@ccis.com** and NAQP SSB logs to **bhorn@hornucopia.com**. E-mail addresses can and do change, so if these addresses fail to work, contact the *NCJ* for assistance.

13. Team Competition: You may wish to form a team with fellow NAQP participants. If so, your team shall consist of 2 to 5 Single Operator stations as a single entry unit. Clubs or other groups having more than 5 members may submit multiple team entries. PRE-REGISTRATION REQUIREMENT: To qualify as a team entry, the team organizer should ensure that the name, call sign of each operator, and call sign of the station operated should the operator be a guest at a station other than his own, (eg, K6ZZ op by K6RO) must be registered with K6ZZ for CW and WA7BNM for SSB. The team registration information must be in written or telegraphic form and must be received before the start of the contest. There are neither distance nor meeting requirements for a team entry. The only requirement is pre-registration of the team.

14. Penalties and Disqualifications: For each unmarked duplicate QSO, you lose that contact plus an additional three contacts; for each QSO for which you are not in the other stations log, you lose that QSO plus an additional one contact; and for each QSO for which the log data is incorrectly copied in any respect, you lose that contact. Entries with score reductions greater than 5% will be disqualified. Any entry may be disqualified for illegibility, illegal or non-ethical operation. Such qualification is at the discretion of the *NCJ* Contest Review Committee.

15. Awards: A total of five plaques will be awarded for the high score in each of the following categories:

Single Operator CW
Single Operator Phone
Multi Operator CW
Multi Operator Phone
Single Operator Combined High Score

Certificates of merit will be awarded to the highest scoring entrant with at least 200 QSOs from each State, Province, and North American Country. ■

Results, July 1999 NAQP RTTY Contest

Ron Stailey, K5DJ
k5dj@contesting.com

This year was the fourth running of the North American RTTY QSO Party. New records were set in all categories. All went well with the exception of the team competition. We only had ten teams compete again this year. I'm not sure why we can't get a greater amount of participation in this category. One team didn't send in a single log from any team members. I would be interested in any suggestions on what can be done to increase interest in this category for next year's contest. Please e-mail me directly: **k5dj@contesting.com**.

The RTTY NAQP contest is still growing. We had some 162 logs submitted this year with 35 from DX stations. Adding plaques for DX competition has helped to increase activity in this year's contest.

Conditions were not as good as we had hoped. There was still very little action on 10 meters.

Single Operator Category

Entrants from the W5, W3, W7, W4, W6, W0 and P4 call areas all made it into the Top Ten. In the end it all came down to AA5AU, K3MM and WT4I turning in the high scores. The race for first and second place was very close.

After three previous years of second places, Don, AA5AU, became this year's king of the hill, setting a new record with 521 QSOs and 176 multipliers for a final score of 91,696.

Tyler, K3MM, finished second with 525 QSOs and 172 multipliers, scoring 90,300 points—just 1,396 behind the leader. Bruce, WT4I, made a move towards the top of the box with a third place finish—up from fourth in the last two runnings. He gathered 458 QSOs, tied AA5AU's multiplier total, and turned in a score of 80,608—capturing third.

Again this year 20, 40 and 15 meters were the work horse bands. On 10 meters, WT4I had the highest number of QSOs with 62, P43P was second with 55, followed by K4QD with 31. It will be nice when 10 meters really gets going again, propagation was supposed to be good in July on 10 meters but the scores sure didn't bear that out!

On15 meters, AA5AU managed the most QSOs with 143, both K3MM and K7WM had 117, and WT4I worked 116. On 20 meters, the QSO totals were spread out somewhat. K3MM had 189 while AA5AU collected 165—AF4Z had 154. Obviously good rate just wasn't to be had this year.

On 40 meters, K3MM narrowly grabbed the lead with129 QSOs, AA5AU had 128, while WT4I had 104. On 80 meters, K3MM again narrowly bested AA5AU's 62 QSO total. W1ZT collected 49.

Multi/Two Category

The Multi/Two category really hasn't seemed to take off yet. We had only a couple more stations participating than last year. We still have high hopes that this category will grow to a much larger number of participants.

KH7R takes the Multi/Two Plaque with 512 QSOs and LT1F easily picked up the DX Multi/Two Plaque with 407 QSOs.

Team Competition

Team competition was down by one team this year. Maybe it will help if we try to get teams started a little earlier next year. We shall see. We could discontinue team competition for the RTTY mode if there isn't any interest in it.

The Florida boys changed their name to "Tstormers" since thunderstorms have blessed them for the last three years on the NAQP RTTY contest weekend. The Tstormers took top honors with a final score of 216,912.

Ye Old Smellers finished second with 195,937. Last year's champs, the Crown Royals, finished third with a score of 166,872. The Over 50 Bunch had fun this year and racked up a score of 161,509.

Plaque Winners

This year's plaque winners were AA5AU, winning the Single Operator Plaque; P43P, the DX Single Operator Plaque; KH7R the Multi/Two Plaque and LT1F wins the DX Multi/Two Plaque. Best Name Plaque went to Ed, K4SB, for "Anonymouse." Congratulations to all the plaque winners!

Soapbox

I suffered high SWR on 80 meters. Other than that I had a blast.—*WA8RPK*
Managed to better my score from last year.

Top Ten

Call	*Score*	*Qs*	*Mults*	*10*	*15*	*20*	*40*	*80*	*Team*
AA5AU	91,696	521	176	23/10	143/44	165/46	128/44	62/32	
K3MM	90,300	525	172	27/12	117/36	189/46	129/43	63/35	(YOS)
WT4I	80,608	458	176	62/27	116/38	141/45	103/42	36/24	(TCR)
P43T	61,777	388	163	55/30	88/42	147/44	74/34	15/13	
K7WM	55,664	392	142	22/11	117/39	146/47	99/39	8/6	(TRC)
W1ZT	53,793	387	130	6/2	94/27	153/44	85/38	49/28	(YCCC)
AF4Z	49,912	367	136	12/6	98/33	158/47	76/32	23/18	(Tstrmrs)
K4QD	49,504	366	136	31/15	102/32	149/42	55/31	27/16	(Tstrmrs)
KI6DY/0	48,635	355	137	6/6	85/27	124/40	110/41	30/23	(YOS)

Team Scores

Tstormers		*Ye Old Smellers*		*The Crown Royals*		*Over 50 Bunch*	
AF4Z	49,912	K3MM	90,300	WT4I	80,608	K5HP	41,536
K4QD	49,504	KI6DY/0	48,635	K7WM	55,664	N5ZM	41,072
KG4AU	41,148	VE6RAJ	30,302	N1RCT	30,600	K4GMH	37,185
W4WX	39,235	W6/G0AZT	26,296	WS7I	18,810	WA8RPK	23,312
KC4HW	36,225	NH6XM	504	K5DJ	1,064	AA7CP	18,404
	216,060		195,937		166,872		161,509

5. The Left-Coasters: N6TQS, WW7OR, N7GC, W7WW, K6NDV 117,804
6. The RF Freqs: AA9RR, AE9D, KB5BOB, VE7IRA, W0DC 107,292
7. Yankee Clipper C C: AA1SU, AD1C, KT1O, W1ZT 100,233
8. ARTS: N4GN, KD4HXT, W4MWH, K4WW 90,875
9. Digital Delinquents: W8PT, WA0SXV/5, W3SE 62,551

US State Winners

MA	W1ZT	NC	WB2EUF/4	AZ	K7WM	KS	KI6DY/0
ME	N1RCT	SC	AF4OX	ID	K7ZO	MN	W0DC
VT	AA1SU	TN	W4EYJ	OR	WW7OR	MO	KI0MB
NJ	NO2T	VA	K4GMH	WA	N7GC	NE	KI7RW/0
NY	W1TY	WV	W8PT	MI	KD8FS	HI	NH6XM
MD	K3MM	AR	N5ZM	OH	WA8RPK		
PA	KC3LV	LA	AA5AU	IL	AE9D	**Canadian Province Winners**	
AL	W4/KL7Q	NM	WA0SXV/5	IN	WA9ALS		
FL	WT4I	OK	K5HP	WI	AA9RR	SK	VE5CPU
GA	K4SB	TX	WA4TQS	CO	N0IBT	AB	VE6RAJ
KY	N4GN	CA	K6XT	IA	N0AC	BC	VA7CC

I had a ball.—*N7GU* *WriteLog* was fantastic! Nothing went wrong.—*K6XT* Great contest!—*AA5AU* Had a great time this year.—*K7WM* I only had time for 4 hours but had a good time.—*K3NC* Many wouldn't work DX stations, but this was my best score yet in NAQP RTTY 'test.—*OH2LU* I had a blast.—*AA9RR* I worked the NAQP for the first time and enjoyed it very much.—*S58T* Propagation was okay during the contest. Several strong signals from W6 and W7 on 15 and 20 meters all the time.—*DL7RCK* Thanks for the great contest.—*WA0SXV/5* Thanks for the effort you and the others have put in to make this a great contest.—*K4GMH* Great contest. I more than doubled my previous scores and I have participated since the inception of this contest.—*KI6DY/0* I'll sum up the contest in 3 words, FUN, FUN, FUN.—*P34P* Many thanks to you and the other sponsors of this wonderful and fun contest.—*WB2UEF/4* Had a great time, very little action on 10 meters.—*VA7CC* Thanks again for taking on the task of being the log dude for this contest, as usual... HAD A BLAST.—*W3SE* Had a lot of fun in the contest, was able to work some new States and Canadian provinces.—*OE1KTS* This is a real fun event.—*KD4HXT* Did not get to spend much time in NAQP but had fun anyway.—*N4AN* Had a great time, even though I wasn't able to operate as many hours as I would have liked.—*W6ZL* 15 and 20 produced a surprising number of EU stations.—*WW7OR* Only able to put a little more than 3 hours into this party.—*K7ZO* I was having a ball until my TNC died.—*NH6XM* It was nice to get 175 QSOs in the NAQP RTTY 'test.—*PY2NY* ■

Single Operator
North America and DX

Call	*QSOs*	*Points*	*Mults*	*Score*	*State*	*Team*
*AA5AU	521	521	176	91,696	LA	
K3MM	535	525	172	90,300	MD	(YOS)
WT4I	458	458	176	80,608	FL	(TCR)
*P43P	388	379	163	61,777		
K7WM	392	392	142	55,664	AZ	(TCR)
W1ZT	387	387	139	53,793	MA	(YCCC)
AF4Z	367	367	136	49,912	FL	(TStormers)
K4QD	366	364	136	49,504	FL	(TStormers)
K6XT	357	357	138	49,266	CA	
KI6DY/0	355	355	137	48,635	KS	(YOS)
K6NDV	368	362	134	48,508	CA	(TLC)
N4GN	319	317	132	41,844	KY	(ARTS)
K5HP	352	352	118	41,536	OK	(O50B)
KG4AU	312	312	132	41,184		(TStormers)
N5ZM	303	302	136	41,072	AR	(O50B)
W4WX	296	295	133	39,235	FL	(TStormers)
N0AC	330	330	118	38,940	IA	(YCCC)
K4GMH	335	335	111	37,185	VA	(O50B)
VA7CC	323	315	117	36,855	BC	
KC4HW	315	315	115	36,225	FL	(TStormers)
W0ETC	287	287	126	36,162	IA	
S58T	306	306	113	34,578		
WW7OR	288	285	110	31,350	OR	(TLC)
AF4OX	273	272	113	30,735	SC	
N1RCT	300	300	102	30,600	ME	(TCR)
VE6RAJ	278	278	109	30,302	AB	(YOS)
W4/KL7Q	272	270	112	30,240	AL	
W1TY	274	272	111	30,192	NY	
AE9D	287	281	104	29,224	IL	(TRFF)
KD8FS	271	271	102	27,642	MI	
K4WW	268	268	101	27,068	KY	(ARTS)
KB5BOB	283	283	95	26,885	OK	(TRFF)
AA9RR	234	233	113	26,329	WI	(TRFF)
EO6F	320	317	83	26,311		(Op UX0FF)
W6/G0AZT	237	236	111	26,196	CA	(YOS)
W3SE	237	237	108	25,596	CA	(DD)
PY2MNL	229	229	102	23,358		
WA8RPK	248	248	94	23,312	OH	(O50B)
N4UG	211	211	103	21,733	VA	
NO2T	203	203	102	20,706	NJ	
VE5CPU	226	222	92	20,424	SK	
WB2UEF/4	231	231	88	20,328	NC	
N7GC	197	196	101	19,796	WA	(TLC)
WA0SXV/5	202	202	96	19,392	NM	(DD)
N7UJJ	201	199	96	19,104	AZ	
WS7I	209	209	90	18,810	WA	(TCR)
W4EYJ	220	220	85	18,700	TN	
AA7CP	215	214	86	18,404	OR	(O50B)
W8PT	194	193	91	17,563	WV	(DD)
W6ISO	201	199	87	17,313	CA	
K6HGF	193	193	86	16,598	CA	
AD1C	174	174	96	16,704	MA	(YCCC)
AA1SU	189	187	84	15,708	VT	(YCCC)
LU8HWD	176	176	87	15,312		
ON4ANT	213	212	69	14,628		
K3GP	185	185	77	14,245	OH	
KT1O	167	167	84	14,028	ME	(YCCC)
W0DC	152	152	90	13,680	MN	(TRFF)
W4AUI	155	155	85	13,175	TN	
WB4EQS	137	137	85	11,645	FL	
KD4HXT	156	156	74	11,544	KY	(ARTS)
WA4TQS	150	149	77	11,473	TX	
K6MI	150	150	76	11,400	CA	
W7WW	154	152	74	11,248	WA	
KI7RW/0	151	149	75	11,175	NE	
VE7IRA	157	157	71	11,174	BC	(TRFF)
K3NC	145	145	74	10,730	VA	
NA4M	145	145	72	10,440	TX	
W4MWH	151	151	69	10,419	KY	(ARTS)
LU6AM	151	151	69	10,419		
W6ZL	134	134	77	10,318	CA	
AA2GS	134	133	77	10,241	KY	
SP4CHY	160	160	61	9,760		
K4SB	150	150	65	9,750	GA	
AC6JT	135	132	72	9,504	CA	
K1JE	140	140	67	9,380	MA	
KM5UB	141	141	66	9,306	TX	
KC3LV	134	133	68	9,044	PA	
KR4U	130	130	66	8,580	FL	
NT4D	115	115	74	8,510	NC	
KD4VWN	127	127	67	8,509	TN	
KE4MMI	154	154	55	8,470	FL	
UN5PR	128	128	64	8,192		
I1COB	159	157	52	8,164		
CF6CKG	138	138	60	8,160	AB	
GW4KHQ	113	113	71	8,023		
LR0H	136	135	59	7,965		(Op LU9HS)
KI0MB	128	128	60	7,680	MO	(SOMC)
W0HW	110	110	69	7,590	MN	
K7ZO	112	111	65	7,215	ID	
K0BX	150	150	47	7,050	MO	
OH2LU	124	121	58	7,018		
N6TQS	120	119	58	6,902	CA	(TLC)
WA6BOB	110	110	62	6,820	CA	
WA9ALS	123	123	54	6,642	IN	
I0KHP	99	99	61	6,039		
VE6RRD	109	108	54	5,832	AB	
W9ISC	100	100	56	5,600	WI	
K3PP	115	115	48	5,520	PA	
CX7BF	129	128	41	5,248		
OH2BP	126	125	41	5,125		
4X3DIG	96	96	52	4,996		
N4PQV	90	90	53	4,770	TN	
OK2BXW	77	77	42	3,234		
DL4RCK	77	77	42	3,234		
8S4BX	93	92	34	3,128		
AJ3M	84	84	36	3,024	MD	
N0IBT	72	72	42	3,024	CO	
JH6ETS	77	77	36	2,772		
CE8FSG	64	59	38	2,242		
UT0IO	56	56	37	2,072		
KI0MI	58	55	35	1,925	MO	
K5CWR	54	54	35	1,890	TX	
EW1EA	49	49	32	1,568		
OE1KTS	46	46	31	1,426		
K0COP	50	50	36	1,300	CO	
4X6UO	45	45	27	1,215		
K5DJ	40	38	28	1,064	TX	(TRC)
AA4PR	37	37	28	1,036	GA	
I4HRH	39	39	26	1,014		
W6JOX	33	33	24	891	CA	
KE6QR	40	40	22	880	CA	
N4AN	30	30	21	630	AL	
NH6XM	28	28	18	504	HI	(YOS)
WA6CYP	21	21	13	273	CA	
N1AFC	15	15	12	180	ME	
YL6FW	16	16	11	176		
OH3KOK	14	14	10	140		
SP2HPD	14	14	10	140		
YL2KF	11	11	7	77		
N2ALE	3	3	3	9	CA	

Single Operator

North America

Call	QSOs	Points	Mults	Score	State	Team
W1ZT	387	387	139	53,793	MA	(YCCC)
N1RCT	300	300	102	30,600	ME	(TCR)
W1TY	274	272	111	30,192	NY	
AD1C	174	174	96	16,704	MA	(YCCC)
AA1SU	189	187	84	15,708	VT	(TYC)
KT1O	167	167	84	14,028	ME	(YCCC)
K1JE	140	140	67	9,380	MA	
N1AFC	15	15	12	180	ME	
NO2T	203	203	102	20,706	NJ	
K3MM	535	525	172	90,300	MD	(YOS)
K3NC	145	145	74	10,730	VA	
KC3LV	134	133	68	9,044	PA	
K3PP	115	115	48	5,520	PA	
AJ3M	84	84	36	3,024	MD	
WT4I	458	458	176	80,608	FL	(TCR)
AF4Z	367	367	136	49,912	FL	(TStormers)
K4QD	366	364	136	49,504	FL	(TStormers)
N4GN	319	317	132	41,844	KY	(ARTS)
W4WX	296	295	133	39,235	FL	(TStormers)
K4GMH	335	335	111	37,185	VA	(O50B)
KC4HW	315	315	115	36,225	FL	(TStormers)
AF4OX	273	272	113	30,735	SC	
W4/KL7Q	272	270	112	30,240	AL	
K4WW	268	268	101	27,068	KY	(ARTS)
N4UG	211	211	103	21,733	VA	
WB2UEF/4	231	231	88	20,328	NC	
W4EYJ	220	220	85	18,700	TN	
W8PT	194	193	91	17,563	WV	(DD)
W4AUI	155	155	85	13,175	TN	
WB4EQS	137	137	85	11,645	FL	
KD4HXT	156	156	74	11,544	KY	(ARTS)
W4MWH	151	151	69	10,419	KY	(ARTS)
AA2GS	134	133	77	10,241	KY	
K4SB	150	150	65	9,750	GA	
KR4U	130	130	66	8,580	FL	
NT4D	115	115	74	8,510	NC	
KD4VWN	127	127	67	8,509	TN	
KE4MMI	154	154	55	8,470	FL	
N4PQV	90	90	53	4,770	TN	
AA4PR	37	37	28	1,036	GA	
N4AN	30	30	21	630	AL	
AA5AU	521	521	176	91,696	LA	
K5HP	352	352	118	41,536	OK	(O50B)
N5ZM	303	302	136	41,072	AR	(O50B)
KB5BOB	283	283	95	26,885	OK	(TRFF)
N7GC	197	196	101	19,796	WA	(TLC)
WA0SXV/5	202	202	96	19,392	NM	(DD)
WA4TQS	150	149	77	11,473	TX	
NA4M	145	145	72	10,440	TX	
KM5UB	141	141	66	9,306	TX	
K5CWR	54	54	35	1,890	TX	
K6XT	357	357	138	49,266	CA	
K6NDV	368	362	134	48,508	CA	(TLC)
W6/G0AZT	237	236	111	26,196	CA	(YOS)
W3SE	237	237	108	25,596	CA	(DD)
W6ISO	201	199	87	17,313	CA	
K6HGF	193	193	86	16,598	CA	
K6MI	150	150	76	11,400	CA	
W6ZL	134	134	77	10,318	CA	
AC6JT	135	132	72	9,504	CA	
N6TQS	120	119	58	6,902	CA	(TLC)
WA6BOB	110	110	62	6,820	CA	
W6JOX	33	33	24	891	CA	
KE6QR	40	40	22	880	CA	
WA6CYP	21	21	13	273	CA	
N2ALE	3	3	3	9	CA	
K7WM	392	392	142	55,664	AZ	(TCR)
WW7OR	288	285	110	31,350	OR	(TLC)
N7UJJ	201	199	96	19,104	AZ	
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AA7CP	215	214	86	18,404	OR	(O50B)
W7WW	154	152	74	11,248	WA	(TLC)
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KD8FS	271	271	102	27,642	MI	
WA8RPK	248	248	94	23,312	OH	
AE9D	287	281	104	29,224	IL	(TRFF)
AA9RR	234	233	113	26,329	WI	(TRFF)
K3GP	185	185	77	14,245	OH	
WA9ALS	123	123	54	6,642	IN	
W9ISC	100	100	56	5,600	WI	
KI6DY/0	355	355	137	48,635	KS	(YOS)
N0AC	330	330	118	38,940	IA	(YCCC)
W0ETC	287	287	126	36,162	IA	
W0DC	152	152	90	13,680	MN	(TRFF)
KI7RW/0	151	149	75	11,175	NE	
KI0MB	128	128	60	7,680	MO	(SOMC)
W0HW	110	110	69	7,590	MN	
K0BX	150	150	47	7,050	MO	
N0IBT	72	72	42	3,024	CO	
KI0MI	58	55	35	1,925	MO	
K0COP	50	50	26	1,300	CO	
VE5CPU	226	222	92	20,424	SK	
VE6RAJ	278	278	109	30,302	AB	(YOS)
CF6CKG	138	138	60	8,160	AB	
VE6RRD	109	108	54	5,832	AB	
VA7CC	323	315	117	36,855	BC	
VE7IRA	157	157	71	11,174	BC	(TRFF)

Multi/Two Category

Call	QSOs	Points	Mults	Score	State
*KH7R	512	508	156	79,248	HI
W4WS	330	316	116	39,816	NC
WN1E	202	200	92	18,400	VT

DX Single Operator Category

Call	QSOs	Points	Mults	Score	Team
*P43P	388	379	163	61,777	
KG4AU	312	312	132	41,184	(TStormers)
S58T	306	306	113	34,578	
EO6F	320	317	83	26,311	(Op UX0FF)
PY2MNL	229	229	102	23,358	
LU8HWD	176	176	87	15,312	
ON4ANT	213	212	69	14,628	
LU6AM	151	151	69	10,419	
SP4CHY	160	160	61	9,760	
UN5PR	128	128	64	8,192	
I1COB	159	157	52	8,164	
GW4KHQ	113	113	71	8,023	
LR0H	136	135	59	7,965	(Op LU9HS)
OH2LU	124	121	58	7,018	
I0KHP	99	99	61	6,039	
CX7BF	129	128	41	5,248	
4X3DIG	96	96	52	4,996	
OH2BP	126	125	41	5,125	
OK2BXW	77	77	42	3,234	
DL4RCK	77	77	42	3,234	
8S4BX	93	92	34	3,128	
JH6ETS	77	77	36	2,772	
CE8FSG	64	59	38	2,242	
UT2IO	56	56	37	2,072	
EW1EA	49	49	32	1,568	
OE1KTS	46	46	31	1,426	
4X6UO	45	45	27	1,215	
I4HRH	39	39	26	1,014	
YL3FW	16	16	11	176	
OH3KOK	14	14	10	140	
SP2HPD	14	14	10	140	
YL2KF	11	11	7	77	

DX Multi/Two Category

Call	QSOs	Points	Mults	Score
*LT1F	407	407	150	61,050

* plaque winner

Check Logs
W7DPW, N5VPM, AA5RF, N5LUQ

Multi/Two Operators
LT1F: LU1FKR, LU5FHM, LU3FZW
WN1E: WN1E, N1MGO
W4WS: N4VHK, KD4RGB
KH7R: KH7R, KH7U, KH6ND, ND3A, K9QQ

■

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13. Publication Title: National Contest Journal	14. Issue Date for Circulation Data Below: May 99 - Jul 99	Sep 99
15. Extent and Nature of Circulation	Average No. Copies Each Issue During Preceding 12 Months	No. Copies of Single Issue Published Nearest to Filing Date
a. Total Number of Copies *(Net press run)*	2,712	2,670
b. Paid and/or Requested Circulation (1) Paid/Requested Outside-County Mail Subscriptions Stated on Form 3541. *(Include advertiser's proof and exchange copies)*	1,689	1,686
(2) Paid In-County Subscriptions Stated on Form 3541 *(Include advertiser's proof and exchange copies)*	0	0
(3) Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Non-USPS Paid Distribution	70	68
(4) Other Classes Mailed Through the USPS	462	465
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d. Free Distribution by Mail *(Samples, complimentary, and other free)* (1) Outside-County as Stated on Form 3541	73	73
(2) In-County as Stated on Form 3541	0	0
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e. Free Distribution Outside the Mail *(Carriers or other means)*	92	52
f. Total Free Distribution *(Sum of 15d. and 15e.)* ▶	204	133
g. Total Distribution *(Sum of 15c. and 15f)* ▶	2,425	2,352
h. Copies not Distributed	287	318
i. Total *(Sum of 15g. and h.)* ▶	2,712	2,670
j. Percent Paid and/or Requested Circulation *(15c. divided by 15g. times 100)*	91.58%	94.34%

16. Publication of Statement of Ownership
☒ Publication required. Will be printed in the Nov-Dec 99 issue of this publication. ☐ Publication not required.

17. Signature and Title of Editor, Publisher, Business Manager, or Owner: Publisher — Date: September 29, 1999

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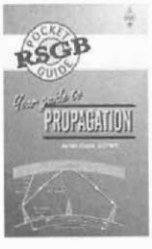

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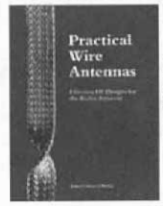

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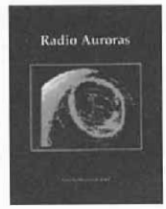

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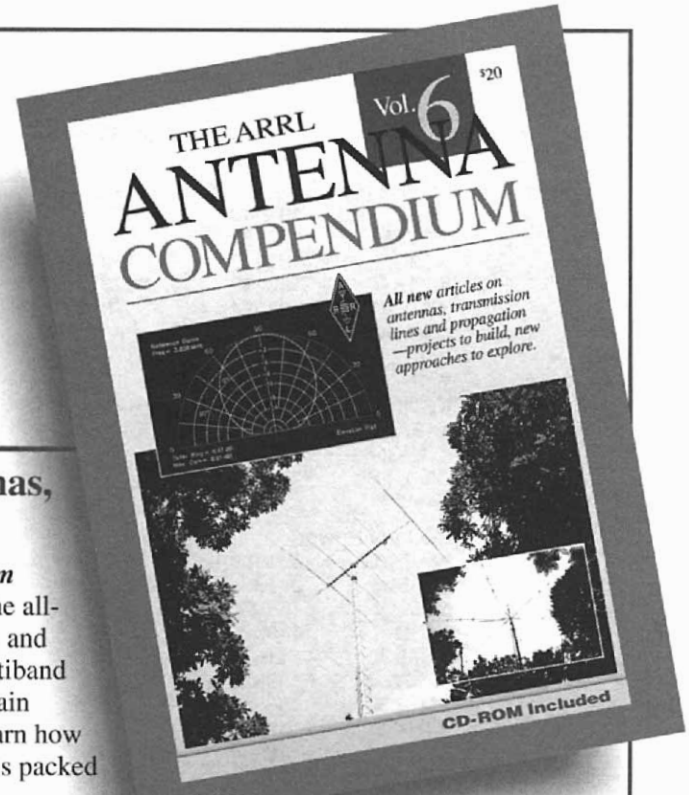

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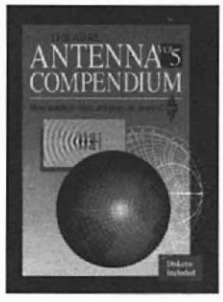

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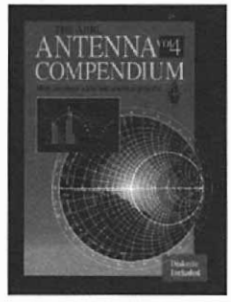

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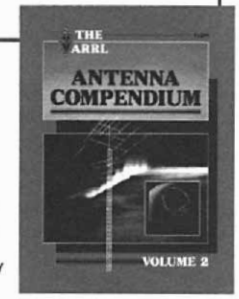

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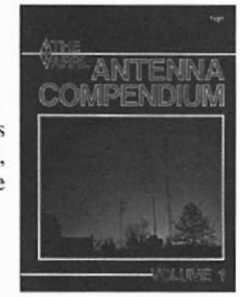

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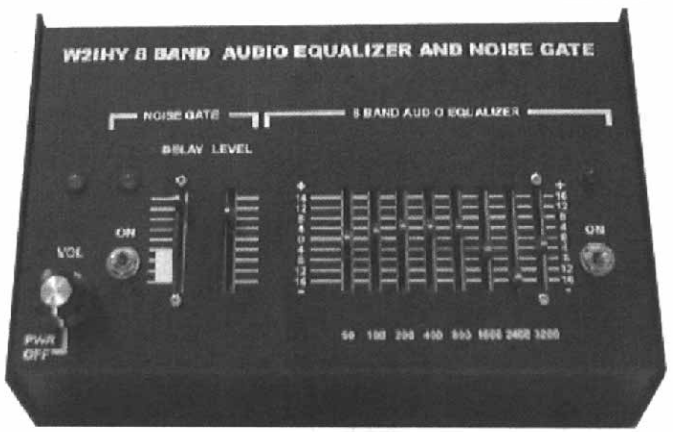

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⇒ $5.00 US, $6.00 Canada, $10.00 DX _____

Total _____

Disk Size: **CT 9** is available only in 3.5" HD format (1.44MB)
CT 8 is available only in 3.5" HD

MasterCard/Visa accepted; checks must be in US$ and drawn on a US bank, payable to *K1EA Software*

K1EA Software
distributed by XX Towers, Inc.
814 Hurricane Hill Road
Mason, NH 03048
(603) 878-4600 order line, (603) 878-4200 support line
(603) 878-1102 fax, updates available for registered users
http://www.contesting.com/ctvault

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are you ready?

1999 Contest Equipment Check Off List

Transceivers:

- ☑ IC-706MKIIG *Glad I picked up this new little hummer. Super backup radio; also use as 2nd rig for multiplier hunting – or upcoming rover class contesting on VHF/UHF.*
- ☑ IC-746 *What bang for the buck! Real HF performance, PLUS 6 + 2 meters. Twin PBT, IF-DSP, dual IF filtering, auto antenna tuner...that low ICOM Rx noise floor, too.*
- ☑ IC-756 *Real time band scope AND TRUE dual watch! IF-DSP, twin PBT. That receive-only ant jack will come in handy for lowband contesting ...wow!*
- ☑ IC-775DSP *Exceptionally clean TX audio; quiet Rx noise floor. IF-DSP, all the bells & whistles. 200 watts out, runs cool even after 48 hours in barefoot class contests.*
- ☑ IC-781 *Still a ham's dream rig The ultimate!*

Each 100% duty cycle Tx!

Linear Amps:

- ☑ IC-PW1 *Small footprint, remotable head with full metering, auto band switching with other ICOMs (great for quick bandhopping), a full kW on 6 meters ...wow!*

Accessories:

- ☑ SM-20 Desktop mic *easy front panel connect*
- ☑ SP-20 Deluxe speaker *('775, '781)*
- ☑ SP-21 Standard speaker *('706G, '746, '756)*
- ☑ SP-10 Mobile speaker *excellent with '706G*
- ☑ CT-17 Computer interface *get PC ready!*
- ☑ PS-85 DC power supply *for '706G, '746, '756*
- ☑ AT-180 Auto antenna tuner *for coax fed anten*
- ☑ AH-4 Auto antenna tuner *longwire operat*


IC-706MKIIG


IC-746


IC-756


IC-775DSP


IC-781


IC-PW1

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