NCJ
NATIONAL CONTEST JOURNAL
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March/April 1999
Volume 27 Number 2

- CQ WW 1998—and Making Friends with Those Elusive JTs
- Using Less-Common Propagation Modes to Work Multipliers—Part 1
- *NCJ* Reviews: *WriteLog* for *Windows* Logging Software
- *NCJ Profiles*: N5OT
- SCVs: Part 4
- The First Honor Sprint

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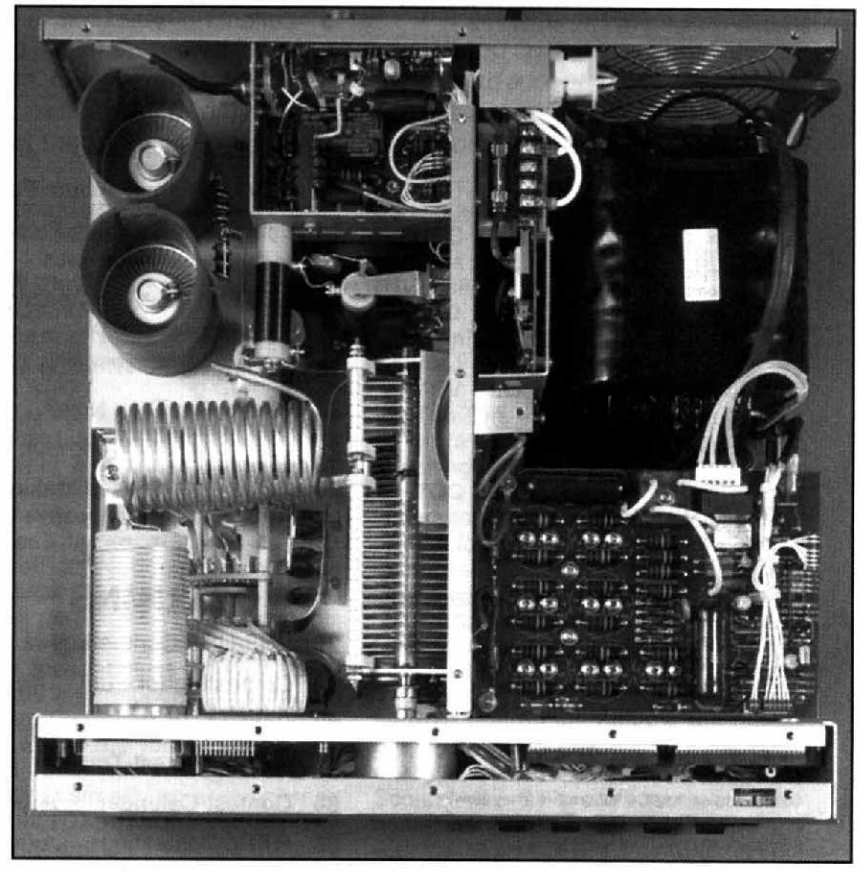

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Editorial

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NCJ 1999 Contester "Hot Picks"

In place of my usual editorial, for this edition of NCJ *I decided to round up some active contesters and have them put together a list of the rookies, pros and old timers—and the stations, clubs and specialists they feel will be making their mark in the 1999 contest season. Our volunteer handicapper corps had a lot of fun making these awesome picks and predictions. Now the real excitement begins as we watch the action unfold over the next several months. My bet is our handicappers hit the mark dead on. Read on and form your own opinions.*

Young Ops Coming on Strong

PY2XE Formerly PU2MHB—16 years old, worked WPX CW 1998 from ZX5J breaking SA record. His father is angry with his school evaluations though, and he will probably not get to try to break the World Record (multi-single) next WPX CW.

AD6DO This guy is turning heads and is knocking on the door of being one of the next super ops. Dan is an excellent op on both phone and CW doing great things from his Uncle's station (N6ND). Many contesters in Southern California are thankful that Dan has graduated from high school and is a freshman in college, and therefore has less time to contest.

AD7U Caleb's scores are rapidly headed up and he is very sharp and enthusiastic.

N5NU A Young Gunner. This young guy is tearing up the contest circuit and giving all the ol' timers a run for their money. This kid has lots of spunk and certainly reminds me how much fun it was to contest as a teenager! I consistently hear him on and he always has a great score. Anticipate continued great scores from Jason as he enters his late teen years.

K1ZR A young new guy with one full year of DX contest single op efforts under his belt. Look for him to do even better this year.

K9YO If Cedrick, ex-N9XYA, ever operates more than 2 hours per contest, he might do well!

KB3AFT A great young op from Penn State with WA3FET as his mentor—will there be another KP4 trip for ARRL DX PH?

KB0VVT Rebeccah—10 years old and having fun—and we are having a blast working her in the contests, too!

KD6KKP Jenny Antasek in Oakdale, CA. I'm not sure how old Jenny is—probably around 14. She has contesting in her blood—that's for sure. No nonsense, aggressive and highly competent operator. Unfortunately, she is in my section and I have to compete directly against her!

KD7DQO Lowell, a brand new Novice with N0AX blood pulsing through his veins cannot help but emerge as a finely trained and accomplished contester *IF* the proud father, Ward, will turn the station over to him from time to time. His brother Webster and a friend across the street aren't far behind.

KK7GW David in Kirkland, WA is another up-and-coming young ham. At 15, he has already obtained both knowledge and technique well beyond his years. At W7RM during CQWW CW this year, he was a significant contributor on 10 M and 160 M, producing some stunning rate and doing a fine job of ferreting out mults. He has a good sense for both operating and propagation. From his modest home station, he has participated and done well in many contests over the past year or two. In working as part of the W7RM team, his ideas and suggestions continue to show a level of thoughtfulness and maturity that indicate a formidable competitor in the making. David will be a force to be reckoned with in the years to come.

WL7KY Chris in Anchorage, AK is 16 years old and already an accomplished contester and DXer. He is a very capable CW operator and is very active from the station he shares with his father, Frank, KL7FH, another active ham. Together, they have activated many rare islands for IOTA using their club call, KL1SLE. He has also participated in KL7Y M/M and M/S efforts, delivering the much-needed KL7 and Zone 1 in several contests. Watch out for Chris, he will achieve much in the year to come and beyond!

Oldies but Goodies Making an Aggressive Reappearance

EA8BH Will the master return from Asia?

PJ2B Coming back to try and re-claim their CQWW CW M/M record.

HA/N9NC Tom has been very active recently from Europe. Nice to hear his call again.

K2SX Does having a new wifÎÄhave something to do with his increased activity?

K4WX One to watch *for sure* is Don (The Weather Man). He now has the challenge of beating all the scores he posted as his former self—N4ZZ.

K4XS I heard K4XS on. I used to listen to this contest machine back during my first couple contest seasons. I'd just sit, listen and learn. Glad to see him back.

K5NA Back on familiar turf in TX and getting louder by the month.

K5RC Continues to do well. Making a comeback despite a crummy QTH (NV—HI!)

K5ZD Seems to be raising the bar a little, finishing #2 in the last two CW Sprints.

K7BV Back in the game and making the Top Ten—contrary to his claims that he isn't a Gun. Sly fox in sheep's clothing sneaking up on us?

K7QQ Rex is a rock. This guy is an inspiration and defines tenacity. Been around forever, knows every trick in the book, and has the moxie to outrun the young dogs.

K0VBU Look for big things in 1999 from this "oldie and goodie." Bill has been on the contest scene since the mid '70's, but has seen limited action because he tried to put ham radio in the proper perspective. He has devoted his time, energy, and talents to his family—Boy Scouts, etc. Bill's sons (both licensed hams) are now off at college, leaving Bill with the radio and the time to play. This contest season Bill was active in all the major events (CQWW, SS, 10-M) and he is still trying to stir up more multi-op and regular contest activity. Look for his talents to emerge high and often in the 1999 contest standings. Bill will be operating at stations N0XA, NX0I, KM0L, K4VX and maybe even his own station this coming year. K0VBU will loom big on the contest front in 1999.

N5XJ Mike has not been very active from his own station over the past few months but expects to get back into the mix in 1999. He has been operating mostly as a hired-gun at NX5M and made a big push in the August 1998 SSB NAQP in the multi-two category.

N6CW First TI1C, now what's next?

N6RO Honorable mention to Ken who has come back and is very active. Has the 160-M bug real bad.

W8ZT A new awakening from GA and?

Seasoned Stars Continuing to Rise to New Heights

CT1BOH Wants to hold the CQWW single op record for both modes. He has CW and has vowed to go for the Phone record this year.

K1AR Will continue to win everything that he wants to. "Work less, radio more!"

K1TO Will win SS CW if no one goes to WP3R—and he will come close to winning a DX contest from Florida. He should lead the pack, especially in domestic contests during '99 and well into the millenium.

K1ZM Has a great new station—it is just a question of which category he chooses to do. He will win whatever he chooses. Retirement affords lots of time to make things work.

KQ2M Bob's skills have never been better and operating with modest antennas and being 10—15 dB weaker than the big stations has only made him sharper, more creative and even more highly attuned to band openings, propagation changes, etc. His ability to pick out and remember multiple calls in the pileup gets better with every contest. His two radio op skills will continue to rise a much higher level. A new FT-1000MP will mean he will hear better and contesting will be even more fun that it already clearly has been for the perennial Top Ten'r.

K3WW The "Iron Man" for SOA—'99 might be the year he breaks 10M in CQ WW CW.

K3ZO Fred—what more can a person say…?

K5GN Looks like Dave has the "big station at Sealy" put back together again and will continue to be a major competitor from STX. Even more significant is that he has a really good DX site locked in, and will be a top contender as VP5GN. He's operated from there twice already ('97 WPX CW and '98 CQWW CW) and posted top scores.

K5ZD He still has it and his ZW5B trip got it flowing again. K5ZD and station will continue to place in Top Ten single op.

K6RO SO/LP Larry is a seasoned op who is consistently hovering around the top 10/20 and with station improvements combined with 2-radio experimentation is sure to creep up the elite list in the LP category. You can always find Larry in every major contest along with many of the smaller ones.

N1ND By sheer nature of being knee-deep with the contesters now he *HAS* to improve his skills and make some headway for getting on the air. It looks like he is going to get the ARRL's contest program back into high gear in spite of all the advice he gets from us!

N5KO A relaxed confidence has settled in making Trey more dangerous than ever.

N5TJ Jeff "40% better than everybody else" Steinman. Pretty much wins anything he decides to enter. As has been stated before, "He is an animal."

N6RO Ken, a venerable veteran, continues to Kick Butt!

N6TV Hyper Bob *ALWAYS* a threat anytime he chooses.

N7TR Rich Hallman—a force to be reckoned with.

W1KM A great op/station being made even better.

W4AN Will keep coming—making the Top 5 in DX contests, but not winning because of some W1. '99 might be the year he surpasses the K1AR in CQ WW

W9RE Mike just has to get rid of the line noise.

???? Every "Seasoned Star" I know should be over the hill, but most of us still probably have our best scores ahead of us.

New Stations/Antennas to Lift an Already Good Op

P43P/P40B Already the site of the CQWW CW Record!

VE1ZZ Antenna City! This OTer always has another antenna in the making!

KI1G Rick bought himself a new house with some acreage on top of a hill in Hope, RI, to erect a respectable antenna farm of his own. He's spent a lot of time modeling the terrain and optimizing the antennas to his new site. Just prior to this contest season, he was able to get one tower up with a modified 205BA at about 64 ft. At the last minute, he put 40 ft of 25G bracketed to the house for the 10, 15 and 40 monobanders. The plans for the summer are to grow the 40-ft "stump" to a respectable height for 10 and 15 stacks. He's also been clearing the trees to put up the big tower: 120 ft of 25G for the 40 and 20 meter stacks. When Rick gets a decent set of antennas over him at his new QTH, I think he'll definitely be one to watch at the top of the scores in 1999.

K1TO Dan has already proven that his new station is helping him win some big contests.

KF2O Hank is using all his skill to work all TV's with his spanking new 80-M 4-square. Watch out for him in the spring!

K4ZA After years of M/M operating or guest operating at other guys' stations, he is getting the stack of TH-6s up in the air.

KQ2M Watch out USA—real antennas are going up!

N1RR It happening!

N3BB Re-engaging in yet a new higher gear

N3AD Big new antenna farm about finished.

N5JA Al has been in the process of a total station re-build for the past few months. His South Texas QTH was already a fantastic location for SS and the ARRL 10-M contest, and he's enjoyed quite a bit of success from there in the 160 contests. He purchased another 40 acres and a house adjoining the old station land, and is starting over with totally open territory for more and longer beverages, and four-squares for 80 and 160. 80 had been his weak point in the previous SS contests—look for that to be corrected in 1999. He's in the process of becoming proficient with a pair of FT-1000's and Alphas

N6RO Has just put up a lot of wire on 160.

NK6U Watch for NK7U (aka NK6U) as a SO and with his M/S team of K6BZ, N7PAV, WA6QQF, etc. Joe is rapidly building a new station near Modesto, CA. The NK7U M/M station in Baker, OR is intact and will remain so for the foreseeable future. It will be operated by K7ZO, W7ZRC, etc. The new station (San Joaquin Contest Club—NK6U) will not feature as much aluminum as the one up in Oregon, but the better propagation of 800 miles further south should help.

N7WA Look for bigger and better things from Mike, who is quietly adding to the aluminum farm at a new QTH.

N7TT Building a bigger/better station that has already turned in a series of fine finishes that are masked by Pacific NW propagation.

W2VJN George in Umpqua, OR continues to build an increasingly formidable station. The station, coupled with George's excellent technical and operating knowledge, has produced solid results in many contests. Look for George to begin showing up in the Top Ten boxes in the immediate future.

W3RJ He isn't likely to be aggressive, but he has reappeared and listing him might scare a few folks)

W4AN Seems to be doing well with his new station. He certainly has put a lot of effort into it, especially considering that it is at a remote location, away from his home.

W7GG Bob, fromerly AI7B (or "Bravo" as he is known to many contesters), has built a formidable station in central Oregon. Bob is a first class operator and has built a first class station, capable of running with the best in the Northwest. Besides being active on both CW and SSB, he is a big RTTY contest fan and continues to provide OR and Zone 3 to many in the big RTTY 'tests.

WE9V Finally built his own station!

K7PN *Antenna/Tower Specialist*—Paul in Zig Zag, OR. Though not as involved in the operating end of contesting, Paul continues to contribute much to the art through his knowledge and skill with antennas and towers. The lead technical person on the Voo Doo contest team in 1996 and 1997, and a builder of many developing contest and DX stations and super-stations, Paul's efforts continue to improved many a signal and contribute to millions of contest points.

Emerging Multi-op Stations (Various categories-M/S, M/M, etc.)

6Y2A The M/M accomplishments of the crew certainly stand apart from anything that has been done before. Around 18,000 Q's in CQWW CW—in a field-day style operation!

HC8A N6KT/N5KO only need a building (shack) to make their station rebuilding complete and more competitive.

VE3EJ A well engineered setup.

VE5RIM/M group in Lloydminster, SK. They have developed a great antenna farm in the last three years, and have had a successful record of some pretty impressive improvements in score (CQWW score has TRIPLED three years running). They're still not in the North American Top Ten, but should they continue at the same rate they are now

they will emerge as a player.

ZX5J This station was used like single operater station almost all of the time in the past, but their experience during WPX CW '98 shows that ZX5J can break many records in the multi category.

K3II Small Multi Multi with a hot new crew.

K3LR 99 might be the year that they emerge as the supreme USA M/M station. Importing ops from everywhere seems to help drive the excellent hardware to maximum efficiency.

K5MR M/S in DFW

K5NA M/S in Austin, TX

K8GP A 6-M powerhouse.

KT0R Dave has always put up some nice SS M/S scores (a Top 10 for SSB in '97 and hopefully Top 10 for both modes this year.). The addition of 15 and 10-M monobanders for the home contest station (where we go when NOT at W0AIH) could put the KT0R crew over the top for SS '99. Of course, KT0R may just decide to go SO, now that his home station is finally completed!

KC1XX Matt keeps adding more and more.

N2NU M/S M/2 just about there.

N2RM A few new antennas and they will be back in biz.

N3BB M/S in Austin, TX.

N5TW M/S in Austin, TX.

NM6Q M/S Run by W6UC and NO6X with others has made quite a splash in the M/S category this past year and they seem to keep going strong. Plans exist for towers/antennas being added to the arsenal.

NN6NN M/S San Joaquin Valley Contesters—W6XK Trustee—Hughson, CA. Not a "Big Gun", but very turned on to improving scores.

NX5M Bob is slowly rebuilding his station at a really nice location and has enough aluminum in the air to make a substantial amount of noise. He has hosted 4 contests in 1998 and used one of them to initiate some new operators into the world of contesting.

W3PP The FRC's secret M/M weapon in Delaware.

W4MYA M/S in Richmond, VA.

W5KFT A 6-M powerhouse.

W7RM A good bunch of CW ops and a growing interest in phone contests make this one quality operation. Though geographically disadvantaged, with the rise in sunspots the W7RM scores might soon hit the national listings of top scores. At 82, Rush continues to crack the whip and keep the wheels moving.

W9JA/4 M/S station built like a M/M. Look out for W9JA/4 (KS9K). He's got an offer in on 123 acres about 100 miles south of W3LPL. There will be about 6 200-ft towers. Moving may start this summer.

WX0B M/S in DFW continues to grow

VHF/UHF Specialists

VE9AA Highly motivated when it comes to 6 M

N6TR & W7EW Getting interested in serious 6-M activity. Look out!

W7XU South Dakota. Arliss and his wife are building a world class VHF contest station that may be a top contender in the June VHF QSO Party.

RTTY Specialists

N6TR/7

VY2SS

W2UP Pretty hot on RTTY.

W7TI Da Man for RTTY up here.

WF1B

QRP Specialists

K3PH A new juggernaut in QRP contesting. His performances in 1998 were unbelievable. He was the W/VE QRP winner in ARRL DX CW. His QRP score in the PA QSO Party was #4 overall for single-op, any power! Bob will definitely be one to watch in '99. He's been a leading QRP contester for a while, but he may finally give AA2U a run for the money as king of QRP!

Clubs to Watch

Florida Contest Group If these guys get beyond the trial merger phase, and most of us move down there to retire eventually, they could end up with all the good guys—even if they are somewhat over the hill.

PVRC Really getting it's act together for SS, ARRL 10, 160 and other events.

TCG Watch out for the entire "Tennessee Contest Group." We have many snakes in the grass just waiting to strike!

YCCC Getting its act together for CQWW and ARRL DX.

Other Perdictions & Questions

No W1 will make the Top Ten in SS CW.

Anyone who can copy CW at 35 WPM can go to WP3R and win SS CW.

Watch out, a QRP world winner is building a new amp to drive with his current SB220! Did anyone explain to him what Q-R-P means? (Quadruple-Radiating-Power?)

The 6Y2A Team—where will they be during the 1999 CQWW CW? Their story is amazing and an inspiration.

W0UA at W0UN... what band will it be this year?

YT1AD what does he have planned in '99?

N6AA and N6ZZ what zones in '99?

AA2U (QRP)—where were you in '98?

W3AO (PVRC) vs. W2GD (FRC lite) in ARRL FD—a 4A rematch is coming.

N5FA will Jim return to PY0F for another try after his impressive '98 WW PH SOABHP win?

W2GD team vs. ????? in CQ160 CW—will WW2Y return?

W3LPL will continue to dominate and be a major player in M/M.

My team pick is TEAM ARUBA—P40E, P40W and P40B and having numerous P4's in Top 10.

AA6TT has moved from CO to VT and wants to build the ultimate station. It will be interesting, we shall see!

K5XI rumors of a move West abound–the question is can 'RC talk him into NV or will the new QTH pop up in AZ?

And, In Closing...

"May I suggest we start publishing trading cards of top contesters and rookie (novice contesters) to be included with new ham gear and bubble gum. The WRTC participants would be worth more since they were picked for the All Star Ham Games. Players for top contest teams such the Frankfort Radio Club in the major leagues would get top billing. Players for the minor leagues such as the Delaware Lehigh ARC would be stuffers. You would buy packs of gum hoping to get major league contesters. Wild cards would be DXpeditioners. I am looking for a W3BGN trading card from the 1950s. Would a QSL card become a trading card? I have a W3BES QSL (old call for W3GM) in my collection. Who can top that? I even found a WN2REH card from 1957. Who would have known in 1957 he would rise to star status?—73, *Bill, K3ANS"*

"I notice that there is no category for GOF's actively engaged in "regressive" contest performance. (Yeah—Grumpy Old Farts who are gettin' too worn out to push the F1 key...)—*Joe, W5ASP (a.k.a. GOF)"*

I hope you all enjoyed this! If so, maybe we will do it again next year.

My thanks to this year's very qualified handicappers: PY2NY, VE5CMA, VE9AA, YU1AO, AA3B, AG9A, K1KI, K1KY, K1SD, K2KW, KQ2M, K3ANS, K3PP, K3WW, K4OGG, K5ZD, K5ZM, K6BZ, K6LL, K7BV, K7NT, KI7Y, KU7Y, K0XQ, KM0L, N3BB, N5DJ, N5OLS/KH8, N6EE, N6ED, N6TV, N7TR/7, N0AX, N0JK, NN4X, NX5M, W2GD, W2UP, W2XX, W4AN, W5AJ, W5ASP, W6OAT, WA7BNM, WA0RJY and WE9V.

73 & have a great year fulfilling these prophecies.

Dennis Motschenbacher, K7BV

Our Cover

If you managed to work zone 23 during the 1998 CQWW, there's a good chance it was JT1A. OH2BH, OH2BE, OH1RX and OH8PF gathered up some gear and set out from Beijing intending to operate Multi-Single from the Mongolian Radio Sport Federation club station, JT1KAA. The tremendous hospitality and cooperation of the Mongolian ham population, a bit of equipment repair and some last minute wheeling and dealing allowed them to kick it up a notch—Multi-Multi the Mongolian way!

Travel along with Martti, his Mom, Jouko and Jukka as they explore and enjoy the people and culture of present-day Mongolia—see "CQWW 1998—and Making Friends with Those Elusive JT's." ■

Contest Club Finland

Ari Korhonen, OH1EH
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By now most of the active contesters have probably found out that there's a new active contest club in Europe, the Contest Club of Finland (*CCF*).

How the CCF was Born

Contest activity in Finland has always been high, but for some reason guys have done things mostly on their own and there really has never been a large contest club in OH.

The idea to establish the CCF was actually born during some phone discussions between OH1EH, OH1NOA, OH2IW and OH6YF. One thing led to another and finally in 1996 the CCF was born. The actual founding members were OH1EH, OH1JD, OH1NOA, OH1WZ, OH2IW, OH2MAM, OH2MM and OH6YF. We sent letters to the active OH contesters and asked them to join the club. Well, about 200 guys did and that number makes the CCF one of the largest contest clubs in Europe.

As with most other contest clubs, the primary goals of the CCF are to promote contests in OH, get the young operators interested in contesting, sponsor prizes and take part in club competitions.

Club Communication

While the majority of the CCF members are located in southern Finland, we still needed a way to keep the members informed and updated. As with most other clubs, we have a newsletter, *PileUP!*, which is published six times a year. The magazine is professionally printed and we have some ads to help with the expenses.

The Internet is an important tool also. We have our own Web site. Check out **http://www.contesting.com/ccf**. Besides the Web site, we have a mailing list which has become very popular among the CCF members. We would like to use this opportunity and say *THANK YOU* to Bill Fisher, W4AN for his help!

After the major contests we meet on 3666 kHz to collect scores and swap stories.

Club Competitions

One of the main goals of the CCF is to take part in club competitions. For such a young club we have actually done quite well. We won the 1997 WPX Club Competition with a score of about 82 million points.

In the 1997 CQ 160-Meter Contest the CCF was first in Europe and we hope to repeat in 1998. We also placed second in the 1997 CQ WW CW Contest.

Meetings

The CCF doesn't have regular meetings, but two or three large meetings are organized each year. The meetings have various presentations and typical attendance varies from 70 to 90. For instance, the last meeting in May had the following presentations: ZD8Z by N6TJ, H44RY/H40AA, OJ0/OH1VR, BA1A by OH2BH, etc. The meetings are great places to share some war stories and ideas and the enthusiasm generated by a large group of contesters is always amazing!

What's Next?!

So far so good, but there's always room for improvement! There are quite a few good young operators coming up here in OH and we try to get them interested in contesting. The enthusiasm level among the members in general is excellent and should only get better with the improving conditions. We already have our sights on the CQ WW Club Competition and promise to give the other European clubs a run for their money!

73, Ari, OH1EH

CQ WPX SSB 1998—OG5F vs OH0W (Why OG5F beat us bad, that is...)

by Ari Korhonen, OH1EH, and Kari Lehtimaki, OH2XX

This article takes a quick look at the operation of two Contest Club Finland Multi/Single stations in the 1998 WPX SSB Contest. We knew right from the start that this would be an interesting matchup. OG5F (OH2HE in disguise) had much more aluminum up than we had at OH0W. (See **Table 1**.) On the other hand, we had the advantage of being at OH0 with a very respectable antenna system at our disposal.

Table 1
Antennas

OG5F (OH2HE)	OH0W
10 m: 4/4/4 Yagis, 5-el Yagi	10 m: 5/5 Yagis
15 m: 6/6 Yagis, 4-el Yagi	15 m: 4/4 Yagis
20 m: 5/5 Yagis, 4/4 Yagis, 3-el Yagi	20 m: 4/4 Yagis, 3-el Yagi
40 m: 3/3 Yagis, 2-el Yagi	40 m: 3-el Yagi
80 m: 4-square, dipole	80 m: slopers
	160 m: inverted V

To answer the big question, why OG5F beat us, take a look at continent statistics.

OG5F

	160	80	40	20	15	10	Total	Percent
N. America	0	2	287	729	227	0	1245	31.0
S. America	0	0	36	22	5	34	97	2.4
Europe	0	294	363	674	160	16	1507	37.5
Africa	0	3	3	13	8	4	31	0.8
Asia	0	10	61	258	661	12	1002	24.9
Oceania	0	0	14	68	50	5	137	3.4

OH0W

	160	80	40	20	15	10	Total	Percent
N. America	0	1	108	494	204	0	807	21.0
S. America	0	2	20	13	26	15	76	2.0
Europe	86	513	429	575	379	1	1983	51.6
Asia	1	15	49	279	528	0	872	22.7
Africa	0	2	1	7	24	0	34	0.9
Oceania	0	0	4	45	22	0	71	1.8

Sad, but true... OG5F worked much more DX than we did at OH0W. They particularly killed us on 40 meters, where they

OH1NOA

OH1MM

4/4 20 m, 3el 40-m.

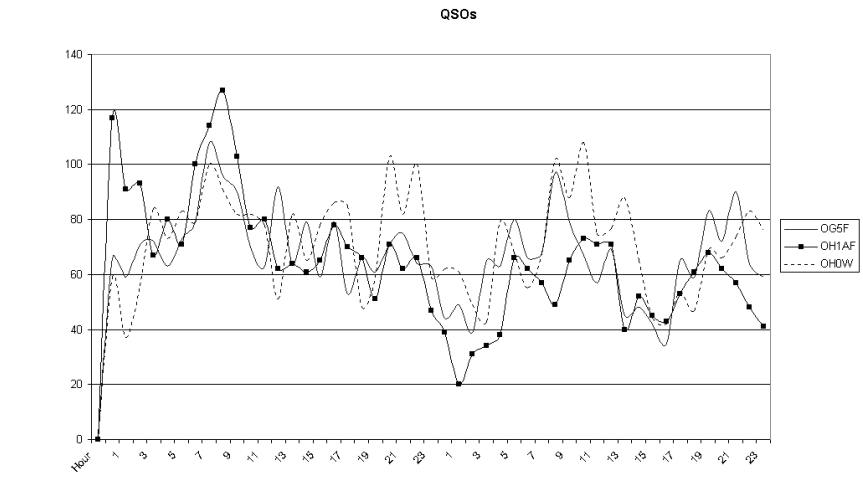

Figure 1—OG5F vs OH0W in the 1998 CQ WPX SSB Contest. QSOs/hour rate vs time in UTC.

worked 287 North Americans (6 points a piece) whereas OH0W worked only 108. We listened to them running the States at least two hours earlier than we could. Somewhere between their 3 over 3 at 200 feet and our 3-elements at 100 feet was the signal threshold that allowed them to do a much better job on 40 meters.

The graph showing QSOs/hour is interesting. (See **Figure 1**.) Take a look at the huge peak OH0W had at 1300Z on Saturday. We went to 80 meters and worked huge number of OHs there. Check out also Sunday, 0900Z. For some reason, we were able to run the 15-meter JAs much better than the guys at OG5F. Might have been packet...

Finally, here are the scores:

OG5F

BAND	QSO	QSO PTS	PTS/QSO	PREFIXES
160	0	0	0.0	0
80	307	668	2.2	86
40	748	3042	4.1	245
20	1703	3786	2.2	433
15	1086	2923	2.7	236
10	71	178	2.5	34
Totals	3915	10597	2.7	1034

Total Score=10,957,298

OH0W

BAND	QSO	QSO PTS	PTS/QSO	PREFIXES
160	83	170	2.0	11
80	528	1126	2.1	158
40	604	1924	3.2	121
20	1404	3061	2.2	370
15	1170	2761	2.4	293
10	16	46	2.9	12
Totals	3805	9088	2.4	965

Total Score=8,769,920

Congrats to the guys at OG5F. They knew what they had to do and they did it perfectly! We, on the other hand, found out that one CAN work too many Europeans in this contest! That's the problem that comes with being at a rare QTH and being loud in Europe. Thanks for the Qs!

OH1EH, OH1MDR

OH2XX, OH6EI and OH1EH ■

SCVs: A Family Album
Part 4: The Open-Ended Cousins

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Having examined the low-band properties of the delta and rectangular loop, we next turn to the open-ended cousin of these SCVs: the half-square. Although developed after its double-wide brother, the bobtail curtain, the half-square is the more fundamental antenna.[1] As shown in **Figure 1**, it consists of two (roughly) $^1/_4$-λ vertical legs connected by a (roughly) $^1/_2$-λ horizontal wire. The horizontal wire functions as a phasing line between the verticals, although its radiation is imperfectly cancelled.

The first question often asked about the half-square is whether it really belongs to the SCV family. Like the loops, the half-square may operate without a ground plane—in fact, a small ground plane may reduce its gain and other desirable properties. Moreover, one may model the antenna in free space and make versions pointing either up or down for any frequency. For low band use, the down-pointing half-square is favored because it places the high-current points at the corners at maximum achievable height.[2]

One can establish the SCV credentials of the half-square by a simple free-space modeling project. Begin with a right-angle delta, as shown in **Figure 2**. Separate the wires at the high-impedance apex point by a little. Then widen the separation, adjusting the model to maintain something close to resonance. **Table 1** shows the first steps of this progression. In effect, nothing happens when the wires at the apex do not touch. By gradually straightening the sloping delta wires toward the vertical and by lengthening the baseline until the feed point is in a corner, one evolves the half-square. Finally, for low-band use, flip the antenna over so that the open ends point down. Of course, in free space, from which the figures in the table emerge, the flip is gratuitous, since there is no up or down.

The more ideal separation between the vertical elements of the half-square produces a sharper bidirectional pattern than the SCV loops develop. The side rejection will vary from 10 to well over 15 dB, for a familiar peanut-shaped pattern. An example appears in **Figure 3**. Whether this pattern is an advantage or a disadvantage depends on the operator's needs.

Like the other SCVs, the half-square has a ratio of horizontal to vertical lengths that yields maximum gain in free space (and over ground). However, that ratio appears to be independent of frequency, except for some residual effect of wire size. The ratio of horizontal length to vertical height for maximum gain is about 1.6:1.[3]

For most antennas, there is sufficient band-to-band variation that giving formulas for cutting wires can be more misleading than helpful. However, the relatively invariant relationship between the horizontal and vertical dimensions of the half-square for a maximum-gain configuration tends to assure a good utility for such formulas here. Where H is the horizontal length in feet, V is the vertical height in feet, and f is the frequency in MHz,

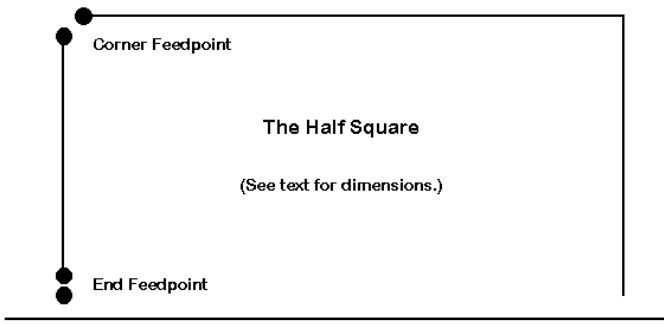

Figure 1—Basic outline of the half-square antenna.

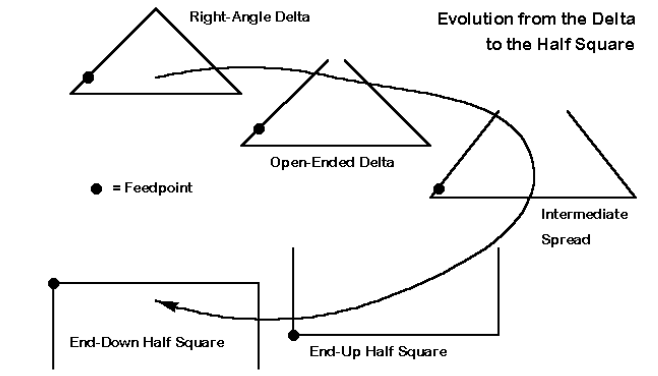

Figure 2—Evolution of the half-square from the delta.

Table 1
Partial Evolution of a Right-Angle Delta to a Half-Square

Antenna Description	*Gain (dBi)*	*Feed-point Impedance (R +/– jXΩ)*
Right-angle delta: 60.8-ft base; 30.4-ft height	3.31	51 + *j*6
Right-angle delta: apex wires separated 0.2 ft	3.31	51 + *j*6
Height increased to 30.41 ft; apex spread 0.4 ft	3.32	51 + *j*7
Height increased to 30.7 ft; apex spread 2.0 ft	3.36	51 – *j*1
Height increased to 31.1 ft; apex spread 4.0 ft	3.41	53 + *j*5

Note: Frequency: 7.15 MHz; Wire: #12 AWG copper; model in free space.

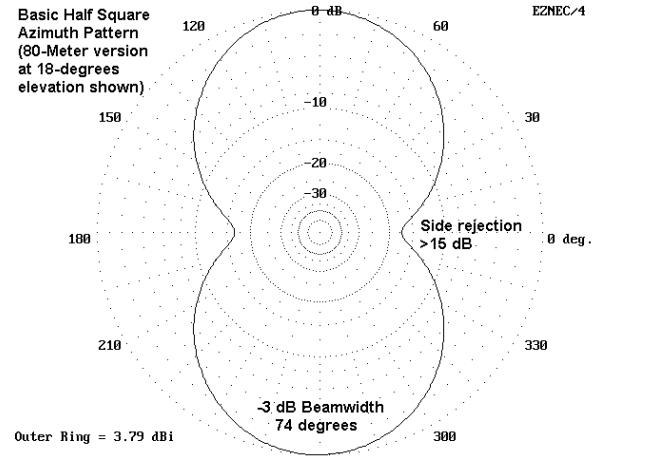

Figure 3—Basic azimuth pattern of the half-square at the elevation angle of maximum radiation when the antenna is at the height of maximum gain.

$$V_{feet} = \frac{278}{f_{MHz}} \text{ and } H_{feet} = \frac{447}{f_{MHz}}$$

80-Meter and 40-Meter Maximum Gain Half-Squares

An 80-meter half-square designed for maximum gain at 3.6 MHz requires a horizontal wire about 124.5 ft long and two vertical end wires, each 77 ft long, when all wires are #12 AWG copper. The maximum free space gain of this antenna is about 4.6 dBi. When the antenna is placed over ground at some achievable height, the free space gain cannot be realized until the soil is very much better than average.

Table 2 shows the results of modeling the 80-meter half-square over various soils. The listings can be quite short, since—for all but very poor soil—the half-square reaches maximum gain when the vertical ends are quite close to the ground. Indeed, the most desirable height from the point of view of gain is lower for average soil than it is for either poor or very good soil. However, like the other SCVs, the half-square shows a consistent pattern of feed-point impedances for corner-fed models regardless of the soil type immediately beneath the antenna. The antenna is close to resonant in the vicinity of 70 Ω, although very close proximity to the ground raises that number by as much as 10 Ω.

A corresponding maximum gain half-square for 7.15 MHz would be 62.45 ft horizontally and 39 ft vertically, using #12 AWG copper wire. Because the #12 wire is a larger fraction of a wavelength in diameter, the antenna's free space maximum gain is nearly 4.7 dBi. However, like the 80-meter model, the 40-meter half-square does not achieve this gain over ground unless the soil is far better than average.

Table 3 shows the figures for 40-meter half-square performance over various types of soil. Once more, the antenna shows maximum gain when the ends are fairly close to the ground, although that height varies with soil type.

Table 2
80-Meter Half-Square Over Various Soils at Various Heights

Soil Type	*Bottom Height (feet)*	*Gain (dBi)*	*T-O Angle (degrees)*	*Feed Impedance (R +/– jXΩ)*
Very Poor (C=0.001, DC=5)	5	1.74	23	80 + *j*13
	10	1.92	22	74 + *j*5
	15	2.05	22	70 + *j*1
	20	2.14	21	67 - *j*3
	25	2.21	20	65 - *j*1
	30	2.27	20	63 - *j*1
Poor (C=0.002, DC=13)	5	3.24	21	80 + *j*17
	10	3.34	20	75 + *j*7
	15	3.40	20	71 + *j*2
	20	3.42*	19	68 - *j*0
	25	3.42*	18	66 - *j*1
	30	3.41	18	64 - *j*2
Average (C=0.005, DC=13)	5	3.75	20	81 + *j*19
	10	3.79*	19	75 + *j*8
	15	3.79*	18	71 + *j*2
	20	3.76	18	68 – *j*0
	25	3.71	17	66 – *j*1
	30	3.63	16	64 – *j*2
Very Good (C=0.0303, DC=20)	5	6.30	15	80 + *j*20
	10	6.36	15	75 + *j*9
	15	6.40	14	72 + *j*3
	20	6.42*	14	69 – *j*0
	25	6.42*	13	66 – *j*2
	30	6.40	13	64 – *j*3

Height of maximum gain.
Dimensions of half-square = 124.5-ft horizontal length, 77-ft vertical height.Construction: #12 AWG copper wire.

Unlike the 80-meter antenna, modeling suggests that the half-square for 40 performs slightly better over poor soil than over average soil, although the difference is marginal, since the progression of take-off angles, or elevation angles of maximum radiation, is normal and decreases regularly with improvements in soil type. The progressions of feed-point impedances are also quite normal to our expectations. Again, because the #12 wire is "fatter" on 40 than on 80, the resonant feed-point impedance is a few ohms under that of the corresponding 80-meter half-square.

Although the tables flag a height (or two) as reflecting maximum gain heights for soils that are poor or better, the entries for very poor soil show no flags. The reason for the absence of a flag is that over very poor soil, half-squares for 80 and 40 continue to show increases of gain with increases of height. Table 4 extends the 40-meter "very poor soil" set of values up to a height of 60 ft for the lowest point of the antenna. The continued increase in gain and lowering of the take-off angle are clearly apparent.

However, an illusion accompanies this progression, as shown in Figure 4. The elevation patterns in the figure are for

Table 3
40-Meter Half-Square Over Various Soils at Various Heights

Soil Type	*Bottom Height (feet)*	*Gain (dBi)*	*T-O Angle (degrees)*	*Feed Impedance (R +/- jXΩ)*
Very Poor (C=0.001, DC=5)	5	2.41	23	73 + *j*4
	10	2.72	22	67 – *j*1
	15	2.94	21	64 – *j*2
	20	3.13	20	62 – *j*2
	25	3.29	19	61 – *j*1
Poor (C=0.002, DC=13)	5	3.57	21	75 + *j*6
	10	3.72	20	68 – *j*1
	15	3.78	18	64 – *j*3
	20	3.80*	17	62 – *j*2
	25	3.78	16	61 – *j*1
Average (C=0.005, DC=13)	5	3.40	20	76 + *j*6
	10	3.46*	19	68 – *j*1
	15	3.42	17	64 – *j*3
	20	3.33	16	62 – *j*3
	25	3.20	15	61 – *j*1
Very Good (C=0.0303, DC=20)	5	5.50	17	76 + *j*7
	10	5.51*	15	69 – *j*2
	15	5.44	14	65 – *j*4
	20	5.26	13	62 – *j*4
	25	5.05	12	60 – *j*2

Height of maximum gain.
Dimensions of half-square = 62.45-ft horizontal length, 39-ft vertical height. Construction: #12 AWG copper wire.

Table 4
40-Meter Half-Square Over Very Poor Soil at Various Heights

Soil Type	*Bottom Height (feet)*	*Gain (dBi)*	*T-O Angle (degrees)*	*Feed Impedance (R +/–jXΩ)*
Very Poor (C=0.001, DC=5)	5	2.41	23	73 + *j*4
	10	2.72	22	67 – *j*1
	15	2.94	21	64 – *j*2
	20	3.13	20	62 – *j*2
	25	3.29	19	61 – *j*1
	30	3.45	18	61 + *j*0
	35	3.60	18	62 + *j*1
	40	3.76	18	62 + *j*1
	45	3.92	17	63 + *j*1
	50	4.10	16	64 + *j*1
	55	4.29	16	64 + *j*1
	60	4.48	15	64 + *j*0

antenna base heights of 10, 25, and 40 ft, respectively. As one raises the antenna, gain increases, but so too does a secondary high-angle lobe. In the process of acquiring more gain, the half-square user also acquires high-angle radiation in the receive mode, thus decreasing the QRM and QRN filtering benefits of the half-square. Whether there is a cut-off point to the height of the antenna over very poor soil—and where that point might be—is a decision only the antenna builder can make.

In general, the half-square over almost any soil type provides maximum gain at heights closer to the ground than is true of the other SCVs. Like its relatives, the half-square elevation pattern begins to produce secondary high angle lobes as soon as it passes the height of maximum gain. Exceeding that height by very much may yield stronger reception to closer-in, high-angle signals and partially or wholly defeat the basic purpose in using an SCV in the first place.

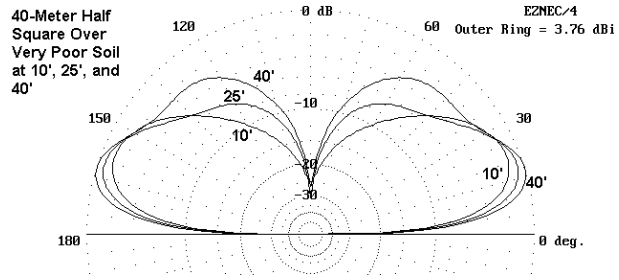

Figure 4—Elevation patterns of a half-square over very poor soil for three heights. Note the increasing gain, but as well, the increasing high-angle secondary lobe.

Table 5

80-Meter 50-Ω Resonant Half-Square Over Various Soils at Various Heights

Soil Type	*Bottom Height (feet)*	*Gain (dBi)*	*T-O Angle (degrees)*	*Feed Impedance (R +/– jXΩ)*
Very Poor	5	–0.29	25	66 + *j*9
(C=0.001,	10	–0.12	24	61 – *j*1
DC=5)	15	–0.02	24	57 – *j*7
	20	0.03	23	54 – *j*10
	25	0.06	22	52 – *j*13
	30	0.08	21	51 – *j*15
Poor	5	1.61	23	61 + *j*16
(C=0.002,	10	1.66*	22	57 + *j*4
DC=13)	15	1.66*	22	54 – *j*3
	20	1.61	21	53 – *j*7
	25	1.54	20	51 – *j*10
	30	1.46	19	50 – *j*12
Average	5	2.33*	21	60 + *j*21
(C=0.005,	10	2.30	21	56 + *j*8
DC=13)	15	2.20	20	54 + *j*1
	20	2.08	19	53 – *j*4
	25	1.93	18	52 – *j*8
	30	1.77	18	51 – *j*11
Very Good	5	5.27*	16	52 + *j*25
(C=0.0303,	10	5.17	16	51 + *j*12
DC=20)	15	5.04	16	50 + *j*4
	20	4.89	15	50 – *j*1
	25	4.73	14	50 – *j*5
	30	4.58	14	50 – *j*8

Height of maximum gain.
Dimensions of half-square = 155-ft horizontal length, 60-ft vertical height. Construction: #12 AWG copper wire.

80-Meter and 40-Meter 50-Ω Resonant Half-Squares

From the numbers in **Table 3** and **Table 4**, it is clear that the feed-point impedance of a maximum gain half-square is somewhat distant from 50 Ω. However, one of the benefits of using a corner feed-point for the antenna is the ability to feed the antenna with standard 50-Ω coaxial cable. Therefore, I redesigned the half-square models to come somewhat closer to a 50-Ω feed-point impedance.

The 80-meter (3.6 MHz) model required horizontal stretching to 155 ft with the verticals shortened to only 60 ft to arrive at a 50-Ω antenna in free space. This is a horizontal-to-vertical ratio of about 2.58:1, which is a considerable departure from the maximum gain ratio of 1.6:1. When subjected to the same systematic modeling over various soils as the maximum gain models, **Table 5** emerged. All of the gain figures are down significantly from the maximum gain model, with the decreases growing worse as the soil type grows worse. Moreover, the heights for maximum gain also decrease, while the take-off angles increase. Whether these reductions in performance warrant the move to a 50-Ω model is, once more, a user decision.

Figure 5 shows the feed-point resistance and reactance across the 80-meter band for the 3.6 MHz model. Across the band, the change in the resistive component is about 77 Ω. With some redesign of the antenna, almost all of the band might be fit within a 2:1 SWR curve, assuming that the reactance can be compensated for at the feed-point. However, the reactance varies by over 500 Ω, suggesting that additional redesign for a remotely tuned series capacitor might still not yield full band coverage.

40-meters presents fewer problems for a half-square designed for 50-Ω feed. The dimensions of the model used for 7.15 MHz, was 70.5 ft horizontally and 34.5 ft vertically (with #12 AWG copper wire). The horizontal-to-vertical ratio is about 2:1, which is much closer to the maximum gain ratio than the 80-meter version achieved. The gain reductions for the 40-meter antenna are less severe than for the 80-meter model, and the heights needed for maximum gain are only slightly lower than those for the maximum gain model for each type of soil, as shown in **Table 6**. Likewise, increases in the take-off angle are less severe. In general, then, a 40-meter half-square designed for 50-Ω resonance may be more feasible than an 80-meter version.

The feeding problem is also less severe on 40 meters. The resistive component of the feed-point impedance, as shown

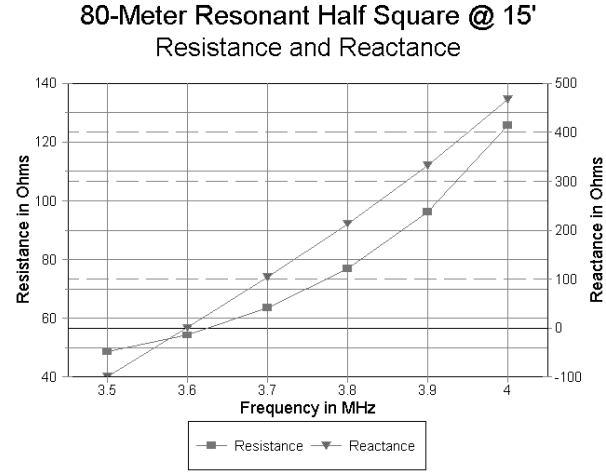

Figure 5—Feed-point resistance and reactance of a 50-Ω resonant 80-meter half-square across the band.

in Figure 6, varies by only 6 Ω or so, while the reactance varies by a little under 140 Ω. Therefore, for a corner-fed 40-meter half-square, a remotely tuned series variable capacitor becomes a viable option for full band coverage with direct coax feed—assuming the antenna is further optimized to present inductive reactance across the band.

End-Feeding the Half-square

Corner-feeding the half-square eliminates in large measure the need for a more complex matching network when the antenna is used only on the band for which it is designed. Conversely, feeding the antenna in the most traditional manner—at the open end of one of the verticals—requires a parallel tuned circuit resonated on the band of choice. The coil is tapped for coaxial cable feed. An additional tap may be used near the top of the tank circuit to effect the most precise match possible.

At the fundamental frequency for which the half-square is cut, the use of end or corner feeding makes little difference to performance. Figure 7 shows the slight difference in pattern. With corner feed, the bidirectional pattern is closely symmetrical, with gain maxima at 90 and 270 degrees in the pattern shown. When end fed, the antenna shows a slight displacement of about 5 degrees in the maximum gain points, tilted away from the feed point. In practical terms, the user would be hard pressed to tell the difference.

End feeding is often recommended for those planning to use the antenna on more than one amateur band.[4] If the matching network is remotely tuned, it might be pressed into service as a multi-band tuner. Likewise, there is no rule against feeding the corner with a parallel transmission line and using an antenna tuning unit in the shack for other bands.

Table 7 hints at the anticipated results of using an 80-meter half-square on 40, 30, and 20. By comparing corner and end feeding systems for a single model of the half-square, we

Table 6

40-Meter 50-Ω Resonant Half-Square Over Various Soils at Various Heights

Soil Type	*Bottom Height (feet)*	*Gain (dBi)*	*T-O Angle (degrees)*	*Feed Impedance (R +/– jXΩ)*
Very Poor	5	1.85	24	58 + *j*4
(C=0.001,	10	2.15	23	53 – *j*3
DC=5)	15	2.34	21	50 – *j*6
	20	2.51	20	48 – *j*6
	25	2.68	19	47 – *j*7
Poor	5	3.19	22	58 + *j*8
(C=0.002,	10	3.30	20	53 – *j*1
DC=13)	15	3.31*	19	50 – *j*5
	20	3.28	18	48 – *j*6
	25	3.23	17	48 – *j*6
Average	5	3.06*	21	59 + *j*9
(C=0.005,	10	3.06*	19	53 – *j*0
DC=13)	15	2.97	18	50 – *j*4
	20	2.83	17	49 – *j*6
	25	2.68	16	48 – *j*6
Very Good	5	5.34*	17	57 + *j*12
(C=0.0303,	10	5.24	16	52 + *j*1
DC=20)	15	5.06	15	50 – *j*3
	20	4.82	14	49 – *j*5
	25	4.54	13	48 – *j*6

Height of maximum gain.
Dimensions of half-square = 70.5-ft horizontal length, 34.5-ft vertical height. Construction: #12 AWG copper wire.

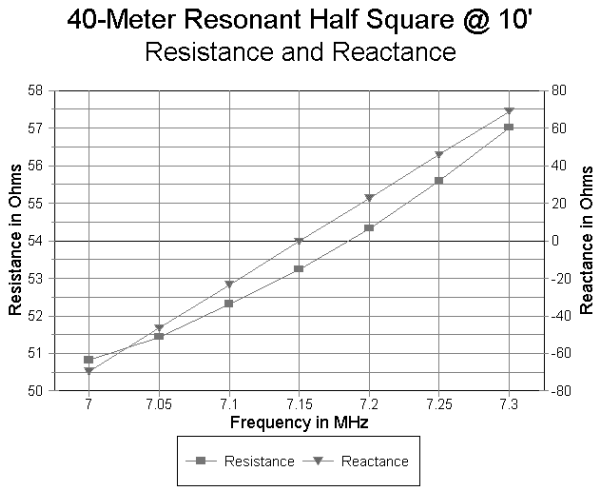

Figure 6—Feed-point resistance and reactance of a 50-Ω resonant 40-meter half-square across the band.

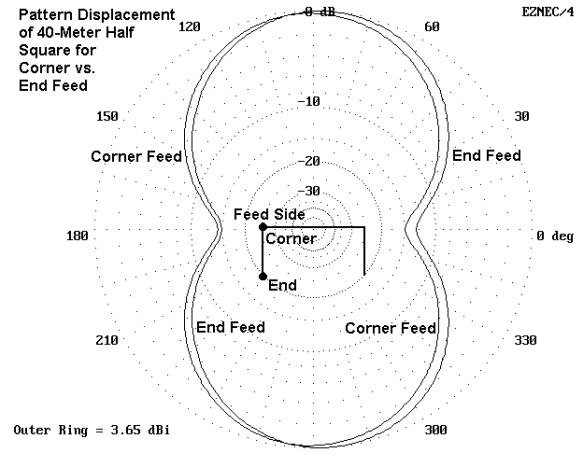

Figure 7—Comparison of azimuth patterns of a corner-fed and an end-fed half-square. Except for the feed-point location, the antennas are identical.

Table 7

Corner-Fed vs End-Fed 80-Meter Half-Squares at Higher Frequencies

Frequency	*Max. Gain (dBi)*	*T-O Angle (degrees)*	*Az. Angle of Max. Gain (degrees)*	*Feed-point Impedance (R +/- jXΩ)*
3.6 MHz				
a. Corner	3.79	18	90	71 + *j*3
b. End	3.93	18	85	4100 – *j*4000
7.15 MHz				
a. Corner	5.35	20	55	1400 – *j*30
b. End	5.17	20	53	1900 – *j*3000
10.1 MHz				
a. Corner	6.59	16	41	1000 – *j*600
b. End	6.46	19	40	350 – *j*2000
14.1 MHz				
a. Corner	6.78	33	31	600 – *j*200
b. End	7.29	34	30	800 – *j*1000

Dimensions of half square = 124.5-ft horizontal length, 77-ft vertical height. Construction: #12 AWG copper wire. Height 15-ft minimum.

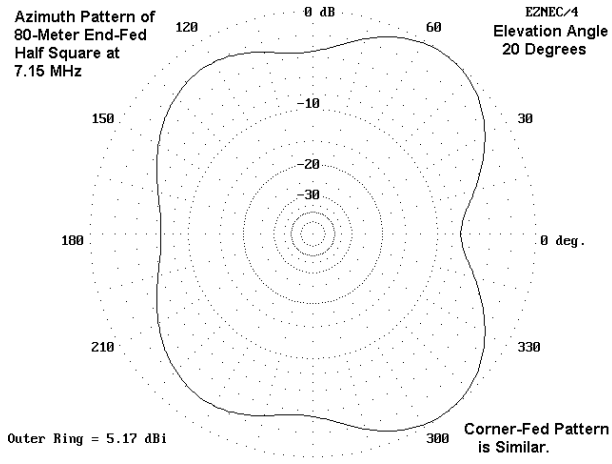

Figure 8—End-fed 80-meter half-square azimuth pattern on 40 meters. The center-fed pattern is similar.

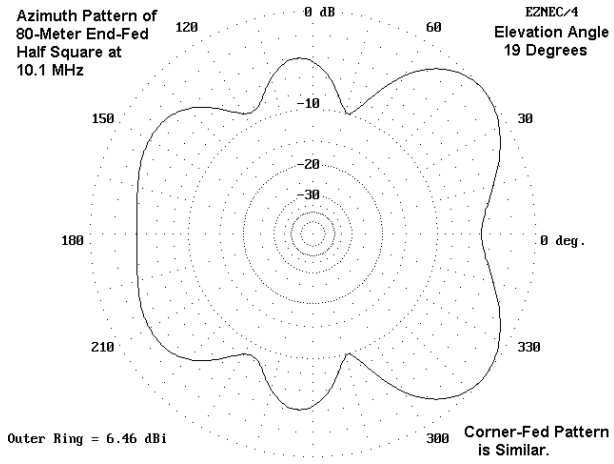

Figure 9—End-fed 80-meter half-square azimuth pattern on 30 meters. The center-fed pattern is similar.

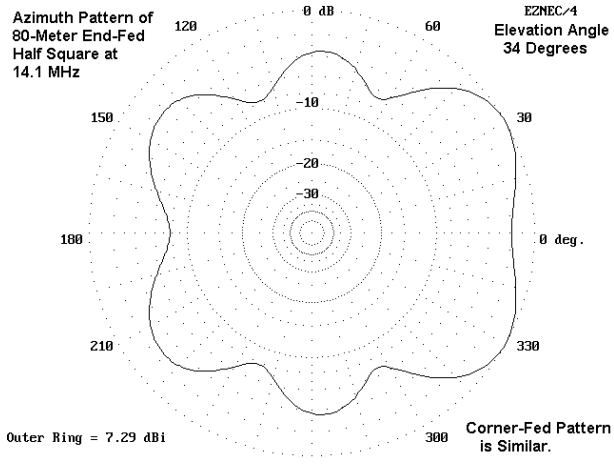

Figure 10—End-fed 80-meter half-square azimuth pattern on 20 meters. The center-fed pattern is similar.

discover that there is no significant difference in the patterns. The slight differences in gain, as well as angles of interest, result from one or the other system yielding larger or smaller "bulges" in the pattern in various directions. The chief differences between the two feed points show up in the anticipated feed-point impedances.

On 40 meters, the pattern is roughly square for both feed systems, as is evident from **Figure 8**. Maximum gain is toward the corners most distant from the feed-point. In contrast, an 80-meter dipole would become something close to a full wavelength on 40, producing a strong bidirectional pattern approaching 9 dBi if the antenna is a $^1/_2$-λ up on 40 meters. The half-square substitutes coverage for gain.

The patterns for the 80-meter half-square on 30 and 20 meters are not too different from each other, as **Figure 9** and **Figure 10** make evident. The square becomes elongated, with further gain in the most favored directions. 20-meter use shows the disadvantage of a high-angle main lobe, although the lobe is very broad vertically. The feed-point impedances for both bands require the use of a tuner with a considerable range of adjustment.

The patterns are certainly not those favored for DXing. However, they offer the contester and the general operator some advantages in coverage not offered by highly directional (including highly bidirectional) antennas. However, in some applications, the antenna tuner settings will be very sharp and require readjustment with small frequency excursions.

Although the half-square can be pressed into multiband service, its principle use remains as a vertically polarized low-angle low-gain antenna that offers a fairly high signal-to-noise ratio for DX signals. Of the SCVs surveyed, it shows the strongest preference to be mounted as low as the structure permits for maximum gain over most soil types. However, a maximum gain 80-meter model would top out in the 90 to 100-ft level, while a 40-meter model also designed and installed for maximum gain would need to be 50 to 60 ft high. Except over very poor soil, further increases in height will likely not yield superior performance overall, when we combine considerations of both gain and the elevation angle of maximum radiation.

Moreover, unless one needs only a bi-directional pattern, full coverage may require two half-squares at right angles to each other. However, with a little remote switching, it is possible to design the right angle array with a common feed vertical and to detune the unused wires. Of course, having the land on which to install such a system is a prior necessity.

So far in this series, I have not attempted to compare the various types of SCVs—although I have compared SCVs within each type. Because each type of SCV has its own installation requirements, "better" and "worse" become complex terms that measure not only the performance and feed-point figures for the antennas, but as well, all of the mechanical properties and their relationship to the prospective user's land. Nevertheless, the prospective SCV user should remember that these antennas as a class are not general-purpose antennas. Rather, when installed within the limits suggested for each type within the class, they provide low-gain, low-angle radiation free from higher lobes and thus forming a natural filter against QRM and QRN from closer sources. In some cases, users may want them for receiving purposes only and use a dipole or similar antenna for transmitting (in which application high angle QRM and QRN are not relevant).

Installing SCVs too high, especially half-squares, can easily defeat the main functional advantage of the antennas. Designing them for 20 meters is a marginal enterprise, and above 20 meters, other antenna types will normally out-perform the SCVs. The SCVs do come into their own again until the VHF region, where they can be mounted many wavelengths above ground and their largely vertical polarization combined with a

beamwidth of around 60 degrees may be superior in some applications to Yagis turned on their side.

Except for these very general comments, I have avoided comparisons with other types of antennas. Although a thorough comparison would be useful, the amount of material there is to present on SCVs and the shortage of space within which to present it suggests that this must be (as they sometimes say in textbooks) "an exercise left to the reader."

In fact, there are a number of directly related SCV questions left to look at. Some hams have built shrunken SCVs. Others have built double-wides (for example, the double-humped delta, the open double magnetic slot, and the bobtail curtain). Still others have managed some reversible SCV beams. We should take at least a brief look at each of these ideas in one last installment.

Notes

[1]The half-square antenna actually appeared after its larger sibling, the bobtail curtain. See Ben Vester, K3BC, "The Half Square Antenna," *QST* (March, 1974), pp 11-14. Additional notice appeared in *Radio Communications* for January, 1977 (p 36). See also Robert Schiers, N0AN, "The Half-Square Antenna," *Ham Radio* (December, 1981), pp 48-50. All three of these early sources show the antenna as voltage-fed from one of the free ends. For the bobtail curtain, see Woodrow Smith, W6BCX, "Bet My Money on the Bobtail Beam," *CQ* (March, 1948), pp 21-23 and 92-95. See also Smith follow-up articles, "The Bobtail Curtain and Inverted Ground Plane," Parts 1 and 2 in *Ham Radio* (February, 1983), pp 82-86, and (March, 1983), pp 28-30. See also John Devoldere, ON4UN, *Antennas and Techniques for Low-Band DXing*, 2nd Ed. (Newington: ARRL, 1994), Chapter 12, "Other Arrays."

[2]VHF half-square designs will appear in a forthcoming issue of *Communications Quarterly*. Unfortunately, some half-square users have oversold the antenna, especially for upper HF use. See, for example, Hannes Coetzee, ZS6BZP, "A Visit to the Half Square Antenna," *Communications Quarterly* (Spring, 1998), 83-90. At normal heights ($^1/_2$-λ or more), a dipole will usually outperform the half-square on the upper HF bands. Its use on the lower bands is, in concert with the other SCVs, to sacrifice gain for a low-angle bi-directional elevation pattern that suppresses high-angle QRM and QRN. Its most apt application is where elevating a horizontal antenna in its entirety above $^1/_2$-λ is not feasible.

[3]If expressed as a ratio of vertical to horizontal dimensions, the ratio is 0.62:1. Allowing for wire thickness effects, this is the Fibonacci constant:

$$k_f = \frac{\sqrt{5}-1}{2}$$

(This equation yields a value of about 0.618034, which also yields an inverse ratio of about 1.618034. The numbers are decimally longer for those addicted to transcendental numbers). The reference to Fibonacci is incidental in this context; the basic ratio for the half-square holds up at least throughout the HF region.

[4]See, for instance, Joe Everhart, N2CX, "End-Fed Half-Wave Antennas," *QRPp* (Spring, 1998), pp 11-15. ■

Using Less-Common Propagation Modes to Work Multipliers—Part 1

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This is the first of a multi-part series devoted to understanding how to use those not so common propagation modes to enhance your contest scores. The NCJ *is proud to have Carl authoring this level of educational material to help our readers—old-timers and newbies alike—become more accomplished contesters.—K7BV*

It is not unusual to see a contest narrative describing the thrill of running stations at a high rate. The high rate really gets the adrenaline flowing, and it is understandable why it is looked on as the highlight of a contest.

But what's equally important in a serious contest effort, though many times treated as less glamorous, is finding and working new multipliers. Without a serious effort to work multipliers, the final score usually will not be competitive.

In this series we'll take a look at three less-common modes of propagation that may allow you to work multipliers that you might otherwise miss. The first is auroral-E, and is discussed in this article. The other two are scatter and long path, and will be discussed in future articles.

As the name implies, auroral-E is a propagation mode involving the auroral oval at E-region heights. One of the most often-reported auroral-E paths is the path from the US Midwest to the Scandinavian countries. This path occurs when it may not even be possible to work farther-south European countries.

For example, in an *NCJ* issue a couple years ago, W9XT cited an over-the-pole opening to SM/LA/OH (Sweden/Norway/Finland) on 10 meters and 15 meters in the mid to late afternoons from the upper Midwest. He went on to say that he has worked these countries when it was not even possible to work southern Europe via the regular paths earlier in the day. Just recently, KZ5MM mentioned this same path in his Nov/Dec 1998 *NCJ* article *The World's Toughest Radio Contest.*

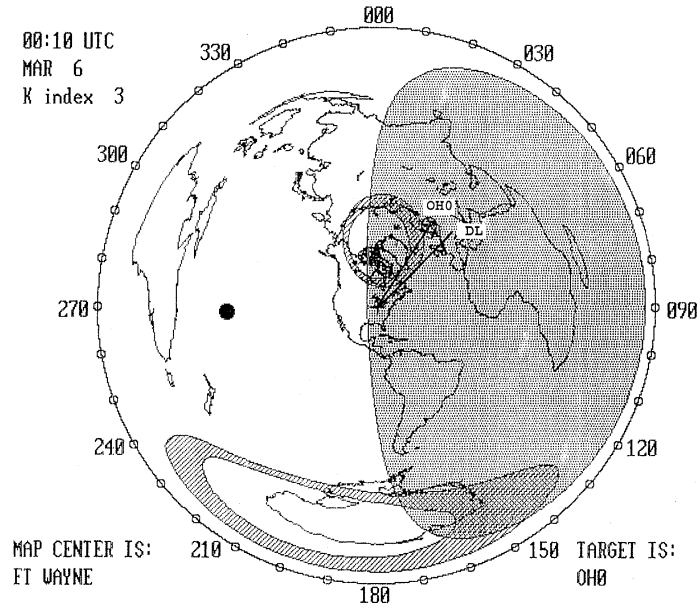

Figure 1—Ft Wayne to OH0 and DL with Auroral Oval.

I have also had first-hand experience with this path. In the Phone weekend of the ARRL International DX Contest in March 1993, I was a single-operator single band 15-meter entry. My first QSO of the contest, at 0001 UTC (7:01 PM local time), was with OH1EH/OH0. From then on until the band closed at about 0300 UTC (10 PM local time), I worked many Caribbean and South American stations, several Pacific stations and many JA stations. But conspicuous by their absence were any other European stations, especially those farther south of OH0.

To help us understand what makes this path available, let's look at some research done by two fellow amateurs—Bob Rose, K6GKU, and Bob Hunsucker, AB7VP (ex KL7CYS). Their paper—titled *Auroral-E Observations: The First Year's Data*—details a year-long study of auroral-E propagation from August 15, 1991 to August 16, 1992.

Their transmitter was located at Cape Prince of Wales, Alaska, and provided 100 W to a half-wave dipole. The signal was a slow Morse "R", and was continuous for 24 hours a day. The receiver was located in Fairbanks and continuously monitored the transmitter frequency. The distance of the east-west path between Cape Prince of Wales and Fairbanks is 960 km, which is about half the maximum distance that can be covered with one E-region hop. The frequency of operation was 25.545 MHz. This was chosen to indicate when the E-region critical frequency rose above about 5.0 MHz at the E-region midpoint (the E-region M-factor for a 1000 km path is about 5).

With one full year of data, several interesting and important characteristics of auroral-E propagation were learned. It is predominantly a nighttime phenomenon. It occurs for several hours (not continuously). It is centered on the local midnight portion of the oval (that portion of the oval at local midnight) for fall, winter and spring, and shifts to that portion of the oval around 3 AM local time in the summer. For propagation to take place, the K-index must be of the proper value to extend the auroral oval over the transmission path. When this does happen, the overall likelihood of auroral-E occurrence is 50%.

Most auroral-E events are short-lived phenomenon. Of the 1445 observations (number of times the Cape Prince of Wales transmission was received in Fairbanks), 68% had a duration equal to or less than 10 minutes, 16% had a duration between 11 and 20 minutes, and 6% had a duration between 21 and 30 minutes. The remaining 10% had

durations between 31 minutes and a little over 2 hours. Auroral-E occurs on 75% of the days during months containing equinoxes, about 60% of the time during the summer and only 35% of the time during the winter.

To summarize the above, we could expect 15-meter propagation (and perhaps even 10-meter propagation) up to about 2000 km on a path that goes tangentially through the nighttime part of the auroral oval. Propagation would occur on about 50% of the days of the month.

Figure 1 is an azimuthal equidistant map centered on Ft Wayne (the cross symbol in the center) for the month of March (my ARRL Phone QSO) and a K-index of 3. It has both the OH0 and DL paths from Ft Wayne (straight lines) plotted on it. It also has the southern auroral oval on it—it appears very big only because of how azimuthal equidistant maps project at their outer perimeter.

What's important to note is that the auroral oval extends over the Ft Wayne-to-OH0 path, but does not extend over the Ft Wayne-to-DL path. With some calculations with respect to time zones, the portion of the oval within a couple hours before and after local midnight hits the Ft Wayne-to-OH0 path about 2500 to 6000 km out of Ft Wayne. And with some further analysis, it can be shown that this range of distance is where the conventional F-region MUF is not high enough to support propagation.

Thus, what makes this path work is auroral-E propagation. The first half of the path is probably covered with an F-region hop, then followed with two auroral-E hops to get to OH0. Since the auroral oval does not extend over the DL end of the path, there is no propagation from Ft Wayne to DL.

What about W9XT's comment about mid to late afternoon QSOs? Isn't that kind of early compared to my 7 PM QSO? Digging deeper into the Rose and Hunsucker paper one finds that the probability of occurrence of auroral-E versus time is somewhat of a normal distribution. The tails extend for 5 to 6 hours to either side of the time of peak occurrence (local midnight of the auroral oval for most of the months). Thus mid afternoon in the Midwest is not out of the picture, just at a reduced probability.

So during the next contest, swing your beam between north and northeast in the late afternoon and early evening hours—you may be rewarded with a multiplier on 15 m and 10 meters that your competition wasn't even looking for. ■

NCJ Profiles: The Geezer Tells a Story—Mark Beckwith, N5OT

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Mark, N5OT (ex-WA6OTU), or "The Geezer," as he's known to some of his friends, currently hails from Oklahoma and has been a fixture on the contest scene since a young squirt, hitching rides to Field Day. Along the way, he's rubbed elbows and shared operating chairs with some of the best. He also spins a pretty good line—pull up a footstool and read along!

"When I was 11 years old, I loved tuning my parents' antenna-less console radio on 'SW' (whatever that was). One of the few signals I could copy really well was this guy who would say 'the name here is Dave and I'm in Altadena.' It was captivating! I asked my mom what this was and she said it was probably this guy Dave Bell at our church who was a 'Ham Operator' (whatever that is)."

"Well, the very next Sunday at church you can imagine the scene—all eleven-years-old of me walked right up to Mr. Dave Bell and asked what he had been doing on the day and time when I was listening on the radio. That afternoon we went over to the Bell's and Dave invited me into his 'shack' and put me on the radio during an opening to the South Pacific. Any more questions?"

Gee, this sounds awfully familiar, doesn't it?

"Many of us share the same lost story from our childhoods. Although the standard route into ham radio has changed a lot, I believe we can fix what's broken with ham radio by going back to this proven winner."

I agree with Mark—there's lots in ham radio to kindle that special feeling of magic in a youngster just leaving the world of toys for that long acceleration down the runway to adulthood.

Mark's entry into contesting more or less coincides with the genesis of the Southern California Contest Club, or *SCCC* to the impatient. The SCCC is one of the most dynamic contest groups in the United States, keeping the competitive flame burning out west when Europe seems oh, so far away, and the Pacific Ocean oh, so wide.

"In 1976, one of my Elmers, Pete, now W0RTT, had a huge party at his home. There were about 75 hams present. They became the founding members of the SCCC. The club's goal in those days was to meet for food and drink and spin yarns. What a splendid club it was! Where else could I go and sit down every month or two with five or six CQWW top-tenners in the same place at the same time? I learned a LOT."

N5OT: "This was the coolest day of my life, using Tree's software to pilot HC8U to 5th in the world in the 1989 Worldwide , with no 15 meter antenna."

Mark has been active at many of the best-known contest stations, W6AQ, W6UE, W6RTT, K6RR, AI6V, N6ND, W6EEN, N6NB, AA6TT/0, KC1XX, XE2SI, 4A2MX, HC8U and KH6/N6VI. "Doing CQWW from XE2SI was a kick because the likes of N6TR, N6AA, N6ZZ, N6TJ and K6NA were the band captains. We did this from Tijuana—Field Day style—in 1983, 1984 and 1986. One year we came in 2nd in the world!" N5OT-as-guest-op has also been observed within the "top boxes" of NA Sprint, CQWW Single-Op, Sweepstakes, ARRL DX, and NAQP.

Once upon a time, our subject lived in a hotbed of contesting activity. Now he does not. I suspect some differences were found out on the red plains of Oklahoma. "Well, a new contester probably has a couple month's work to sort out the contest community in Southern California. I think it took about 30 minutes of studying my recent logs to figure out who the movers and shakers were in Oklahoma. I am lucky that one of the other 'Most Serious Guys' in the state happens to be in my town, so we hit it off real well from the start."

"I am looking forward to finding out what it's like to be an actual 'rare' multiplier in the ARRL DX—I am sure it is harder for the JAs to get Oklahoma into their logs than California. I don't know about Sweepstakes—from here, I am closer to everyone but they're not all in one direction where you can set your beam and forget it. In an NAQP from home I made over 700 QSOs just goofing off, which made me think being here might have some real potential. I'm currently using just a trap vertical, some random wires and a TS-850, but future plans involve a couple towers, bigger antennas and a second radio. In CQWW, I think I will continue to travel as Oklahoma doesn't seem to offer much opportunity for victory in DX contests."

After a term as Chairman of the ARRL Contest Advisory Committee, Mark returned to the basics. "I had a revelation a few years back that I should quit worrying so much about the state of the hobby and just get on the air and have fun. So far, this works great. None of what is wrong with contesting is enough to keep someone from having fun. If that's the goal, then the ARRL is doing things right. I think the CQWW and Sprints are better measurements of an operator's skill, because the results carry more credibility. I think credibility of results is the biggest issue today, and I am glad to see momentum in this direction at the League."

"The neat thing about contesting is the amount of flexibility to push the envelope. Even today, new ideas can still win contests. It is a big mistake to limit ingenuity with things like 10-minute rules. Shoot, you've got at least two hams in the same room—they each own a radio, right? They should USE 'em. It is a bad idea for sponsors to cater to the lowest common denominator."

"The other thing which gets me really fired up about contests is the opportunity to travel and experience different cultures. Ham radio is such a connective thread that crosses all the lines—when you travel

to operate you also get a soulful experience you'd never get as a tourist."

"The really good news is that Tree, N6TR, and the Boring Amateur Radio Club have sponsored a great event for showing kids ham radio. For the first time in probably 15 years, vast numbers of children are getting to have that magical experience. I had Wes, a 10-year-old boy from my church, over for Kids' Day in January and I am thinking he is hooked for life. Now I need to get a short-wave receiver into his bedroom."

Things have changed a lot since young WN6OTU passed his Novice exam under the tutelage of Mr. Bell from church in 1971. But could it be a case of "the more things change, the more they remain the same?"

"My Elmer Emeritus is Dave Bell, W6AQ. He and another ham at the church (Don, K6UJX) collected enough boat-anchors (and a few crystals) to get me on the air. I spent my entire Novice life on 40 meters. By the time I upgraded to a voice license, I had a lifetime preference for CW. When I upgraded Dave lent me his Cosmophone 35—the very rig which now sits in the ARRL Museum—and I got my first taste of Europe on 20 meters."

"Another is N6TR—I met Tree while traffic handling in 1973. He's a couple years older than me (I think he could actually drive at the time!). He invited me to operate Field Day with the serious gang at WA6LXN and hooked me up with Dave, AA6RX, to bring me out. That weekend was the beginning of a very long and very special relationship for the three of us, which continues to this day."

"Tree has always been the ring leader, seemingly able to make more QSOs than either of us even while sleeping. We have operated together over 25 years of being pals. Other contesters who have taught me a thing or two include Dick, N6AA; Phil, N6ZZ; Jim, N6TJ; Glenn K6NA; and Marty, N6VI. We are all still in touch and wind up sitting in the same chairs from time to time."

A duty that all contesters should feel obligated to discharge is to extend a helping hand to someone just starting out in ham radio. If we're going to keep contesting dynamic and alive, there's no better way than to take the time to undertake the second-oldest part of the ham radio hobby—being an Elmer. "Dave Bell recently asked me to make sure I Elmer at least one other ham as fanatic as myself. I keep my eyes open for younger guys who need a good kick in the butt. I invite them along to various contest operations, then set them up with big station owners. I am proud of their accomplishments."

"Being an Elmer is simple. Get a short-wave receiver into the hands of an impressionable youngster. It worked for me and just about every other ham my age who's been licensed since before he could drive. It's gonna work for Wes. There IS hope for the future of real ham radio." ■

NCJ Reviews: *WriteLog* for *Windows* Logging Software

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I "discovered" *WriteLog* in September 1997 when I posted a message on the contest reflector asking for information on software packages that would enable me to work RTTY using my computer's sound card. The choices included a variety of *DOS* packages that all had proven track records—but with a higher price tag than I really wanted to pay just to try out a new mode.

I work for a software company that develops industrial automation software for *Windows NT*. I spend all of my computer time at work and at home in the *Windows 98* or *Windows NT* environments. Why should I go back to *DOS* for contest logging? *WriteLog* advertised itself as a true *Windows* package so I ordered a copy.

I had actually seen *WriteLog* once before back in 1991 or so. The program's author, Wayne Wright, W5XD, had sent me a copy of his package for logging in *Windows 3.1*. It had some interesting features, but was in no way competitive with the *DOS* packages of the time (mostly because of the limitations of *Windows 3.1*). Seeing it 7 years later, I couldn't believe how far it has come.

Despite the years of work Wayne put into the package, *WriteLog* had not received much visibility in the contest community. Logging is a very emotional subject, and people are not willing to take many risks. Several years ago, RTTY contester K5DJ saw *WriteLog* and asked Wayne to add support specifically for RTTY. As Ron started winning RTTY contests using *WriteLog*, it developed quite a following among RTTY contesters and Wayne committed to continuing the development. The result is a package, which is full-featured, extremely robust and competitively priced.

My RTTY Experience

My first attempt at RTTY and *WriteLog* was the CQWW RTTY Contest in September 1997. I only needed a trip to RadioShack to get the necessary cables to connect from the Soundblaster card in my computer to the radio's mike input and audio output. It took just a few minutes to get set up running AFSK and I was making QSOs. It was a thrill to be a novice contester again. The QSOs came slowly, but I was learning something new with each one. Prior to this, my entire RTTY career may have been 50 QSOs helping out at contest multiops.

I remember being totally confused when stations would send their exchange as TOOQWP. Yikes! Turns out, you just look for the number on the keyboard just above the letter and you can convert from the letter to the associated number (something about old TTY units and pressing the shift key…TOOQWP is 599120).

At first, RTTY contesting is a little

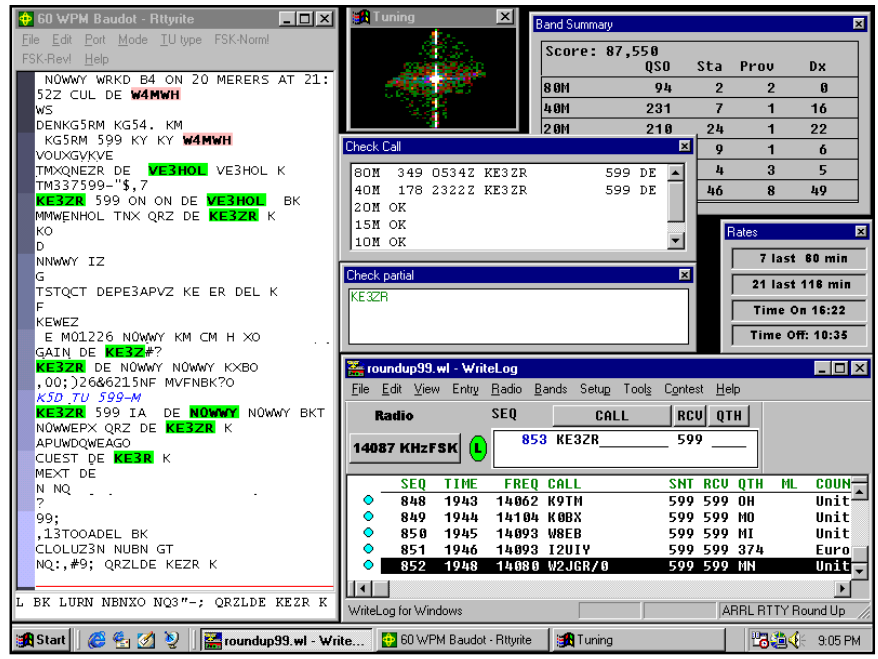

Figure 1—Example of *WriteLog* screen used during ARRL RTTY Roundup. Calls that appear in the RTTY window are color-coded—red for dupe, green for good, and yellow for multiplier.

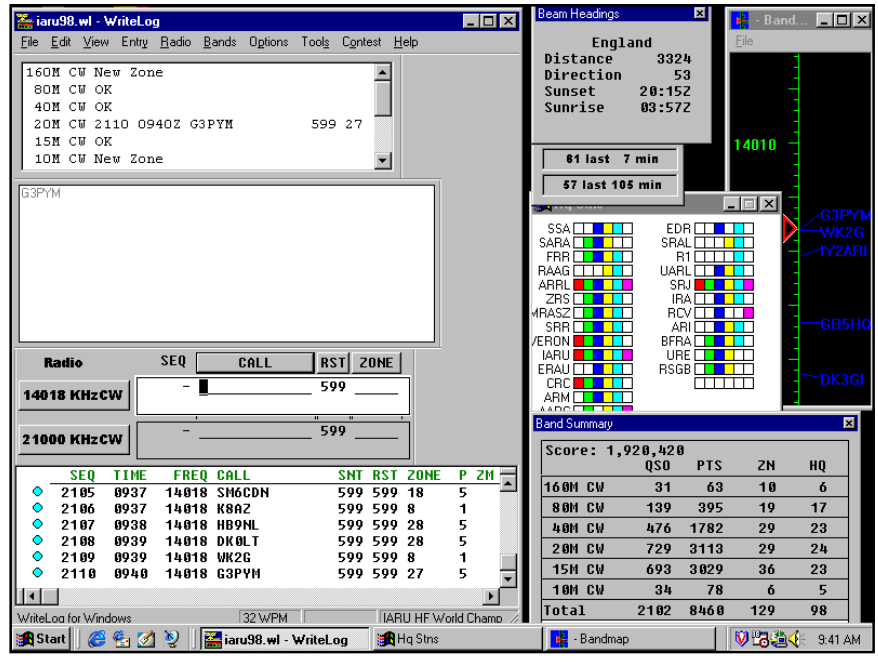

Figure 2—Example *WriteLog* screen used in IARU HF Championship. The band map can be seen along the right edge of the screen.

frustrating for a CW operator. You have to tune the station in before you start getting useful information. On CW, I start copying letters as soon as the signal enters the passband. This made search and pounce operation in RTTY a bit more difficult, but I quickly learned how to get right on the proper tones to start "printing." *WriteLog* includes a tuning scope window that really helps with getting on frequency.

RTTY contesting is fun in that you see the information flow on to the screen. *WriteLog* automatically color codes new calls that it sees in the text—green for new QSOs and yellow for new multipliers. To work someone, you just click on their call, which fills it into the logging window. Then click on their exchange info and it is automatically entered into the exchange field.

RTTY is much more than just point and shoot. There is still a bit of skill required. The HF bands are filled with QRM, QSB and noise, so not every station prints perfectly all the time. All of your skills at detecting call signs are just as valuable in RTTY as they are on CW and phone. *WriteLog* supports the same super check partial databases that are available for *CT* and *NA*, as well as its own specialized one for RTTY. There is also a "friend" mode for those of you who like to say hello by name during your exchanges.

Pileups are a combination of brute force and timing. RTTY tends to only capture and print one signal at a time. If several callers are on the same frequency, all you see on the screen is garbage. It is kind of like a big Sunday afternoon African pileup on SSB mixed with the capture effect of 2-meter FM. The really good ops seem to have a knack for putting their call right in the spaces.

WriteLog supports all of the major RTTY contests. It also supports a wide variety of FSK terminal units. FSK is the choice of serious RTTY operators, but I have found that *WriteLog* does a very competitive job copying in AFSK mode—especially if you can narrow down the audio passband of your receiver. *WriteLog* has two copying modes—a narrow band mode and a wide band mode. By displaying both of them simultaneously, you can often copy part of a transmission in one mode and another part in the other. W5XD has an advanced degree in signal processing and it is simply amazing what he can make the Soundblaster card do. I have seen clear print on a station that I could not even hear among the QRM.

CW Logging

WriteLog's user interface has improved dramatically over the past year. As a result, I found myself using *WriteLog* in a number of smaller contests. It was while CQing on CW in a relatively dead band in the ARRL 10-Meter Contest that I discovered one of the fun things about logging in *Windows*—I started using other programs at the same time! I could do some writing or other work and then just **ALT-TAB** over to *WriteLog* to log a QSO. I really became a convert when I had the auto repeat CQ going and simultaneously dialed my Internet Service Provider and downloaded my e-mail. Even with all the serial port activity to the modem, the CW sending from *WriteLog* was perfect.

The *WriteLog* user interface for CW is similar to *CT* and *NA*. You can assign predefined messages to any of the function keys. There are a number of custom codes that can be inserted in messages to automatically send calls, pieces of the exchange or handle dupes. The insert and enter keys will automatically send the call plus exchange or QSL messages. You can program the CW speed to change within the message to make those fancy sounds that are all the rage among contest expeditions today.

WriteLog allows you to preprogram up to 20 different sending speeds. The **ALT-F9** key moves down the list of speeds while **ALT-F10** moves up. I set my system up to change by 1 WPM in the 30-34 WPM range, and then go to 2 WPM jumps for the rest. Sending speed can range from 5 to 60 WPM. You can also adjust the CW weighting.

The keying interface from the parallel and serial ports is identical to that used by *CT* so I was able to use my W1WEF interfaces without modification. *WriteLog* can send CW through the LPT and COM ports in *Windows 95* or *98*, but only through the COM ports for *Windows NT 4.0*. My work laptop only has *NT* installed, so there is no way I can run any of the *DOS* packages on it, but *WriteLog* works just fine. W5XD has designed an external keying circuit that will also allow the keyer paddles to be connected into the computer.

WriteLog is very efficient in its use of computer resources. I run it on an AMD K5-133 processor with 64 MB of RAM and *Windows 98*. A pretty basic machine by today's standards. Even with several thousand QSOs in the log, the super check partial comes up quickly. I often catch a mistake and change it in the logging window while the call is still being sent. If the changed letters have not yet gone out, *WriteLog* will send the corrected letters.

Phone Capabilities

Much of the functionality described in RTTY and CW is also available for phone of course. *WriteLog* supports the W9XT voice keyer card but it does not support the DVP board available from LZ Engineering.

DVP support isn't really missed since the sound card can duplicate many of the same functions. Messages can be recorded and edited using any *Windows* WAV recorder or editor, or you can record messages on the fly from within *WriteLog*. Letter and number combinations can be prerecorded so that *WriteLog* can send call signs and exchange serial numbers for you. The same cables I purchased for working AFSK RTTY can also be used for SSB contesting. You may need some inexpensive 1:1 audio transformers (available from RadioShack and others) to prevent ground loops causing hum on your transmitted audio.

Two Radio Support

WriteLog has excellent support for two-radio operation in all three modes. Users can configure separate logging windows for each radio—an interface that I find far superior to the *DOS* packages. I can start an auto-repeat CQ in logging window 1, and still check calls in logging window 2. Each logging window can have its own band map as well. This is really helpful for the assisted operator who is chasing multipliers on the second band. All packet spots can be automatically included in the band maps plus you can manually enter your own.

For RTTY operation, *WriteLog* is powerful enough to simultaneously decode two audio streams through the sound card. Imagine having two logging windows, band maps, and RTTY copying windows running and visible at the same time. Lockouts built into the software handle the problem of transmitting on more than one band at a time. K5DJ uses the multiple monitor feature of *Windows 98* to drive a separate screen for each radio!

On SSB, you can wire the left and right audio channels to different radios and *WriteLog* will handle all of the audio switching as you move between the logging windows. Here too, the ability to CQ on one band while checking calls on another is a real score builder.

WriteLog toggles pins on the parallel port for controlling external peripherals and antenna switching. The pin outs are fairly compatible with the other contest logging packages so you should have no trouble converting over. Software menu entries allow you to select which window is the right hand radio and which is the left. It is actually possible to have four separate logging windows but I find I am limited by the number of ears that I have!

WriteLog has excellent support for connection to the popular contest radios. I counted entries for 17 different ICOM radios, JRC, all Kenwood rigs, the three

most popular Ten-Tec rigs and 7 different Yaesu radios. Radios can be connected to up to four COM ports.

Multiops and Networking

I have not personally used *WriteLog* in a multiop or networked situation. However, reports from KV1W and from K5DJ are that it is pretty slick. All networking is handled using standard Ethernet connections between the computers and NetBEUI protocol. Ethernet cards and cables are cheap and NetBEUI is a standard built into every version of *Windows*. The network can be any mix of computers running *95*, *98*, and *NT*.

WriteLog minimizes the impact of computer or network failures by allowing individual computers to join or leave the network at any time. If a station goes down, it recovers its local copy of the log first before rejoining the network. It then exchanges copies of the entire log with the rest of the network so there is no need to later merge the various logs if stations fail to stay on the network for the entire contest. Don't worry, performance is such that the operators on the other computers don't even see this happening. *WriteLog* claims it can handle 500 network updates per second!

Passing information between stations is a big part of any multiop. A gab function allows you to send a message to all stations in a pop-up window. The real-time frequency of every station can also be presented in a window. Of course the packet information is also passed across the network and each operator can elect to see spots from all bands or only the current band.

According to WS7I, *WriteLog* has the best support for directed telnet access to PacketCluster systems that may be on the Internet. For the contests that allow Internet access to spots, this makes it easy. You simply connect to your local service provider and then telnet to the appropriate host. Any time the host sends out a spot, it will automatically show up in the packet window and band map. More details are provided in the support area of the *WriteLog* Web site.

Supported Contests

WriteLog currently handles 37 different contests plus a general purpose DXpedition mode. All of the major RTTY, HF and VHF contests are covered. The two largest state QSO Parties, California and Pennsylvania, are included with support for both in and out of state entrants. The *NCJ*'s NAQP and NA Sprint contests are provided. Even the Stew Perry Top Band Distance Challenge with its grid based scoring in real-time is included. While I use *WriteLog* just for contest logging, several users have reported that the DXpedition mode makes a very good general-purpose logger including the WARC bands.

File Formats

All of the files needed for submission of contest logs can be quickly generated. The use of *Windows* RTF format files provides beautiful looking summary and log sheets. I have had no problems with any contest sponsor accepting the RTF format or text format log files generated by the program. *WriteLog* has its own native log file format, but data can be exported to a variety of formats including ASCII text, WK1 spreadsheet, comma separated variable, and ADIF.

The CTY files generated by AD1C can be imported for use in *WriteLog*. The multiplier files can be easily edited for building custom contests.

Final Comments

WriteLog has so many features it is impossible to list them all. Windows for scoring, multiplier display, rate graphs, check call, check country, rate display, on/off time calculation and many more are available. Placement of windows on the screen is completely up to the user. I found it took me a few hours of operation to adjust to the differences between the *Windows* environment and what I had been used to in *DOS*.

My only complaint about *WriteLog* is the lack of post contest statistics information. There is no hourly breakdown or count of QSOs/multiplier that are most useful for analysis after the contest. KV1W has used the WK1 file format to import log data in *Excel* and then use pivot tables for generating this information. I just don't want to work that hard!

WriteLog has a generally good on-line help file. There is no printed document available, but this is the trend in the software industry. Considering the programmer is the guy also writing the help, you can generally find the answers to all of your questions. I have found K5DJ to be quick in responding to technical support requests. There is also an Internet mailing list of users who are very helpful.

I have now used *WriteLog* in a full year's worth of very competitive CW and RTTY contests. Not once has the program crashed during operation. When you consider the number of features and complexity inherent in good *Windows* software, this is a powerful testimony to W5XD's programming skills. Wayne has also been very agreeable to accepting suggestions from users and seems to generate a new and improved version every month or so. Minor version updates are available for free download from the Web site.

I recommend *WriteLog* without hesitation. *WriteLog* has satisfied virtually all of my contest logging requirements. The ability to handle all three contesting modes without the need to buy lots of extra hardware is an added bonus.

WriteLog is available from Ron Stailey, K5DJ, 504 Dove Haven Drive, Round Rock, TX 78664. Telephone (512) 255-5000 (8 AM to 9 PM CST). E-mail: **k5dj@contesting.com**. Web: **http://www.contesting.com/writelog**. Price is $75. ■

Where Are They Now?

Tom Taormina, K5RC
TomK5RC@aol.com

K5RC

This column has been running for over a year now (since November/December 1997). In that time, we have run five full-length essays on well-known contesters (past and present), four abbreviated profiles and one photo essay. Last April, I presented the complete photo essay to the assembled masses at the International DX Convention in Visalia. In this edition, I believe that it is now appropriate to assess what we may have learned and where we are going.

The stated purpose of the column is to find out: (1) Why some contesters stay competitive year after year; (2) Why some move from "competitor" to "participant" status and; (3) Why some flameout and disappear from the scene.

You can certainly draw your own conclusions from the nine published reports. This month I will share the conclusions that I have reached to date. These are not only based on those earlier reports, but also on the dozens of phone, e-mail and in-person interviews I have conducted since starting this project. Please keep in mind that my conclusions are more pragmatism than science and that I have become active and reasonably competitive in the last year, after a 12-year hiatus from serious contesting. There is one more factor in my bias—my theory that sunspots breed optimism. It is much easier to put an optimistic spin on the ball when 10 meters is open again!

In the first category, I place folks like N6RO, K5ZD, K6NA, W3LPL, K6LL and W5WMU. They stay active and competitive year in and year out, sunspots or no sunspots. As I searched for a common denominator, the only one that jumped out is that they have competition in their blood. That is, they are naturally competitive individuals and they make the best of whatever El Sol and their business and family lives throw at them. Many of them have been through career changes, geographic relocations and family evolutions, yet they manage to retain their competitive drive and their ability to place in the top ten. They also understand that excellence in radio contesting takes years and years of practice and steady refinement of techniques and equipment. They are willing to do that while continuing to raise their goals or move to different arenas of competition to keep their interest peaked. In the case of N6RO and W3LPL, not only do they stay competitive, but also they spend endless hours maintaining world-class stations. They budget a large number of non-contest weekends to a relentless fight with the elements. From experience, not only does that have a toll on the family budget, but on the emotions—waking up to scrap aluminum where a Yagi was the night before, antenna wire tangled in trees, open feedlines, stuck rotors and switch boxes that don't... As if maintenance is not enough, we are, of course, never satisfied with what we have in the air. There is always a need for one more antenna, or another Beverage or a different stack configuration. Inside the shack, there are always new radios and accessories that are just begging from the catalog pages. As a long time SO (Station Owner), I know that these competitors will sacrifice a new car for some station necessity to help their competitive position or that of their guest ops. For those of you who fall in this stalwart category, I salute you. For those of you who want to learn how to stay energized, I suggest you visit with one of these folks and see if some of the drive rubs off. It may be that you have to be born with the relentless energy it takes to be competitive for decades, but it couldn't hurt to get close to those who know how to do it and pick up a few pointers.

I am most familiar with the second group, competitors who have dropped from the Top Ten, yet they still remain seasonally active in contesting. This group is the easiest to understand and were the most clear on their priority shifts as I interviewed them. As with the first group, they are extremely competitive. The difference is that when family and business priorities change, contesting takes a greater or lesser role in their lives. Many who are top contesters are also highly charged in their business lives. Many have had to put competitive contesting aside to tend to highly demanding careers. Others have had to spend more time with their family situations than they may have in the past. Some have moved to locations where towers are prohibited and there is no easy access to a competitive station. Still others have developed diverse interests in other competitive areas, whereas 20 years ago they may have considered radio contesting a more intriguing avocation. Some say their interest follows the sunspots. "If it is not possible to set a new record, why put the energy into a contest that will yield a lesser score than the year before?" A few gave hope that, once the kids got out of college, they would be back among us.

For a few, personal tragedy has put a damper on their competitiveness. Some have medical issues to contend with and that appears to others as a lack of interest in contesting. This was recently demonstrated to the extreme in the untimely passing of K5MM.

One theory I have heard offered is the "large number of ham radio divorces." Of all of these I have witnessed, ham radio and contesting are seldom core issues, so I cross that myth off my list of why contesters lose interest.

There are two other reasons I have been told that have to do directly with contesting. One is the so-called decline in ethics and the other is the downward trend and lack of new blood in contesting and the decline of ham radio in general. I'd like to defer commenting on these issues until my summary.

The final group that I sought out is those who have dropped from sight after being on top of the hill for some period of time. These were the most elusive. After all, if they are not active in contesting, they probably do not want to be interviewed by someone writing a column about contesting. A number of these folks I was able to locate did suffer personal or professional tragedies and they have (rightly) placed all of their energy where it is needed. Some became disillusioned when the sunspots fell or after they had achieved their personal goals. Others are so obsessive-compulsive that they have topped out in contesting and have found other competitive arenas that consume all of their energies. Some of these also report losing interest in a "dying" hobby. I am still curious about some of the "overnight wonders" that have come and gone. I haven't yet found any of these competitors to see just what makes them tick, but stay tuned...

So what have we learned? If we learn from the stalwarts, then contesting has to be in your blood and can never be

diluted. If we follow the large group who has had changes in priority, contesting is worth doing, even if you can't put in the full 48 hours any more. If we listen to the prophets of doom and gloom, contesting is for the 50 year-olds and the hobby probably will not exist in 10 years. Let me offer forth my conclusions, based on my findings and on recent observations.

For those who think that contesting just isn't what it used to be, you are probably correct. Our worlds are more complex and diverse and, for most of us, contesting is just one of the "things we do" in our lives. We can still be passionate about it without being obsessive. If we are seasonal and are driven by sunspot activity, then we all have to look forward to an upswing in activity, at least for the next seven or eight years. If we think that our hobby is being overrun by no-code technicians, I submit to you that, last December, I worked 1720 stations on CW during the 10-Meter Contest, many more than I remember from the last sunspot cycle. Although there are still many 50s, 60s and 70s "checks" given out in SS, there are a noticeable number of 80s and 90s and SS scores are much higher than they have ever been. There is no apathy on the various Internet discussion groups; DXpeditions and contest expeditions are more prolific than ever. The equipment manufacturers are still finding ways for us to spend our money. Yep, contesting and ham radio has changed and we certainly have many challenges ahead of us caused by evolving technology and societal changes. From what I have seen, our stalwarts will probably keep their competitiveness in high gear as long as they are able. Many who have moved from competitor to participant status will become more competitive in this coming solar cycle. Those who have dropped aside will be replaced by new faces, full of discovery and enthusiasm.

After being part of the team that brought it to national recognition, I have been inactive in the Texas DX Society for several years. I just read the January issue of their *BullSheet* and realized that I do not know some of those who now hold office in that club. Many said that when K5RC, K5NA and K5MA moved away, the club would fold. Guess what, it's still going strong! When those of us who are "seasoned' contesters are long gone, just as with the TDXS, there will always be others to pick up the torch and keep competition alive, for as long as ham radio exists. ■

The "New" CQ Worldwide WPX Contest

Strategy Considerations

From the West—Jim Pratt, N6IG

N6IG

The CQ Worldwide WPX contest is an animal of a different breed. With the phone contest held in March of each year and the CW weekend held in May, conditions are different from many other DX-oriented contests. Plus, the fact that prefixes are treated as multipliers makes it just as important to work your next-door neighbor with the "good prefix" as a station halfway around the world. Rules changes over the years have created many opportunities for debate, both before and after the change occurred. Several years ago, the allowable operating time for a single-operator participant in these contests was increased from 30 to 36 hours. Many claim that this time limit makes the contest "unwinnable" from many parts of the world; others claim that anything short of a 48-hour operating period makes this a contest for sissies and discourages DXpeditions. The actual impact of the change remains up in the air, a topic of occasional spirited discussions on the Internet contest reflector and in the hallways at Dayton. Beginning in the 1999 contests, another controversial rules change has been placed into effect.

Historically in WPX, it has been necessary to work other stations within your same country to obtain prefix multipliers. Yet, there has been no point value for those contacts. This has led to complaints, primarily from United States operators, of time being wasted working "zero-pointers." The contest sponsor has changed the contest landscape tremendously by allowing one point per QSO with stations within your own DXCC country. There is no two-times benefit on the lower bands (40, 80 or 160 meters) as there is for stations outside your country. How will this impact strategy in the 1999 contest and beyond?

For a single operator, the strategy has always been relatively straightforward. Given the fact that you only have a certain number of hours in which to operate, you must maximize the QSO point value available to you in that time period. How is that done? By working lots of 6-point QSOs on the low bands. For those of us in the western United States, this means focusing on 40 and 80-meter JA runs. This can be a real challenge in the CW weekend, given the long hours of daylight and consequent short window of opportunity for these QSOs. One only has perhaps four hours per night of good opening time with good antennas. This means you had better be there the full time, preferably on both 40 and 80 at the same time using two radios, to stand a chance of making a good score. (The East Coast doesn't fare much better, having maybe five or six hours of opening each night.) This also means taking off-times during the daylight hours to allow for time on during the night.

Will the new rules change this strategy? In my opinion—not at all. Yes, you can now get one point for domestic QSOs on the high bands, but you will NOT be able to run W-stations at six times the rate of JA-stations. Hence, you should still focus on the low bands as before. Given the western United States' advantage on the high bands in domestic contests, this rule change MAY even the playing field between the East and the West, but only time will tell...

For multi-operator stations, there is no change of strategy either. First, they have never had the time limit of a single operator, they are allowed to be on the air for the full 48 hours. So, there will be no change in the allotment of "off-time" since no "off-time" is taken. A multi-single may slightly alter their choice of bands around the cusp of a DX opening to take advantage of a last-minute domestic run. A multi-multi will always be on all the bands, all the time. The multi-multi has always had to split their attention between DX and domestic contacts with multiplier antennas to ensure picking up the good multipliers. This practice will not change. Perhaps there will be more attention to listening both in the DX bands and the domestic band on 40-meter phone, but most multi-multis I have been involved with are doing this already.

What will change in terms of strategy? I say the importance of a US station having an exotic prefix will increase. In the past, there has been a debate about the wisdom of using a "good call" in the WPX. Some say that having the "good call" results in more multipliers coming their way. Others say it is a curse because you end up working countless zero-point KB8s and N5s (nothing against KB8s and N5s) who are looking for your prefix as a multiplier. Now, those stations will be worth a QSO-point each, making it a benefit to have them look for your prefix.

Of course, this is all my speculation and opinion and subject to change based on actual operation and experience. But I believe I will not alter the way in which I approach this contest in 1999, and eagerly await these two weekends. It is a fun contest indeed, rules changes or not.

73, Jim Pratt, N6IG

n6ig@netcom.com

From the East—Robert L. Shohet, KQ2M

KQ2M

The WPX is my favorite contest. I also love CQWW, ARRL DX, SS, IARU HF, ARRL 10 Meters and WAE. Each is different and quite special in its own way. But, most of all, I LOVE the WPX.

The WPX has almost everything that makes contesting truly unique, challenging and enjoyable.

First, *Everyone Can Work Everyone Else*! This is what a contest is really supposed to be about.

Second, there is *STRATEGY*. In this contest, it is not enough to be loud and run lots of guys—you must get all the multipliers, too. Although there are lots of multipliers in Europe, there are hundreds in the US, a lot in South America and loads in JA and the rest of Asia. This forces you to work *EVERYONE* all over the world.

Third, there is *STRATEGY*. Points are calculated differently for contacts based on several factors. For a US station, working another US station counts 1 point. Working a North American station like KP3 counts 2 points and working a station outside of NA counts 3 points. Therefore, if you want to do well, you must operate this like a DX contest as opposed to using strictly SS tactics.

Fourth, there is *STRATEGY*. It is not enough to just work lots of DX. You must also focus on the low bands. Non-US QSOs count DOUBLE on the low bands, so there is always a trade-off between the higher rates of 10, 15 and 20 and the

QRM, QRN and DOUBLE points on 40, 80 and 160.

Fifth, there is *STRATEGY*. This contest has a time limit of 36 hours for S/O. (M/O can operate all 48 hours). In addition, propagation is usually excellent for the phone event in March (one week from the spring solstice) and bizarre for the CW WPX in May. This means that you have to *pick your operating spots carefully*. In the past, I have missed many outstanding, surprise openings to JA, Asia, Pacific and EU because propagation improved. The A & K indices dropped and a band unexpectedly opened with a vengeance to the other side of the world while I was taking off-time; relaxing and chatting with my host upstairs.

In March, we sometimes get middle-of-the-night EU openings (at the top of the cycle) on 20. In May, 15 sometimes opens to EU at 1030Z, sometimes at 1300Z and sometimes at 1700Z (in the same contest!), you just never know! This keeps you on your toes and prevents you from getting complacent.

A rules change increased the time limit from 30 to 36 hours several years ago. Although I am opposed to any time limit because that artificially limits the fun and rewards the less motivated operator, this eliminated the horrible "dead spots" on Saturday and Sunday, which put us to sleep and caused people to quit the contest due to boredom. (I personally hope they *remove* the time limit due to the increasing sunspots and the incentive of working US stations 24 hours a day. We will NEED all 48 hours.)

Sixth, there is *OPPORTUNITY* for everyone. This contest has more available "band-width" for people to CQ and work each other than any other major contest. Most of the big frequency-consuming M/Ms sit this one out. Consequently, the rest of us do not have to battle 50 of these monsters on each band for a clear spot. The contest also falls at the end of the spring "contest season" so there is a lot of operator burnout by then. This means that little guns and low power stations with modest antennas have a chance to be heard and even run stations instead of being obliterated by loud stations every 300 Hz.

Seven, there is *OPPORTUNITY* for everyone. *A unique call sign is an advantage* in this event. Many stations that routinely get ignored in a major contest (Who really gets excited about working their 50th station in CT on 15 meters?) have a chance to be a multiplier and be desirable. While a KQ2 in CT is a curiosity in SS, no one gets excited about it. In the WPX Contest, however, lots of stations "come out of the woodwork" to work me regardless of what state I am operating from. I never hear many of these stations in any other contest—just WPX!

Likewise, it is also kind of amusing to hear a loud EA8 with a SMALL pileup right next to a KW8 with a BIG pileup. When does that happen in a major DX contest?

Okay, so what does all this mean? It adds up to a lot of fun, lots of DX to work, lots of EU and JA activity and lots of operating decisions to make.

Now for some strategy...

To do well in this contest, you need three things:

1) A Unique call sign (can add 5 to 10% to your score).

2) Some ability in arithmetic.

3) Lots of antennas to point in different directions (wire antennas are okay!).

A unique call sign is obvious. If you are the only KQ2 (or one of only two or three) you will be popular. Everyone who wants the multiplier will have to work you. There are lots of multipliers, however, so it is not quite as good as being the only V26 in a DX contest. A unique call sign will cause some other unusual call sign stations to call you and almost no one else. If you are real loud, not having a unique call sign is not as important. It is much more important to be heard than to be unique. Of course, if you are both, the contest is even more fun. It is ironic that due to low US activity (especially in WPX CW over Memorial Day weekend) there might only be two K3 stations on in the contest. Many times in past WPX contests, I have not worked a single WB8 whereas in SS I might work 10!

Ability in arithmetic is very important. Although the computer software will score your log for you, it doesn't tell you the relative value of working a 1-point KF4 (for a new multiplier) verses a 6-point DL3.

Let's take a closer look at this...

If you made 1000 QSOs for 3000 QSO points and have 400 multipliers, your score is 1,200,000. If you work a 1-point KF4 *on 40 meters* for a new multiplier, you will make 3401 points. If you work a 6-point DL3, you will make 2400 points. If that DL3 happens to be a NEW multiplier, you will make 5406 points. If neither the KF4 nor the DL3 are new multipliers, working the KF4 will get you 400 points and working the DL3 will get you 2400 points. So, you need to work 6 KF4s to equal one DL3 on 40!

Granted, there are lots of KF4s and also quite a few DL3s but which way are you rewarded more? Answer—by going to the band where you can work DL3s, especially if you have not yet worked much EU and you can pick up other EU multipliers. These relationships are different though for the high bands where working the same DL3 gets you only three points. Of course, it is also easier to work the DL3 on the high bands and there are more of them to work, so once again you are rewarded more for working the DL.

Propagation determines what you will work and when. Many times I have ignored EU (if you are in the northeast, you NEVER ignore JA!) in favor of running and S&P'ing West Coast stations on 20 meters at the start of a contest. Even under the worst of conditions, it has been possible to work at a 150/hour pace and pick up lots of western multipliers that I will not hear again. So, although I might initially make more points by working EU stations, chances are that I could work them on Saturday and Sunday. I might never hear the AG6 and WE7 stations again, though. So, it is important to think of the whole contest at all times—openings and opportunities are occurring NOW that might not be there again. Besides, it is fun and important psychologically to get a good start—especially when the loud W6 in your category is giving out #900 after 6 hours and you are eating QRM & QRN on 80 and giving out #475.

It is VITAL to have lots of antennas because you need to work EVERYONE, and ANYONE can be a multiplier. When you have good groundwave on 15 meters, you better be loud to all the WF1, KY3 and WB2 stations because you may not hear them again and this is where the population and multipliers are. It is real easy for a W4 or W6 to work 1,000 East Coast stations and pick up 200 multipliers when they are S9+20. A northeastern station might only be S3 or 4 to someone in CT, though. Therefore, the difference in having an antenna that is optimized for groundwave could be worth 50 multipliers! You also need the ability to work EU at the same time, so you clearly need an antenna pointed there as well. Finally, lots of West Coast and VE stations might call, so you better have something pointed out there as well. The ability to stack and split antennas in different directions is HUGE. Failing that, if you have one antenna on EU and have another (wire antenna?) on the West Coast, you can call CQ on the EU antenna and switch back and forth to hear the West Coast stations that call you.

I believe that it is equally important to "bunch" together contacts on different bands. Let's say that it is a Sunday AM near the bottom of the cycle in the CW contest and 10 is

open to SA while 15 is open to EU. I will avoid 10 until it is open to Africa and the US. Only then will I leave 15 and S & P on 10. Since I have probably only made a few QSOs on 10 before, virtually everything is a new QSO and possibly a new multiplier. So I can S & P for an 80/hour even with poor conditions and pick up 30 new multipliers. Now I can go back to 15 and ignore 10, having worked most of what was there.

I might also do this with 20 in the SSB 'test when it opens to JA in the morning. Rather than go to 15 as early as possible for high rate EU, I will stay on 20 (even though the rate is dropping to EU) because the band is just about to open really well to JA, UA0, SE Asia and the Pacific. Almost everything is a new multiplier. These are guys I might not hear again in the contest and they are usually loud! With the EU stations gone as well as most of the US, I can hear them great. So, for the 75 EU I gave up on 15 (most of which I will work later anyway) I got 25 new Asian prefixes and lost only 30 QSOs in the bargain. When 20 is open marginally to Asia that evening, I can ignore it and instead go to 40 and work 6-point EU stations. That isn't nearly as much fun, but it sure helps the score a LOT more.

The most interesting aspect of the WPX is how the strategy changes from year to year due to propagation changes. This becomes even more pronounced in the WPX SSB because you are right at the solstice, so worldwide conditions are just waiting to bust forth anyway. Add a few sunspots and low absorption, stir, and watch the bands explode.

For instance, at the top of the cycle in the SSB Contest, one has to go to 20 at EU sunrise to run stations (even though it is only to work 3-pointers) versus staying on 80 to work 6-point EUs. The rates on 20 are about double those on 80.

Likewise, for the CW 'test in the high sunspot years one can NOT spend all night working EU on 40 and 80 because they are on 20 working the US, JA and each other. So, you must alternate between 6-point EUs (with relatively low rates) on 40 and 80 and running at a high rate on 20. If you stayed on 40 all night, you would get bored (since no one is there) and give up several hundred QSOs on 20. Also, 20 sometimes opens up to EU as early as 0800Z. If you stayed on 40 all night, you have just forced yourself to chose between operating 20 at 0800Z and taking off-time while EU stays open on 15 all day, or operating 20 NOW and then 15, and having NO time left for 6-pointers. Make your QSOs on 40 and 80 when everyone goes there the second night.

But beware—just when you think you have it figured out, the bands do the opposite of what you expect and your competition gets it right!

A new twist is the (welcome) point rule change in 1999. Now we can work stations in our own country for 1 point. This exciting change should increase activity throughout the US, making the scores a little bit closer between the East, South and West. It should also increase the number of multipliers available to be worked.

My strategy will not change much, however. This is STILL a DX contest. If I can work 130 Tech Pluses on 10 (for 130 points) and pick up 15 multipliers on SSB in the late afternoon instead of working 40 EU stations on 40 meters (for 240 points) and pick up 12 multipliers, I am MUCH more rewarded for braving the broadcast and crud on 40. There is no comparison. Likewise, if on 15 CW I can work 100 West Coast and Midwest USA stations for 100 points and 15 multipliers versus working 60 EU stations for 180 points and 12 multipliers, I will choose to work EU. Again—no comparison.

Granted, it is easier and more fun to work loud stations with shorter call signs, especially when you are tired, but the scoring system says to work EU instead, and that's how it should be. You should always get more points for making contacts that are more difficult. So the overall effect of working US for points will be small for me and not really change my strategy. The only major difference that I can foresee for East Coast stations might occur at the bottom of the cycle in the WPX SSB when one will be able to run US for points on 40 in the morning before 20 opens to Europe. THAT will be worthwhile.

One thing is for sure, the propagation and strategy of this contest is dramatically different from year to year. As an example, the following is how I operated the WPX contests last year with marginal conditions and lots of violent weather....

WPX SSB '98—KQ2M

Started on 20 and ran UA9, southern EU, JA and West Coast for 2 hours. Slugged it out on 40 SSB to EU and then sat on 80 for 5 hours running EU and US (excellent conditions!). Checked band conditions and made a few QSOs on 20 and 40 at 08/09/10Z. Spent a few marginal hours on 20 with EU, JA and SE Asia from 10-13Z and then had fun with 15 to EU from 13-18Z. Sprinted on 10 S & P'ing to Africa, US and SA at 18Z for 30 minutes and then back to 15 at 19Z. Then down to 20 for EU and JA until 23Z. I left a productive 20 meters and gambled that 15 would open to JA at 23Z and I would pick up some needed JA multipliers. I was right! Then I followed the MUF from 15 to 20 and then to 40 at 00Z where I worked more 6-point EUs. I took 1 hour off-time until 0245 when I went to 80 for "hit & run" EU and US. On again briefly at 05Z to check propagation and then off till 1015Z when I went to 40 and 80 for 10 minutes to work 6-pointers. Then I went to 20 and stayed there to work SE Asian multipliers even though EU was booming on 15. I went to 15 at 1240Z and ran EU. Hit and run 10 at 1915Z West Coast. Took one hour off-time at 2145Z and then back on 20 at 2245 for 30 minutes to work JA, Asia and West Coast.

WPX CW '98—KQ2M

QRT at 0003Z Saturday when a nasty thunderstorm tripped the breakers. UGH! Got on 40 at 0103Z (100+ QSOs behind!) and spent the next 5 hours there with a brief foray to 80 for a few EU through HORRENDOUS static. On 40 at 10Z for a few 6-point Pacific, SA and NO JAs (JA was multi-path, weak and obliterated by QRN). Then went to 20 and spent the ENTIRE day there until 22Z. Was on 15 briefly between 13-15Z but it was real marginal and had to go back to 20. Went to 40 at 23Z and had to repeatedly QRT over the next 5 hours because of multiple severe thunderstorms. Did a lot of 2nd radio S & P'ing on 80 at 01/02/03Z while running on 40 and picked up an additional 60 6-pointers! This REALLY made a difference! Decided to take a risk and spend some time CQing on 20 at 02Z since the band was open to UA9/0. Picked up some good multipliers but should have stayed on 40/80. Took off-time at 06Z and got back on 20 at 10Z (too early). A good JA opening kept me on 20 (since I had worked almost no JAs before then) until 1330Z, when I went to 15 for a decent 2 hour EU run. Off-time at 16Z and on 10 for 10 minutes at 1830Z and then to 20 until 22Z. Off until 23Z and then on 20 until the end of the 'test. I had planned on getting on 40 at 23Z for 6-point EUs but miserable conditions and S9+50 QRN (even on the beverages!) changed my mind. Sunday evening had FOUR rounds of violent thunderstorms and tornadoes including one twister 1/2-mile away at 3 AM!

To summarize, in my humble opinion, the WPX is a GREAT contest that is lots of fun and has something for everyone. I enjoyed sharing my enthusiasm with you in this article and hope to CU in the WPX. Why not give it a try?

73, Bob, KQ2M ■

CQWW 1998—and Making Friends with Those Elusive JT1s

Martti J. Laine, OH2BH/BY

Being a contest type makes you a friend of JTs instantly. So rare is CQ Zone 23 that when you hear a JT signal, you always feel a sense of excitement with the prospect of logging a contact from this rare zone. But for many years Zone 23 has been missing from most of the bands—maybe *all*.

There was now an aura of mystery about when the OH types boarded a *MongoAir* plane in Beijing ready to experience that mystical zone and hopefully hand out some Zone 23 QSOs.

Was it an old Russian *Tupolev* jet with its smelly seat covers? No, it was the latest *Airbus* with the cleanest textiles and the happy smiles of flight attendants.

Some people claim the roots of all OHs go back to those vast lands of Mongolia; so for us the feeling was more like returning home.

The Plan

To make the trip simple, we had decided to operate Multi-Single. Two Yaesu FT1000MPs and two Alpha 91Bs were packed. I added a new Yaesu FT-847 and a small 10-meter beam to the pile, just to have some back-up gear. There were four of us heading out on this adventure; Jouko, OH1RX, Jukka, OH8PF (jet lag fresh from another trip), Mom, OH2BE, and myself. Our luggage was over the weight limit, but experience from our previous world travels helped us get it through. The JT1A team was on its way.

A Warm Welcome

We had expected to be met at the Ulan Baatar airport, but not in a "state visit" kind of way. The whole Mongolian Amateur Radio population was on hand! Not only the local JT1s, but also JT4s and 5s—areas that would be real treasures to the CQ WPX folks. "Never heard"—as a net control station might put it.

The gathering at the Mongolian Radio Sport Federation (*MRSF*) was warm and spirited, and we were ceremoniously presented with our special JT1A call sign.

But while the official speeches were being made, a true-blue DXer couldn't help but fix his sharp eyes on some pieces of aluminum tubing in one corner of the clubhouse.

Furthermore, it was quickly noticed that there was some Kenwood gear at JT1KAA—both a transceiver and an amplifier. Unfortunately both were broken! While the toasting continued, one of the Deserving already had the gear bottom-up. Could we possibly repair the TL-922? That would give us a third amp, which would certainly go nicely with our Yaesu FT-847! Three stations and three operators would equal Multi-Multi the Mongolian way. But it would require a solid 48-hour effort from all three operators. A mammoth task... especially after 24 hours of pre-contest flying. But still two days to go before the starting bell would ring. Could we pull it off?

Pre-Contest Action—Fast but Frozen

Indeed there was another antenna available. There was a permanent JT1KAA tri-bander, barely operational SWR-wise but useable on 20 meters, and we had brought in the 10-meter Yagi.

Happily, we were able to locate two small hotels within the radius permitted by CQWW. Soon we were busy decorating the hotels with antennas.

Three sites, three operators and many helping hands. The effort proved rather slow-moving as we soon realized that this was a real Zone 23 country. Temperatures dropped to –35°C (which makes the conversion easy since it is also –35°F). Working on the beams with bare hands was an effort that you can tolerate for about 30 seconds!

Believe it or not, Friday evening all three sites were up and ready to run. For our low-band antenna we made an incredible $10 (US) deal with a crane truck outfit. They moved their machine right next to our low-built hotel and provided our 80-meter sloper with some needed height!

A strategy was agreed to where each station would stick to the same frequencies. That way we would be able to do some multiplier moving—*but the heck with multipliers*—as we were about to hand out Zone 23 Qs in a big way!

After launching a last-minute Internet marketing campaign, we were ready to draw some bottles of Mongolian vodka for those who would watch the performance all through and on all six bands.

Souls Put Together with No Extra Team Building

It was funny, but we made one team upfront. No team building was needed.

A Yaesu FT-847 donated on behalf of Yaesu Musen Co. Ltd lets JT1KAA hit the airwaves again. From left: JT1BV, JT1CJ, OH2BH and OH1RX at the MRSF office.

A ger village some 50 km from Ulan Baatar. This could easily house a real multi-multi, with some multiplier gers in the immediate vicinity.

Such was the spirit of the JT folks—they wanted to make this operation a success. They treated us as their rare guests and were ready to put their hearts into this game.

I could name many, but would like to mention only one. It was a highly emotional moment when 78-year-old Dambi, JT1AG, was on the rooftop with his fur hat down to his shoulders. He had traveled a long way to make this happen. He had come a long way in terms of both distance and time and wanted to see JT1A succeed.

It was very moving to see that his latest QSL card still described his receiver as one using 17 tubes. Those tubes would require a much longer warm-up time in these temperatures than today's Alphas. It was good to meet Dambi, first-ever personally licensed JT1. He was responsible for providing the first-ever JT1 QSOs—an especially fond memory for those who can look back and treasure those wonderful times.

CQWW was a Routine Performance —Or was it?

The script was rather simple. Three daylight bands and three hours-of-darkness bands. Just stay up for a full 48 hours and we'll meet up again Monday morning to tally the score. Mom would provide support and pass around some soup. The less you drink, the less off-time is needed. This is contesting at its best!

Halfway through the contest, Mom relayed a report that OH8PF had passed out and was sleeping, hunched over the computer keyboard with his headphones as a pillow. The first victim needed some oxygen. JT1CD took over, trying to save what could still be saved.

Word came from JT1KAA that OH1RX was taking a mini-nap after launching JT1BH, a local DXer, into the battle. At the 80/10-meter Hotel, the third tiring operator was calling out "*Jesus Maria!*" as he saw in every seven-segment frequency digit at least eight illuminated segments.

I guess it is fair to claim that a three-operator multi-multi effort from the far end of the world is very special—not a routine thing at all. We are ever so grateful to JT1BH, JT1BV and JT1CD who came to rescue those three brave operators. The JTs initially claimed in full earnest that they could not send any Morse code, nor would they be able to operate using computers, but they were just being shy!

They were serious operators—and jolly good hams. The last few hours, when this writer was already in intensive care, Khos, JT1CD, came over and put in several hours of effort on 80 meters to reach the 1000-QSO mark, a goal we had set when the world was still brighter. He did all this with a fur hat on. He apologized to his XYL Monday morning for being some 48 hours late for his Friday night supper. True Mongolian ham spirit.

Monday Morning—Back to Protocol

On Monday morning we counted the cash. We had made some 9000 QSOs and the score was close to 12.8 million.

Now it was time to get civilized and play professional for one day. We were touring the frozen city at a high altitude of 1580 meters, surrounded by still higher mountains, when we realized that we had been operating from the bottom of a valley, as it were.

We were delighted to make a courtesy call on *Telecom Mongolia*. Their President, Dr. S. Ganbaatar, welcomed us and emphasized the importance of international exchange with the local hams. It would be difficult for him to fully appreciate the progress that had been made in the preceding 48 hours.

It was our pleasure to present a Yaesu FT-847 transceiver on behalf of Yaesu Musen Co, Ltd to the MRSF so that JT1KAA can again hit the airwaves.

The city of Ulan Baatar still has a profile reminiscent of the Russian era, which came to an end in 1991. When the Russians left and the bubble burst—Mongolia was left alone, suffering but free. Now eight years later, Mongolians are full of confidence in the future and determined to rebuild their economy. The young and well-educated men in the government will be facing a gargantuan task trying to put these 2.3 million people on the track to a reasonable future for themselves and for their children.

The prospects for Zone 23 are as bright as the country's newly won freedom, and we are certain we will soon hear news of significant progress on the industrial and economic fronts. We remain confident that God will look after His beloved ones wherever they live—regardless of low temperatures and potholed streets. We are convinced that these JT types have the motivation and the spirit to make miracles.

Yet Another Experience Lay in Store for Us

Being DX types in Mongolia, it should be obvious that we would be celebrating our farewell party in a ger. What is a ger? How can you make a connection between DX and a ger? Stay with us, as they say on CNN!

A ger is a large, white felt tent. They are seen all over Mongolia. Most Mongolians still live in gers, even in the suburbs of Ulan Baatar. It is not hard to understand why. Wood and bricks are scarce and expensive, whereas out on the steppes, animal hides are cheap and readily available. Furthermore, Mongolians remain nomadic (DX types) and gers can be taken down and moved

A frozen antenna party on the rooftop of the 15/40-meter hotel. From left: OH8PF, JT1AS, JT4LM, JT1CD, JT1CJ and Dambi, JT1AG, with OH2BH.

Fighting –35° temperatures, the iron men made it but their coax did not. The plastic insulation of RG8X broke into pieces. We were way out of temperature specs for this cable.

Dr. S. Ganbaatar is not only the President of Telecom Mongolia. He also serves the Deserving by presiding over MRSF, the Mongolian IARU member society. Much to the surprise of OH2BH and OH1RX, who made the proceedings, Dr. Ganbaatar was a keen user of latest Nokia technology.

from one grid square to another and reassembled in 1 to 3 hours!

Gers can be surprisingly comfortable. In urban areas, they may have electricity, but in the rural regions they use candles and oil lamps (maybe that is why we never hear JT4s and JT5s). There is a stove in the center and a related small opening atop the ger, allowing smoke to go out and air to come in. The hole can be used for numerous purposes—it would be suitable for the installation of a mast with a tri-band beam to be rotated by hand.

The average weight of a ger is 250 kg. It can be placed on a cart and pulled by yak, camel or horse. In early summer, you may see many Mongolian families transporting their gers, all their worldy goods and animals for several hundred kilometers in search of better water, fodder or weather (or perhaps simply another new grid square).

For the benefit of future contest operations from Zone 23, we are obliged to list those "DO NOTS" that you should observe when walking into a ger. And you should take this seriously, please!

Please DO NOT lean against a support column while inside a ger, stand on or lean over the threshold, stamp out a fire or put water or any rubbish on it.

DO NOT walk in front of an older person or turn your back to the altar and religious objects at the back of the room.

DO NOT take food from a communal plate with your left hand.

DO NOT touch other people's hats.

And finally, make sure you DO NOT have a long conversation in your language in front of your hosts if they do not speak your language!

The bad news is that when approaching the ger, you will, without knowing, break many of the traditional, religious and superstitious customs. If you get confused, don't worry, even many Mongolians often forget or get confused, and minor indiscretions will be tolerated.

It all worked smoothly with the JT1A group, especially since they had some 96 hours of sleepless days under their belts and the 40 A Mongolian vodka apparently relaxed and made all transactions quite fluent.

Honoring an ancient Mongolian tradition, before we said good-bye, three bottles of the Great Chinggis Khaan vodka were drawn to reward those who made it on six bands with Mongolia in one contest.

Who is the Great Chinggis Khaan?

There are several interesting questions that the JT1A CQWW 1998 Multi-Multi Contest operators may not answer in the entries of their QSO database. Those are the Mysteries of the Ages, including people and sights that you can only discover while visiting this friendly but rare Zone 23.

You should book your ger now, take your radio gear and start moving from grid to grid in this vast country of Mongolia. There is a lot to be seen and experienced—not just working DX and making love!

You may find a group of fine gentlemen at the Ulan Baatar airport ready to take you on board for the experience of your life, to encounter those potholed streets and those smiling people. Please be sure to say hello during your visit to people like JT1AG, JT1AS, JT1BV, JT1CD, JT1CF, JT1CJ, JT1CM, JT4LM and JT5AB. They will be delighted to welcome you into their gers and would be glad to help you hoist your antennas so that Zone 23 can once again be made available to those who deserve.

All 6-band Contacts with JT1A:

A61AJ, AH2R, DF0HQ, DJ7UC, DK0EE, DL2NBU, DL7ON, DL7VEE, JA0DAI, JA1YXP, JA2BY, JA3YKC, JA4EKO, JA5BJC, JA6ZLI, JI3BFC, JJ1VRO, JK1ASO, JL1ARF, LY7A; OH2U, OH3YI, OH5PT, OH7M, ON5NT, RK9CWW, RK9CXM, RN3D, RW2F, RZ9OO, SL3ZV and SM3EVR. ■

VHF-UHF Contesting!

Jon K. Jones, N0JK
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Meteor Scatter Techniques in VHF Contests


N0JK

The 1998 Leonids Meteor Shower was spectacular for nearly all radio operators active during the excitement. Larry Lambert, N0LL, EM09 found one "burn" on 2 meters lasting 9 minutes during which he made 11 QSOs. Larry completed a 222 MHz MS sked with VE5LY in 35 seconds! Arliss Thompson, W7XU, in South Dakota made a 432-MHz meteor-scatter contact with N6RMJ in southern California at 2036 km (possibly a new NA 432-MHz meteor scatter record!).

N6RMJ relates "Well, it's now 1030 UTC (11/17/98). I have a 222 schedule with W7XU. Start calling—un-key—and he came right back. It took 2.5 minutes to complete. WOW! We still had 27.5 minutes left in our schedule, so I got him on the Internet and we went to 432 MHz. At 10:46, I un-key and find Arliss—on a burn of 11 to 18 seconds!"

From MN, Bill Mitchell, K0WLU, logged 124 stations in 99 grids on 2-meter meteor scatter running just 90 W and a CC 17B2 antenna. Just imagine if the Leonids had occurred on a VHF contest weekend...

Unfortunately, there are no major meteor showers during the VHF contests. During the June VHF QSO Party, the Arietids Perseids (a daytime shower) sometimes shows up and creates enhanced "scatter." But "random" meteors are present in all of the VHF contests and can add QSOs and grids to your score on a "dead band" if you know how. (See **Figure 1**.) HF contest ops that operate the 10-meter contest may have experienced meteor scatter as well. The 10-Meter Contest weekend often coincides with the Geminids meteor shower. At night after 8 PM local, especially during the sunspot minimums, meteor scatter becomes an important mode for making QSOs during the contest. This is a good opportunity for VHF ops to practice meteor scatter techniques.

The 6-meter band is the best for "random" VHF contest meteor scatter QSOs. The bursts are longer and there are more "overdense" bursts than 2 meters. Meteor trails will reflect radio signals best if oriented as in **Figure 2**.

"1200 km+ QSOs can be made any time on 6 meters using random meteors—if you have power and antenna gain. If you have 1 kW out, you get an instant QSO. With 100 W, a sked may be helpful. At OZ5W, we once worked a station 1600 km out with 160 W on a dead band, marginal but possible on a winter evening! Meteor scatter on 6 meters sounds like brief enhancements of the signal you are listening for. Out of the noise pops your QSO partner at 59+—usually for less than a second, but then he fades away fast. Sometimes bursts are many seconds long and you may be lucky enough to complete a QSO in one burst. But even on 6 meters you have to be fast..."—Palle Preben-Hansen, OZ1RH

Palle observed the optimum range for meteor scatter QSOs. "Meteors burn up in the upper atmosphere most frequently at an altitude of 105-110 km and create an ionized trail in the E-layer, which may reflect radio waves for a short moment. This gives single hop Es ranges of up to about 2300 km. The best meteor scatter

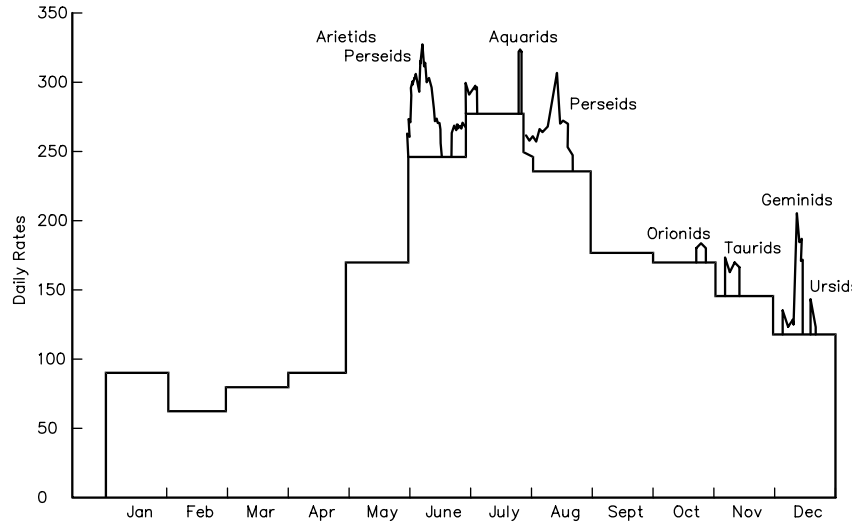

Figure 1—Random meteor rates during the year and the major meteor showers.

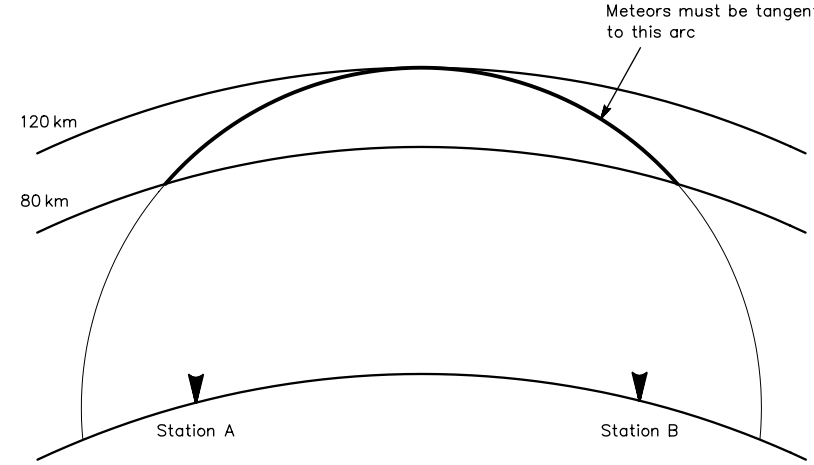

Figure 2—How a meteor trail reflects a radio signal.

signals are from 1100 to 1600 km."

Draw range circles around your station on a map at 1100 km and 1600 km. In between will be your prime 6-meter meteor scatter territory. The footprint for a meteor trail reflection is often small—a hundred or so km in diameter for an "underdense burst." A large "overdense" burst from a fireball can have a large footprint and the band may sound like e-skip.

OZ1RH notes: "Meteor scatter is not as good during the local afternoon and early evening, but QSOs are still possible. However, it is much easier during the night and morning." See **Figure 3**. Many of us who have worked meteor scatter on 6 meters during the contests have observed this diurnal variation. Most meteor scatter is during the morning hours and drops off during the afternoon. But it is still possible at other times. Persistence is the key to getting every possible meteor scatter QSO on a "dead band."

Palle describes a 15-second sequencing technique used in Europe during VHF contests to make 6-meter meteor scatter QSOs:

MS procedure with 15-second sequencing for contests:

"Beaming south, you transmit 15-29 and 45-59 seconds past the minute. Beaming north, you transmit 0-14 and 30-44 seconds past the minute. An accurate clock is needed.

Send the complete exchange—report, QSO number (if needed) and locator as one exchange: '27 IO91JK' or '27001 IO91JK Avon'.

After you have received all OK, add 'roger' to the send report: 'R27 JO55UL'. Never send 'roger' unless you have copied everything.

When you have received all okay and received a roger, send RRRRR for two periods."

Shelby Ennis, W8WN, offers the following on the subject:

"For random contacts, exact periods are not necessarily used as much (in North America), especially for SSB. A short (2 x 2 or so) call, listen, call, listen,

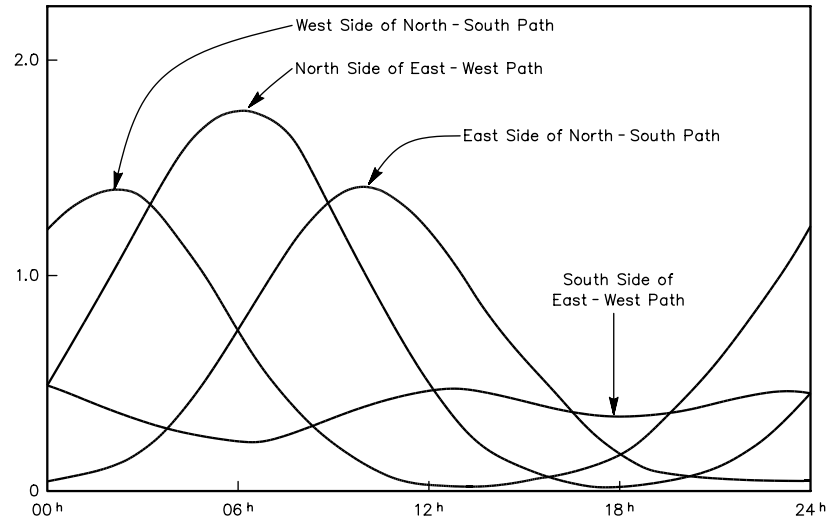

Figure 3—Predicted diurnal variations in random meteor counts for a path length of the order of 1000 km.

has often been used on SSB on 144 (and 50 MHz in contests). The attempt is to get everything through on only one or two short overdense bursts, thus there is less need for exact timing if the transmissions are all kept short."

I have found when running high power on 6 meters making short calls and listening, as Shelby suggests, is a successful technique. Sometimes I try to synchronize my calling to a 15-second sequence.

The Western Hemisphere standard is: The western station transmits during the 1st and 3rd 15 seconds of each minute and listens during the 2nd and 4th 15-second periods. If you get a reply from a station and you don't "get everything thru" in the burst, stay with them giving the grid square over and over in short transmissions until you hear a "roger." If you need their grid square (and they have copied yours,) say "*grid square*?" several times and listen—repeat this until you get it.

Running low power, your best hope is to wait for a long overdense burst so the exchange can be completed in one shot. Still—stay with it if you don't complete in a single burst—sometimes you'll catch another. Often you can hear the Big Guns on a weak residual 6-meter iono-scatter signal in between pings and bursts. The radio and a brick crowd come through only on bursts—if you're running low power, that is how you sound to the Big Guns. Even QRP stations can occasionally make a random 6-meter meteor scatter QSO. I worked K0GU in DN70 on a loud burn with 10 W and a 3-element Yagi from EM18 during the June VHF QSO Party a few years back.

Another technique that may be used is high speed CW meteor scatter. Contacts made by this mode are legal in the ARRL VHF Contests. Meteor scatter QSOs can be made on 2 meters off random meteors using this method. Most random meteors we hear on 2 meters last around 1/4 second to a couple of seconds—not nearly enough time to get much information through on SSB. This can be overcome by using high speed CW. For example, let's assume that you are running a sked with a station 1600 km away on 2 meters. On a normal morning you might hear 6-10 short "pings"

Top Ten Reasons to be a Rover in Illinois in January (by AA9D)

10. It's so cold the noise figure on your preamp drops to zero.
9. The headphones keep your ears warm.
8. There is no corn blocking the beautiful views.
7. Less competition from farm implements for choice operating sites.
6. Couldn't find any cops crazy enough to hassle us.
5. One feels real macho when your lips freeze to the microphone.
4. Coax holds up the antennas without a mast.
3. That warm, comfy feeling you get in your blizzard suit from eating fast food for 48 hours.
2. Sporadic goose bounce.

And finally… the number 1 reason to be a Rover in Illinois in January:

1. Too cold to smell the manure!

lasting anywhere from 1/10 sec to 2 seconds. Anything under 1/2 second would be absolutely useless on SSB. Now, lets say you were running high speed CW at 2000 lpm (letters per minute). In that same 1/2-second ping you could get through 16 letters. That is enough for a complete exchange of your call and grid square. Receive the same and exchange "RRRRs" on 3 more "pings" and you have a complete contest QSO.

A station could run 2-meter meteor scatter skeds late at night during lulls in the contest and add some new grids. This could be a deciding factor in close races. High speed CW can be used for 6-meter meteor scatter, too—but usually contacts can be made via conventional speed CW or SSB on this band. For more information on this subject, check out: **http://www.qsl.net/k0sm/ms.htm**

KC5FMT SK

I regret having to report that Mark, KC5FMT, has become a Silent Key. Mark most recently was active in the ARRL June VHF QSO Party signing XE2/KC5FMT. He made numerous tropo QSOs on 144 and 432 MHz from Mexico into Cuba and Florida during that contest. He put Mexico in many VHF contest logs. Mark will be missed.

73, Jon, N0JK

Here are the *Record Single Op Scores* for the June VHF QSO Party contest updated to include 1998 results. Section and Division records are indicated. Just the top few scores from each area are provided in this abbreviated listing.

73, Curt Roseman, K9AKS

Highest Scores, Single Op, June VHF QSO Party by Call Area 1986-1998

	Year	Sec	Score	QSOs	Grids	Bands	Division Record
WA2TEO	96	CT+	417,186	1060	294	*9EF	NE
WA2TEO	93	CT	412,002	1086	282	*9EF	
K1TEO	98	CT	385,560	993	270	*9EFG	
W1VD	86	CT	367,443	1067	279	*E	
WA2TEO	97	CT	350,058	987	246	*9EFG	
WA2TEO	92	CT	336,936	917	278	*9E	
WA2TEO	95	CT	304,848	952	232	*9EF	
WA2TEO	91	CT	270,712	821	247	*9E	
KA1ZE	91	CT	268,956	794	241	*9EF	
N2CEI	93	NNJ+	301,194	808	261	*9EFGHJ	HUD
N2CEI	92	NNJ	269,619	734	259	*9EFGHIJ	
K2SMN	87	SNJ+	250,848	666	268	*9EF	
N2BJ	87	ENY+	231,990	804	222	*E	
W1XX/2	92	ENY	230,748	789	246	*9E	
N2WK	96	WNY+	229,362	599	254	*9EFGHIP	
K2SMN	88	SNJ	226,335	667	237	*9EF	
N2CEI	97	NNJ	225,862	700	221	*9EFGHIJ	
WA2OMY	87	EPA+	305,665	831	290	*9E	ATL
K1RZ	98	MDC+	289,044	848	252	*9EF	
K1RZ	93	MDC	286,960	796	272	*9E	
KB3QM	87	MDC	272,538	781	294	*E	
K1RZ	92	MDC	248,688	730	264	*9E	
WA2FGK	88	EPA	249,320	692	271	*9EF	
K1RZ	97	MDC	243,698	808	206	*9EF	
WA2FGK	90	EPA	240,384	630	256	*9EF	
AA4ZZ	96	NC+	193,200	645	276	*	
WA4CQG	96	AL+	192,080	780	245	ABD	SE
N8UM	92	TN+	166,615	635	235	*	
WB4SLM	87	GA+	156,104	632	247	AB	
WA4NJP	87	GA	153,517	578	241	*E	
KA2DRH	92	AL	153,339	627	237	ABD	
WD4MGB	87	SFL+	151,726	695	214	ABD	
W3IY/4	86	VA+	145,754	543	203	*E	
W5ZN	98	AR+	626,220	999	420	*9EFGHIJ	DLT
WB5IGF	96	AR	563,528	999	406	*9EFGHI	
N5HHS	98	STX+	406,308	1348	294	ABD	WG
K5UR	92	AR	398,832	980	336	*E	
W8CM	98	NTX+	396,210	1254	281	*9E	
W5UWB	98	STX	372,070	1225	290	*E	
K5UR	87	AR	367,734	878	367	*E	
N5WS	98	STX	365,078	1114	293	*9E	
K6KLY	96	SCV+	136,136	603	182	*9E	PAC
N6NB	93	SJV+	112,041	520	177	*9E	
W3SE	98	LAX+	110,544	574	147	*E	
WD6AUP	87	ORG+	101,896	466	188	*E	
W6CPL	87	LAX	99,120	423	177	*EI	
N6HKF	98	ORG	97,197	445	179	*	
W6CPL	88	LAX	89,112	423	141	*9EF	
AA7A	96	AZ+	140,360	588	232	ABD	SW
KE7CX	92	OR+	118,035	498	215	*9E	NW
K7ICW	96	NV+	108,570	427	231	*E	
W7YOZ	92	WWA+	107,920	457	190	*EFGIJ	
W7FI	92	WWA	93,150	450	207	AB	
WA7KYM	93	WY+	84,770	446	173	*	
K7IDX	92	WWA	82,533	451	183	A	

	Year	Sec	Score	QSOs	Grids	Bands	Division Record	
WA8WZG	98	OH+	592,668	1160	326	*9EFGHI	GL	
WA8WZG	96	OH	429,040	844	310	*9EFGHI		
WA8WZG	97	OH	395,031	838	273	*9EFGHI		
KE8FD	98	OH	258,718	655	277	*9E		
WA8WZG	94	OH	241,362	631	207	*9EFG		
WA8NJR	92	OH	239,680	689	280	*9E		
WA8NJR	93	OH	221,960	691	248	*9E		
KE8FD	96	OH	219,700	614	260	*9E		
WZ8D	93	OH	207,612	631	292	*		
WD8ISK	95	WV+	206,780	568	245	*9EF	ROA	
N2BJ	98	IL+	280,575	863	261	*9E	CEN	
WD9IIX	87	IL	219,114	740	259	*E		
WB9MSV	87	IL	200,043	582	279	*		
K9KL	98	WI+	125,132	476	218	*9E		
NE9O	87	IN+	123,060	555	210	ABD		
K2DRH	98	IL	114,460	590	194	AB		
WB9MSV	92	IL	108,262	420	209	*9E		
K0GU	98	CO+	287,749	1089	259	ABD	RM	
N0LL	92	KS+	272,790	824	315	*E	MID	
N0LL	96	KS	240,536	798	281	*E		
K0TLM	87	MO+	217,344	653	283	*E		
N0LL	91	KS	213,597	629	293	*E		
N0LL	98	KS	202,386	723	267	*E		
WA0BWE	92	MN+	200,187	646	261	*9EFI	DAK	
VE3BQN	92	ONT+	145,418	608	221	*E	CAN	
VE3ASO	88	ONT	132,870	499	215	*9EFI		
VE3ASO	87	ONT	127,908	464	228	*9EFI		
VE3ASO	89	ONT	124,070	462	190	*9EFI		
VE3ASO	90	ONT	107,864	411	194	*9EFI		
VE3RM	92	ONT	103,115	486	205	*		
VE5UF	97	SK+	65,274	506	129	A		
VE5UF	91	SK	50,299	281	179	A		
VE7SKA	92	BC+	45,904	300	152	ABD		
VE9AA	96	MAR+	45,353	339	133	ABD		
VE6KZ	89	ALB+	30,528	154	106	*		
VE5UF	88	SK	28,520	230	124	A		
VE6TA	92	ALB	24,282	204	114	*		
VE2XX	92	QUE+	23,608	185	104	*9E		
XE3EB	92	MEX	68,440	472	145	A		
KA3B/VP5	92	TnC	46,610	395	118	A		
XE2/N6XQ	98	MEX	23,074	260	83	ABC		
KB4CRT/C6A	88	BAHMS	20,832	217	96	A		
HH2PK	92	HAITI	15,106	182	83	A		
YC2OK	97	INDN	14,040	187	52	ABDE		
YC2OK	98	INDN	13,794	174	66	ABD		
VP5KE	98	TnC	11,781	187	63	A		

Compiled by K9AKS. Updated December 1998.
Band (A = 50 MHz, B = 144 MHz, C = 222 MHz, D = 432 MHz, 9 = 902 MHz, E = 1296 MHz, F = 2304 MHz, G = 3456 MHz, H = 5760 MHz, I = 10 GHz, J = 24 GHz, K = 47 GHz, L = 75 GHz, M = 119 GHz, N=142 GHz, O=241 GHz, P = 300+ GHz).
+ Section record.
* Bands ABCD.

■

Contesting For Fun

Monte (Ron) Stark, KU7Y
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Ron Stark, KU7Y

Tonight I had to make a choice, work on the column or get *TR Log* all set up for the NAQP in a couple of days. With Dennis living only a mile from here it's an easy decision. I'll fix up the computer tomorrow night!

This month we'll start out with a story of a first contest effort. This is from a California YL, Mary Cherry, WN6HYX. Keep in mind what I'm always saying about FUN—and how important it is for a new contester.

Contesting... YL QRP Style

The recent ARRL 10-M Contest was my first 48-hour '*I need to sleep now or pass out'* contest. I worked 80% CW QRP. Being a Novice, I was worth 8 points. What a thrilling and fun weekend it was. I finished with 222 contacts and 50 multipliers for a total of 39,900 points. I did need to practice up for something like this, however.

With the help of the QRP-L gang, I had the pleasure of being a QRP Fox on four separate occasions. Believe me, if you can survive your first four turns as a Fox, you can do anything. My advice is to get out there and have FUN. I even tried QRP RTTY in the recent RTTY Round-Up. My next adventure will be to join AC5SB (formerly N5CMI) in Texas for the ARRL SSB DX Contest.

I'm looking forward to spending the week with Bill at his beautiful station. (Definitely not QRP!) In case you're wondering about the call—WN6HYX—it was my dad's (now SK) from 1968.

72/73, and I hope to work you all in the contests.

Mary, WN6HYX

Thank you Mary. Now we'll hear from a couple of fellows that have been around for a little longer. Many of you know them from SS and several other contests. Here is their story of one Field Day that turned out to be FUN. (Hmmmm, there's that *FUN* word again!)

Field Day 1997 by Lee Schafer, K7QD, and Rod Greene, W7ZRC

Rod and I have been doing Field Day for several years. We have used all types of antennas, rigs and locations here in the great state of Idaho. As usual, we started out on a Friday morning, this time heading north from Boise to Lake Cascade. Our destination was a spectacular spot, located in the mountains in a public campground next to the lake.

We stopped off at Cougar Mountain Lodge to have breakfast on the way up. This would be our last good meal for a couple of days. Neither one of us claim any culinary ability. Eggs, pancakes, bacon and coffee/hot chocolate all hit the spot. We were off to the final stop at the lake.

Everything was on schedule. Installing the antenna, a big lazy H built by Rod, was first on our agenda. Our preferred installation method uses a slingshot with a $^1/_2$-ounce weight and 5-lb test line. Once this line is in place, we use it to haul up heavier nylon $^1/_4$-inch rope. This process is occasionally accomplished in one or two shots, but this time it required several tries before we got the top ropes in exactly the right positions, approximately 80 feet up.

The lazy H is fed with open wire line and a tuner. It's fed with the elements in phase so we can use it on all bands. We set up right at the shoreline. At 80 feet and with the mountains behind us, the antenna had a great pattern out over the lake to the east of us.

The rig we used is a Ten-Tec Omni VI, running off an RV battery. We only use a generator (a small one) to charge the battery if necessary. For logging, we brought an old 286 laptop. In past years we've tried both *CT* and *TR*—this time we decided on *TR*. We made several contacts Friday afternoon and evening before taking a walk, enjoying the scenery and finally hitting the sack.

We like getting to our location and setting everything up on Friday. This gives us time to check out the equipment well before operating starts *and* time to enjoy the outing.

What does this have to do with QRP you might ask? Stay tuned for more...

It was about 11:45 am on Saturday, just 15 minutes before the big event was to begin, when we began discussing the possibility of operating this Field Day *QRP*. We had talked about QRP in the past, but had never tried it. Fortunately, the Omni VI can be adjusted from 100 to 0 W with a simple turn of a knob on the front panel. We did the unexpected and went for it. A big 5 watts output into our lazy H! This arrangement seemed to be working well on the bands that were open at the starting gun—namely 40 and 20 meters.

As the event progressed, we found that all the bands except 10 meters produced many good contacts. Our strategy was to search and pounce, but we were also able to develop a few small 'runs'—always great fun—especially on FD. Most Field Day participants are not experienced contest operators, but many *CW* FD ops are really quite good. This provided the opportunity for a nice QSO rate every once in a while. All our operating was on CW.

The real shocker was that we actually made contacts just as easily as we had running 100 W in previous years. We were both surprised that we ended up with nearly 600 QSOs in about 19 hours of operation (we're both too old to stay up past midnight, plus it gets pretty cool in the mountains at night). I'm firmly convinced that CW works better for QRP contesting than phone. What do you phone operators think?

Would we operate QRP again for Field Day?—*Absolutely!* It certainly is enjoyable not having to charge batteries with noisy generators in the middle of the day—or *worse*—at night. An added benefit was that we did not have any problems with RF getting into the laptop or keying circuit. (This had happened at times in the past when running higher power.)

Of course, having a good antenna and decent equipment is a must. We highly recommend the lazy H and Ten-Tec setup. We think you'll like operating Field Day QRP too, it's FUN! Give it a try sometime.

72, Lee Schafer, K7QD, and Rod Greene, W7ZRC"

Thanks guys. Field Day isn't too far away. This is a great time to take those new hams by the hand and show them how to have fun. Another advantage of starting someone off in the QRP class is that most rigs will not care if they forget to put the antenna switch in the right position or most any of the other little "got ya's" that Murphy can hand out. By the way, congratulations to Dale, KG5U, for that great score in the NA Sprint—over 200 QSOs with QRP!

73, Ron, KU7Y ■

Contest DX-Ventures

The Contest Traveler

Joe Pontek, K8JP
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DXpedition Friendly Antennas

I have read many stories about contest DXpeditions and have spoken with many of the other Contest Travelers. The most common problem that comes to light is the transportation of antennas to and from a location that does not have a ready-to-use antenna system. My first column discussed the "DXpeditionizing" of a Mosley TA-33 Jr so that it would fit into an airline-approved container. Many of the antenna manufacturers are aware of our antenna packing problems. Here are their responses to an inquiry I sent out.

From Force 12:

Thanks for including us in your quest for DXpedition antennas. I believe that we have probably made just about everything possible for DXpeditions antennas that can be checked as baggage. The first was a package for a group from southern California about 9 years ago that consisted of several Yagis designed to fit in a 4-ft box. Since then, we've made all the antennas, including masting, for XZ1N and several others. These all fit into golf bag carriers.

The XZ1N package included a 160-meter vertical, an 80-meter rotatable dipole with a switch box for CW/phone, a 2-element 40-meter Yagi, a 2-element 30-meter Yagi, two 3-element 20-meter Yagis, two C-3s, seven sets of 2-inch masting (24 ft tall assembled), base plates and various hardware.

The 6Y2A M/M team's antennas all fit into six golf bag carriers. This included two 160-meter verticals, four 80-meter verticals, four 40-meter ZR verticals, six 20-meter verticals, six 15-meter-vertical dipoles, six 10-meter vertical dipoles, a 2-element 20-meter Yagi, a 2-element 15-meter Yagi, a 2-element 10-meter Yagi, 24 ft of 2-inch mast, 18 ft of tapered mast, tools and hardware.

We have also fabricated verticals and even a 3-element 10-meter Yagi designed to transport in a briefcase. These are screwed together, riveted or held together with shock cord (like a big tent pole).

The ZL9CI operation is using a 3-element 20-meter Yagi that packs in a 4-ft box.

So, maybe the best way to conclude this is: "What would you like to know?" I would be glad to share some of this information.

73, Tom, N6BT—Force 12, Inc

From Cushcraft:

Beyond a doubt both the current A3S, for a small team, and either the R7000 or R6000 for a one-man operation are our most popular combos.

When a large team is assembled, the choice seems to be for a more elaborate setup similar to the recent ZL9CI trip to Campbell Island. Separate pairs of monobanders traveled to the South Pacific.

If you need any additional information, let me know.—Ed Hammond, WN1I

From Bencher, Inc (Butternut):

We feel that any of our vertical antennas, which ship in a 5 x 5 x 49-inch carton (smaller than a bag of golf clubs) to be DXpedition friendly. Used in conjunction with our GRK ground radial kit, one only has to plant the 2-ft mounting tube, spread out the radials and assemble the antenna. To speed up the tuning process, we would recommend that the antenna be pre-assembled, tuned and marked with the positions of the various clamps (use a paint pen for marking). Then, you only have to position the various clamps at the appropriate marks and you're ready to go! If you wish to have "no tools required" assembly, simply replace all of the hex nuts with wing nuts. Stainless steel wing nuts are available from many industrial supply companies such as *McMaster-Carr*: **http://www.mcmaster.com** (Box of 100 #8-32 wing nuts, 92001A291 $7.10).

73, Michael, Bencher Inc

I hope you have found this information useful, friends. Take care and hope to hear you soon from the new V3 QTH as we slowly clear the jungle and raise the station from scratch.

73, Joe, K8JP ■

Contest Calendar

Bruce Horn, WA7BNM

Here's the list of major contests to help you plan your contesting activity through June 1999. The web version of this calendar is updated frequently and lists contests for an extended period of time. It can be found at: **http://www.hornucopia.com/contestcal/**.

There are lots of contests in the period of March to June, from state QSO parties to international DX contests. Participants in the Florida QSO Party in April should note that the times of the contest have been slightly modified from those used last year. If you're interested in encouraging youngsters to participate in ham radio contesting, consider operating with your son, daughter or neighborhood kid in the Kid's Day Contest in June.

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

March 1999

ARRL Inter. DX Contest, Phone	0000Z, Mar 6 to 2400Z, Mar 7
UBA Spring Contest, SSB	0700Z-1100Z, Mar 13
RSGB Commonwealth Contest, CW	1200Z, Mar 13 to 1200Z, Mar 14
Wisconsin QSO Party	1800Z, Mar 14 to 0100Z, Mar 15
Alaska QSO Party	0000Z, Mar 20 to 2400Z, Mar 21
Ohio Winter QSO Party	0001Z, Mar 20 to 2359Z, Mar 21
Bermuda Contest	0001Z, Mar 20 to 2400Z, Mar 21
BARTG WW RTTY Contest	0200Z, Mar 20 to 0200Z, Mar 22
Russian DX Contest	1200Z, Mar 20 to 1200Z, Mar 21
Virginia QSO Party	1800Z, Mar 20 to 0500Z, Mar 21 and 1100Z, Mar 21 to 0200Z, Mar 22
CQWW WPX Contest, Phone	0000Z, Mar 27 to 2400Z, Mar 28

April 1999

SP DX Contest	1500Z, Apr 3 to 2300Z, Apr 4
EA RTTY Contest	1600Z, Apr 3 to 1600Z, Apr 4
Japan Int. DX Contest, 20-10 M	2300Z, Apr 9 to 2300Z, Apr 11
MARAC County Hunters, SSB	0000Z, Apr 10 to 2400Z, Apr 11
His Maj. King of Spain Contest	1800Z, Apr 10 to 1800Z, Apr 11
UBA Spring Contest, CW	0700Z-1100Z, Apr 11
Australian Post Code Contest	0000Z-2359Z, Apr 17
YU DX Contest	1200Z, Apr 17 to 1200Z, Apr 18
EU Spring Sprint, SSB	1500Z-1859Z, Apr 17
Holyland DX Contest	1800Z, Apr 17 to 1800Z, Apr 18
Michigan QSO Party	1800Z, Apr 17 to 0300Z, Apr 18 and 1100Z, Apr 18 to 0200Z, Apr 19
SP DX RTTY Contest	1200Z, Apr 24 to 1200Z, Apr 25
Helvetia Contest	1300Z, Apr 24 to 1300Z, Apr 25
Nebraska QSO Party	1700Z, Apr 24 to 1700Z, Apr 25
Ontario QSO Party	1800Z, Apr 24 to 1800Z, Apr 25
Florida QSO Party	1800Z, Apr 24 to 0159Z, Apr 25 and 1200Z-2159Z, Apr 25
Six Club 6-M	2300Z, Apr 24 to 0400Z, Apr 25

May 1999

MARAC County Hunters, CW	0000Z, May 1 to 2400Z, May 2
10-10 Int. Spring Contest, CW	0001Z, May 1 to 2400Z, May 2
Massachusetts QSO Party	1800Z, May 1 to 0400Z, May 2 and 1100Z-2100Z, May 2
ARI International DX Contest	2000Z, May 1 to 2000Z, May 2
VOLTA WW RTTY Contest	1200Z, May 8 to 1200Z, May 9
FISTS CW Club Spring Sprint	1700Z-2100Z, May 8
CQ-M International DX Contest	2100Z, May 8 to 2100Z, May 9
EU Spring Sprint, CW	1500Z-1859Z, May 15
Major Six Club Contest (6 M)	2300Z, May 21 to 0300Z, May 24
Texas QSO Party	1400Z, May 22 to 0500Z, May 23 and 1400Z-2000Z, May 23
CQWW WPX Contest, CW	0000Z, May 29 to 2400Z, May 30

June 1999

IARU Region 1 Field Day, CW	1500Z, Jun 5 to 1500Z, Jun 6
ANARTS WW RTTY Contest	0000Z, Jun 12 to 2400Z, Jun 13
TOEC WW Grid Contest, SSB	1200Z, Jun 12 to 1200Z, Jun 13
Asia-Pacific Sprint, SSB	1230Z-1430Z, Jun 12
ARRL June VHF QSO Party	1800Z, Jun 12 to 0300Z, Jun 14
All Asian DX Contest, CW	0000Z, Jun 19 to 2400Z, Jun 20
Kid's Day Contest	1800Z-2400Z, Jun 19
West Virginia QSO Party	1800Z-2400Z, Jun 20
Marconi Memorial HF Contest	1400Z, Jun 26 to 1400Z, Jun 27
ARRL Field Day	1800Z, Jun 26 to 2100Z, Jun 27

■

RTTY Contesting

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This month we bring back Dick Stevens, N1RCT, as guest columnist. (He's becoming a regular!) Dick has been a RTTY contester since he stumbled on the 1994 TARA (Troy Amateur Radio Association) contest. He demonstrates a great deal of knowledge of the new and ever expanding world of RTTY contesting. Dick also runs and maintains a fantastic RTTY Web site: ***http://www.megalink.net/~n1rct/****. This one should be in every RTTY contester's "favorites" list.*

Checking Your RTTY Log

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N1RCT

This article is based heavily on material from Jay, WS7I, Herb, DL2DN, Eddie, W6/G0AZT, Mario, S56A, John, GW4SKA, Jim, VK2BQS, Dan, N1ND, and others whose words I have absorbed over the years. My thanks to them for their frank responses.

Doesn't the Software Do That Stuff?

Software does a lot very well, but there are still problem areas with even the best programs. All the contest chairmen agree that the quality of the software is a very important factor in the generation of accurate logs for contest submissions. Their estimate on the number of logs suffering from problems due to computer logging errors range from a few percent to nearly 50%. Sometimes, these errors are due to problems in a specific contest with a particular program. Even then, John, GW4SKA, a contest manager said: "The best contesters still manage to get their submissions right—that's why they are the best."

Most software authors will utilize several beta testers. They check all aspects of the program, including the final scoring. It's fairly rare to see the actual software make a real mistake these days (other than trashing your entire log!). Nevertheless, it is all too easy to make initial data and set up errors that jeopardize your fine score or cause a contest chairman to mutter "Idiot!" whenever he sees submissions with your call sign. Many of these errors result in a reduction of your claimed score, but the worst are ones that increase your score and leave you open to draconian penalties. Let's consider what we can do to improve the quality of our final submitted log—*before*, *during* and *after* the 'test.

Before the Contest

1. Check that you have the latest version of the software. Problems with a program are often not noticed until days before the beginning of a specific contest, and the fix may come just before the start of the big event.

2. Check that you have the latest update of the country prefix file. The software will use this table to determine what country the call is from and how many points it earns you. These change often.

3. Use the "Super Check Partial" feature of your software. It can identify a call that has never been heard before by the Big Guns.

4. Print out the contest rules and read them. Pay attention to the log submission requirements. Determine if the entry must be "by band" or "chronological," off-time logging requirements and restrictions, band change rules, power classes, DXCluster rules, the exact exchange specified and the log entry needs (time, date, new mult, QSO points, band, etc). Keep the rules handy during the contest.

5. Start with a trial log like *NAQPPRAC*. This way you can log some entries and verify that all seems OK. Check that the date and time are being logged properly. Set up your macros/buffers to conform to exchange requirements in the rules. Log call signs from areas you expect to work and see that the scoring is occurring properly. Start a clean log before the 'test such as NAQP98.

During the Contest

Several contest chairmen point out that the most important checking occurs before you push the key to log a contact. Look at the call sign. Is it in the Partial Check file? Is the exchange correct? Did the program guess the CQ Zone wrong? Did you really get a 599? Does the RST field say "5PA"? Is the software protesting about something you entered? You can do most of this checking while receiving the exchange. And make another check *early on* for the correct date and time.

There are still occasions when there is doubt. I keep a steno notebook handy to record questionable QSOs. Take notes of things like when a state is known but the 2-letter code is guessed (when someone sends "599 in southern Missouri where it is cloudy and..."—you know the type), when a multiplier is not shown but you think it could be, strange looking call signs, on/off time logging (even if your software claims to do it automatically), discrepancies such as receiving AL on the 1st call and KY on a later exchange… Sometimes these errors can't be easily resolved *during* the 'test—take clear notes so they can be corrected *after*.

RTTY offers the best opportunity to get things right—the text is still on the screen for rechecking. I also make liberal use of my message keys marked:"?? AGN," "UR NR," "UR ST," etc. Having buffers set up for the common situations makes it easier to ask.

Sometimes the software will have the capability to store the entire contest text received. You might want to consider activating this. Correcting your errors before you log them, however, is the most useful effort you can make!

After the Contest

First, study your notebook and make any corrections to the log that you noted during the 'test. It is always best to correct the main log rather than scratch up the summary sheet or print outs of the band logs. At this point, you should have an error-free log (to the best of your knowledge). It's probably good enough for a High Claimed Score posting.

Now, output the log in the format required for the contest. I copy the files to a temporary directory (I might ruin them in the checking process). Be alert for any possible problems posted on the reflectors.

Examine the rules again and determine exactly what must be submitted to the contest committee. Your present log

Upcoming RTTY Contests

Mar 6-7	Ukraine RTTY Championship
Mar 14	High Speed RTTY Sprint
Mar 20-21	BARTG WW
Apr 3-4	EA RTTY Contest
Apr 18-19	SP DX RTTY Contest

file will probably include extra information, and could be missing required information. It is a rare event when the software outputs exactly what is required and no more. A good text editor with sort capability is essential to create new files and delete unwanted data such as QSO rate for each hour; I use a shareware program for editing called *BOXER*.

Using a copy of the *testxx.all* log, sort all the lines by call sign and scan down the list, looking for odd things. If you see, for instance, that you worked K5DJ on 80, 40, and 15 meters but K5D on 20 meters, you probably have a busted call sign. All checkers want these entries deleted or zero points claimed. (See the contest's rules.) The ARRL's Dan Henderson, N1ND, says: "Integrity is the key to fair competition. In the spirit of contesting, you should eliminate any busted call sign."—to which Mario, S56A, adds—"…with a tear in your eye."

As you scan down and the call sign prefixes change, check that the proper multiplier was given—especially states/provinces when they count. Worked a rare one or an unusual call sign? Check that the country code is correct, these are forever changing. Check for impossible call signs (no such prefix). This is tedious—but will pay off in the long run by making you more knowledgeable during the next contest. Be suspicious of all suffixes. KL7xx/2 is a common error—W2/KL7xx was really the intended entry. The first will wrongly give you credit for Alaska in most software. Try to change the call sign to the correct format during the contact (and add a note to the summary page). Usually, I repeat the corrected call sign back to the sender as a heavy hint.

Most software has a routine for updating the country list. Check the number of "New Countries" against the multiplier used in calculating your final score. As contests get bigger and bigger, Eddie, W6/G0AZT, points out "Do not expect to be given credit by the contest manager for points or a multiplier that the software failed to detect."

Watch the WF1B/RTTYrite reflectors; other competitors may post information on problems they found. Look at your log with a suspicious eye and understand it all. If something strange still remains, put a comment on your summary sheet pointing out the possible problem. This is much better than the log checker finding it. If you must do some math by hand, triple-check it.

Check each required document with a critical eye. Does it include your call sign? Are the columns labeled? You may have to indicate which is the exchange received and sent. You may have to note that all sent RST reports were 599. The contest rules may say that each page of the log must include a subtotal of points and mults. If you are in 140th place on the HCS list, you probably will get away with a lot. If you plan to be up there in the plaque winners someday, you'd better practice doing it right now, or you could get a nasty surprise on that great day.

The Summary Sheet should be extensively enhanced; be sure your class is explicitly given ("*but everyone knows I don't have an amp*" won't cut it). Include your operating times if required here or in the main log. It wouldn't hurt to add some nice words (hopefully from the heart) for the committee. Make the summary page as polished, complete and accurate as your attached log. This one creates the first impression. Go through all your reports and check that they conform to the rules. Some contests appreciate a green stamp and SASE for results.

Submitting Your Log

There are typically three choices for submitting logs:

1. Traditional printed and mailed logs should always be sent airmail or First Class. Postage may cost up to $4—although $2 is about average. I have mailed about 50 logs with no lost submissions yet. (I was going to share my war story about what happened when one contest re-typed my log for some poorly thought out checking—but I may want to enter that 'test again…) If they are going to do electronic checking, it's better to send in the log electronically so it is not botched up.

2. Mailed diskettes. This is the most dangerous method. It may even be illegal in some countries. The diskette is subject to damage and may be intercepted or erased by magnetic detectors looking for money. The manager may not be able to read the files and get back to you within the contest log submission time limits. Understand the situation thoroughly before relying on it.

3. E-mail attachment. This is the preferred method by all the chairmen that I contacted. (Contacted by e-mail of course!) The cost is near zero, it is easier for them to check, receipt can be confirmed, re-submissions can be quickly requested and made and it is easy to do. One caveat, you MUST rename your files with your *call sign.extension*. The manager may well download 25+ logs at once. If they are all named *WPX.xxx*, it's not difficult to see the possibility that your treasured log will be overwritten or deleted by mistake. Make every effort to get confirmation that your e-mail log was received. A few contests still re-quire a signed compliance statement via the mail, but this is relatively risk-free. The rules may specify the file format, often plain ASCII text files. I suspect that this will be the nearly universal way of submitting RTTY logs within the next few years.

So—That's All There is to It?

I hope so. The rumor mill has it that the level of scrutiny of RTTY contest log submissions will be going up in 1999. (Perhaps not quite to that of the CQWW/SSB.) The days of no deductions at all to 400 submitted logs is probably behind us. As RTTY contesting (and you) get nearer to the "Big League" expect more careful log inspections, and checkers who take the published rules very seriously.

73, Dick, N1RCT

Tip of the Bi-Month

This edition's RTTY tip has to do with Multis and getting an invite. It never seems to fail that someone has a job or family commitment that causes a withdrawal from a long planned Multi-Single or Multi-Multi. You need to be active on the reflector and put forth your name as someone that is interested in joining one of these efforts. It is always fun to gather with friends and enjoy some competition.

73, Jay, WS7I ■

Contest Tips, Tricks & Techniques

Gary Sutcliffe, W9XT
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Contesting with Sunspots

The sunspots have finally returned! How will their return change operating habits and station improvements? We will examine that topic in this installment of CTT&T.

Most of the respondents said that they would be operating more contests now that conditions are improving. Not surprisingly, the ARRL 10-Meter Contest was mentioned by K6LA, WX0B and others as a contest they would be returning to. Activity in the last one was certainly up from the last several years. As a real fan of this contest, I wish more people would operate it during the off-years as it presents its own special challenges. Still, there is no doubt that 500+ kHz of North American and European contesters sure beats hours of listening to a dead band hoping for a patch of sporadic E to appear!

PY2NY mentioned that he would start operating other contests including All Asia, UBA and NAQP. K7BV said he would probably operate WPX and other off-season contests now that conditions will support more activity and competition.

K7BV also mentioned the possibility of interesting contest DXpeditions. Like people living in the northern latitudes heading south to avoid cold winters, Dennis and other contesters have headed for the Caribbean and other easy-to-reach areas for improved contest propagation. With better propagation capable of supporting openings from more distant and exotic locations, he is considering other options. Dennis dreams of a small transceiver with a dipole strung between two trees deep in the jungle someplace.

Operating Strategies

W4AN notes that improved conditions will help contesters in some of the more remote geographic locations. This is especially true for those located in high geomagnetic latitudes such as Gord, VE6SV, and Ari, OH1EH. Ari notes that top European honors are only possible from his location during sunspot maximums.

According to WX0B, band selection will become more important to multi-single stations. The same will be true for single-operator all-band efforts. With higher solar flux numbers there will be times when more than one band will be able to support good run rates. Picking the right one will be critical for a winning score.

VE6SV predicts that casual operators will migrate from the low bands to the higher ones because it will be more fun for them. They may not even operate the lower bands at all. Despite this, the low bands will remain important for multipliers.

K7BV and WX0B are predicting some awesome scores in the years to come. Many contesters have made major improvements in their low band stations, as well as gaining knowledge and operating skills on those frequencies. The extra multipliers that can be gained on the low bands combined with the big QSO totals available on the higher bands should add up to a lot of new records.

Station Improvements

Most serious contesters continuously improve their stations. The focus for the last four or five years has been mainly on the low bands. This will now shift to the higher bands, and a number of readers including K9ZM and PY2NY mention new antennas for these frequencies. Stacked beams are becoming very popular according to WX0B.

OH1EH mentions work on building a first class station in the Aland Islands. OH0Z became operational this last fall. His group would not be spending the money required if it were not for the improving conditions. From his own station, Ari is planning on a 10-meter stack to go with those on 15 and 20 meters.

K7BV feels that the biggest improvement most stations can make is to add more antennas that allow simultaneous beaming in different directions. Dennis notes that it will be more common for a band to be open to several areas at the same time.

Readers of this column will recall that I have been a big believer of this philosophy. During the last peak, I had a 4 over 4 stack of Yagis on 10 meters. As the sunspots faded, I replaced the upper Yagi with a Cushcraft A3. During this past summer, I added a second A3 lower on that tower fixed toward Europe. I also have a TH7 on a second tower. My switching system allows feeding these three antennas in any combination. Sometimes I use this to call CQ in multiple directions. This often brings multipliers from secondary directions. In search and pounce mode, it allows me to instantly switch to the correct direction without waiting for the beam to turn. I really miss this flexibility when guest-operating from other stations that don't have it.

Perhaps the best confirmation of the return of interest in contesting occurred during the last CQWW CW Contest. During the North America to Europe opening there were many stations above 21.100 and 28.100—simply because there was not enough room below for all the stations. K7BV talks about the return of the fire in his gut for contesting. A lot of other contesters I have talked to feel the same way. Take advantage of it while you can! In a few short years, we will be headed back to the sunspot minimum.

Thanks go K6LA, K7BV, K9ZM, OH1EH, PY2NY, VE6SV, W4AN and WX0B for their comments on this topic. Perhaps you will consider sending in your comments or ideas for future topics next time?

Topic for May-June 1999 (Deadline March 10)

Tips for small pistols and new contesters

What suggestions do you have for the small pistols and beginning contesters? What contests should they concentrate on? What are the best strategies for them to use?

Topic for July-August 1999 (Deadline May 10)

Domestic contest strategies

What special strategies do you use for domestic contests such as Sweepstakes, NAQP and the Sprints? Which are your favorite domestic contests and why? What operating class do you prefer? What antennas do you find most effective for each band?

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. ■

International Contests

Joe Staples, W5ASP
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It's Even Better Now!

Now that your appetite for international contests has been sharpened by Fred, K3ZO's, splendid article, presented in this column in the last issue of the *NCJ*, let's consider some recent events that should definitely add to your operating pleasure this year.

Joe Staples, W5ASP

The best news is that 10 meters is "back"—alive, well and full of signals, as those of you who operated the recent CQ WW and ARRL 10-Meter Contests very well know. 10 meters offers several rather unique attractions for our intrepid "international contester." First, its return means that Europe is no longer the exclusive domain of

Upcoming International Contests

RSGB Commonwealth Contest	13-Mar-99
Bermuda Amateur Radio Contest	20-Mar-99
Russian DX Contest	20-Mar-99
SP Polish DX CW Contest	03-Apr-99
Japan International DX CW Hi Band	09-Apr-99
King of Spain Contest	10-Apr-99
YU DX Contest	17-Apr-99
Holyland DX Contest	17-Apr-99
Helvetia Contest	24-Apr-99
ARI International DX	01-May-99
CQ-M International DX Contest	08-May-99
Baltic Contest	15-May-99

Notes
1) Check *QST* or *CQ* magazine for rules.
2) With few exceptions, logs and summary sheets must be postmarked within 30 days of the contest.

1998 WAE DX Contest—CW

	Pts	QSOs	QTC	Mults
Alaska				
KL7HF	135546	600	589	114
KL7/K9AA	22540	301	21	70
US Virgin Island				
WP2Z (op. KD4D)	1767469	1964	1955	451
#1 North America; #3 Non-Europe				
Antigua				
V26E	1731935	1792	1779	485
#4 Non-Europe; DXpedition Plaque				
Canada				
VO1MP	49665	237	236	105
VE2FFE	2346	35	34	34
VE3EJ (op UT4UZ)	1203540	1543	1543	390
#8 Non-Europe				
VE3IAY	38016	149	148	128
VE4JB	10443	89	88	59
USA				
KQ2M/1	409845	771	764	267
KC1F	344598	727	727	237
K1XM	339834	644	610	271
K5ZD/1	222888	504	500	222
AA1SU	23302	191		122
AB1BX	9048	104		87
K1CN	4672	63	10	64
WR1P	2516	40	34	34
K2LE	813100	1198	1152	346
W2YC	263415	526	507	255
W2YR	245920	465	463	265
N2ED	227535	583	572	197
K2SX	206586	503	495	207
WK2G	148770	429	426	174
K2QMF	143013	371	370	193
W2EZ	35640	162	162	110
W2OX	10878	61	50	98
KD2HE	2550	40	35	34
AA3B	826254	1177	1177	351
W2UP/3	581210	903	902	322
K3WW	557514	1001	976	282
N3BNA	548416	836	836	328
W3BGN	519064	806	806	322
N3DL	384956	679	667	286
K3IPK	135503	379	378	179
WF3M	107325	338	337	159
K3CT	29591	119	114	127
W3FQE	3952	52	52	38
K3WWP/QRP	3220	70		46
W4AN (op K4BAI)	768897	1172	1137	333
WD4AHZ	142788	440	436	163
W4ZW	61104	203	199	152
WD4JRA	57232	197	195	146
K4OGG	56448	226	222	126
WO4O	50336	176	176	143
K4AAA	10920	100	95	56
AA4GA	7276	57	50	68
N4MM	1302	31		42
K5YAA	251680	605	605	208
KG5U	56974	237	230	122
N5KC (op W5ASP)	49504	238	238	104
WQ5W	6200	65	59	50
W5NR	5529	49	48	57
K5VG	5046	48	39	58
N6AW	348465	921	866	195
AD6DO	145542	762		191
W6NKR	22496	157	147	74
AC6DD	18630	207		90
K6III	3150	75		42
N6JM	2750	55		50
W7IR	197960	707	707	140
KO7X	26535	155	150	87
K7TG	4902	65	64	38
KA7FEF	864	26	10	24
AA8U	198340	471	469	211
W8JGU	160792	400	396	202
WZ8A	89392	303	301	148
KF8TM	84177	299	298	141
N8LM	22015	130	129	85
K8CV	7524	60	54	66
K9DX	519554	1003	1003	259
KJ9C	31350	209		150
K9NI	14857	92	87	83
K9GY	14317	139		103
W0SF	41976	198	198	106
KG0UA	40135	175	174	115
K0RX	20296	118	118	86
K0RY	14288	94	94	76
Multi-Operator				
N3RD	1474461	1761	1758	419
#1 Non-Europe				
K2NG	1467544	1781	1781	412
#2 Non-Europe				
KC1XX	1334016	1582	1582	386
#4 Non-Europe				

those on the "Right Coast." Everyone now has a good shot into Europe. And that's where it's most often at in today's contest scene.

Second, the consistent availability of good propagation on 10 meters opens up the 15 and 20-meter bands by shifting a lot of their activity over to 10. That means that there's more room for the modest station to romp and stomp. Third, there are many, many new operators all around the world who have never had the 10-meter experience—50 W and a wet noodle to work the world. This is new territory with lots and lots of room and unexpected experiences for them... Whatever the reason, they are eager to work YOU. And as most of you well know, 10 doesn't require the heavy equipment needed to hammer through the typical 20-meter QRM. Now you can give your neighbors a break, turn off the amp and still tick 'em off at a good rate.

Apparently, lots of folks have already begun to realize that there has been a pervasive change that makes operating in the international contests more attractive. Just take a look at the results presented this month. More entries and definitely higher scores.

And a word to the wise. For those of you who view the mid-February (ARRL DX CW) to late May (CQ WPX CW) period as a vast CW wilderness, take a look at the listing of upcoming events on page 38. There's some really good weekends there for the CW ops that want to keep their skills honed to a fine edge and have fun doing it. With 10, 15 and 20 all hopping, now is also a fine time to try the SO2R game, if you're so inclined.

CQ-M International DX Contest 1998

North America
Single operator—Multi-band

CW		*Mixed*		
AA3B	82720	K2PS	150612	9th World
W4AU	46272	VE6JO	40645	
KM5G	33264	XE1VV	2442	

Multi operator—Multi-band	KT0R	33075
Single operator—7 MHz CW	XE1RGL	684
Single operator—14 MHz CW	WA8RCN	1296
WW2 veteran	W2/U5WF	14357

Call	*Class*	*Total*	*QSOs*	*QSO Pts*	*Mults*
Canada					
VE6JO	SOMB-MIX	40645	357	739	55
Mexico					
XE1RGL	SO-7-CW	684	24	57	12
XE1VV	SOMB-MIX	2442	43	111	22
USA					
AA3B	SOMB-CW	82720	320	880	94
W4AU	SOMB-CW	46272	253	723	64
KM5G	SOMB-CW	33264	234	594	56
WD4AHZ	SOMB-CW	3105	48	115	27
WA8RCN	SO-14-CW	1296	48	144	9
K2PS	SOMB-MIX	150612	419	1141	132
KF6HAN	SOMB-MIX	240	10	30	8
W2/U5WF	WW2V	14357	108	293	49
KT0R	MOMB	33075	417	675	49

1998 VK/ZL Contest

USA

Phone		CW	
K7TG	4424	K7TG	11500
KK7JP	1176	K3ZO	9632
N4MM	583	K2LE	5544
KB9JF	120	W5FO	4292
WA7ITZ	48	W2FJ	2688
KL7FAP	12	W7LT	1920
		KT5Q	487
		K2HT	315
		N0XW	4
		Canada	
		VE7VDX	85

1998 ARI International DX Contest

Call	*Class*	*QSOs*	*Mults*	*Pts*
USA				
AA3B	SO-CW	109	75	55594
W5FO	SO-CW	27	23	1911
KB0C	SO-SSB	12	9	704
N2LQQ	SO-SSB	4	3	26
AA9VH/M	SO-SSB	3	2	14
K3WW	SO-MIX	123	76	74089
K4RZ	SO-MIX	33	29	671

1998 UBA Contest

Call	*Category*	*Score*	*Place*
CW			
N4MM	SO/15M	8757	#12
K2SX	SO/20M	11000	#33
W9GXR	SO/AB	2686	#116
Phone			
N4MM	SO/15M	19764	#12
W7USA	SO/20M	1176	#63
K1BV	SO/AB	12927	#79
KB0C	SO/AB	7248	#98
AB1BX	SO/AB	3572	#121

1998 All Asian DX Contest—CW

Canada				
Call	*Band*	*QSOs*	*Mults*	*Pts*
VE7XR	14	530	139	73670
VE3HX	14	28	21	5088
VX7AHA	28	437	114	49818
USA				
W7CB/6	14	261	97	25317
W5FO	14	120	60	7200
W0HW	14	77	47	3619
W9GXR	14	77	47	3619
N5XG	14	54	38	2052
K6III	14	50	35	1750
W6OK	14	53	30	1590
W0SF	14	50	30	1500
K6JG	14	37	30	1110
N6JAB	14	35	27	945
K4BAI	14	29	24	696
N4MAB	14	14	10	140
WA6FGV	21	34	18	612
N6TV	AB	1135	351	398385
N6MU	AB	867	300	260100
N7ZE	AB	896	277	248192
W7GG	AB	689	251	172939
W6BH	AB	597	219	130743
K3ZO	AB	247	115	28405
K6CU	AB	146	70	10220
WU4G	AB	71	47	3337
W6FSJ	AB	44	38	1672
W7YS	AB	34	24	816

1998 Holyland Contest

Call	*Category*	*QSOs*	*Mults*	*Score*
K1DWQ	SSB	105	56	6048
N4MM	Mixed	102	51	5151
K2WE	Mixed	88	51	5049
K2XF	Mixed	31	19	589

■

The First Honor Sprint

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It always happens right after the NA Sprint as the scores are being posted. "Boy, I sure had a good time. Too bad there aren't more Sprints!" "Couldn't you guys run one EVERY month?" I'm sure the guys writing up the results cringe when they read these enthusiastic entreaties. But the Sprints *are* fun, aren't they?

The problem with trying to run a lot of Sprints through the year is the log-checking, results tabulation and publishing that are all a lot of work. That is too much work to run a whole batch of contests without more volunteers. Also, the Sprints are very competitive and logs have to be really checked well. What to do?

Well, it occurred to me that the fun is really in the running. If the idea was to just have more fun and not necessarily create more super-competitive events, then maybe we could do away with some of the post-run non-fun and just post our scores? Thus was born the *Honor Sprint*. Run for four hours, raise your right hand and post your score.

Joe Staples, W5ASP, volunteered ("*This time*," said Joe) to collect and tabulate the results off the reflector (electronic submissions only). Scores had to be posted by Monday night after the contest—band totals and stuff like that were optional. Teams? Sure—go for it! October 17 was the date—don't be late—same rules as always. Would anybody show up?

Not as many as for a regular Sprint, as it turns out, but enough that we had fun. The four-hour time period turned out to be a little much and there have been several suggestions for the next one to make things a little busier. Or maybe we ought to stand pat and keep publicizing it in hopes that more activity will build up to the point where there is sufficient activity to fill four hours. Your ideas are welcome—send 'em to **hwardsil@wolfnet.com**.

Here are the results—compiled by Joe, W5ASP, from the 3830 reflector.

Results: The First Honor Sprint

Call	*Score*	*Qs*	*Mults*	*Class*	*Team*
K7RAT	4020	134	29	SO/LP	RDO
K7RAT (Revised)	3570	119	29	SO/LP	
(QSYed QSOs removed—see discussion in text)					
K0RF	2938	113	26	SO/HP	
N0SS	2842	99	29	SO	
K6AW	2496	96	26	SO/HP	RDO
W7GG	2350	95	24	SO	
W4OC	2040	85	24	SO/LP	
K9NX	1980	91	22	SO/HP	
AA3B	1694	77	22	SO/HP	
N0AX	1584	72	22	SO/LP	RDO
W5ASP	1562	71	21	SO/HP	
KK7GW	1440	72	20	SO/LP	RDO
WD4AHZ	1342	61	22	SO/LP	FCG
K1HT	1278	72	18	SO/LP	
KM0L	1254	57	22	SO	
KI7Y	1098	61	18	SO	RDO
N7WA	918	51	18	SO/LP	RDO
K0A (Op K0RX)	675	45	15	SO/LP	
N7FO (Op KN5H)	645	38	17	SO/LP	
AD6DO	629	37	17	SO	
NM5M	608	38	16	SO	
K1KY	420	30	14	SO/HP	TCG
K7SS	36	12	3	SO	

Team Results

Rush Drake Orchestra (RDO)	11106	K7RAT, K6AW, N0AX KK7GW, KI7Y
Florida Contest Group (FCG)	1342	WD4AHZ
Tennessee Contest Group (TCG)	420	K1KY

Regarding K7RAT's revised score, there was some discussion on the reflector after the contest regarding moving stations from band to band by sending "QSY <frequency>?" after a QSO. This usually isn't done in the regular Sprints. When things slowed down, this was a good way to get another few QSOs in the log.

There was no clear decision as to whether the request for a station to QSY was considered a "CQ" without moving the required 5 kHz first. Consensus was not strong, but it eventually came down to an opinion that asking a station to QSY to another band was okay if you were responding to a CQ or if it was your frequency on which to send CQ. Number 3 below seems the most questionable—almost like a round robin QSO.

1) OK—N0AX: CQ Sprint W7FR: QSY 20? N0AX: QSY

2) OK—N0AX: CQ Sprint W7FR: W7FR (dupe) N0AX: QSY 20? W7FR: QSY

3) OK?—N0AX: Calls CQ, W7FR answers, has a good QSO, then W7FR asks "QSY 20?"

4) Not OK—N0AX: Calls CQ, W7FR answers, has a good QSO, then N0AX sends "QSY 20?"

K0RF and K7RAT both removed these QSOs from their log, but it would be helpful to hear from the Sprint's Founding Fathers if this has ever been debated and what the result was.

International scoring controversy notwithstanding, this was a fun, if lightly attended event. Watch the contest reflector for more information about the next date for an Honor Sprint. It looks like we'll do the next one in April or May. Until then—keep your honor bright in all the contests you enter and have fun!

73, Ward, N0AX

Soapbox

Had to use "Honest" Abe for the name here—distant relation, actually. N6TR seemed to get into the spirit the most and was busily vacuuming up QRPers, DLs in the WAG (waggers?), innocent passers-by, and the like. I don't think he was able to work many JARTS RTTYers, though.—*N0AX* Where was everyone? GL this contest season!—*AA3B* Got up early to do the AP Sprint (5:30 AM local), worked outside all day in the cold rain, and started ½ hour late. After 2 hours, I had enough and sacked out on the couch to watch reruns of *Mash*.—*N7WA* For cryin' out loud...! Where was everyone??? That was WORK! Wound up working the guys in the QRP Contest. (Thanks to all of them that did work me. They were quite courteous with exchanging data for BOTH contests with me.)—*N0SS* Thanks!—*NM5M* Imagine my horror, when taking a break after the Padres sad loss to those damn Yankees, I read on 3830 reflector digest, which comes in every night at around 8:45, that the HONOR SPRINT was on today! Not only TODAY, but NOW, and 10 minutes 'til the end!—*K7SS* I had reserved this callsign for the Scouting Jamboree on the Air. Lots of ?? about the callsign during the sprint—evidently people still aren't used to working the 1x1's.—*K0RX* (*at K0A*) I got off to a flying start. This one hasn't yet reached critical mass.—*K1HT* I decided to operate a while and at least activate that rare TN multiplier.—*K1KY* This was hard work. Thanks for the Qs.—*K6AW* More like a mud wrestle or a scavenger hunt than a sprint.—*K7RAT* Was real confusing with so many contests going at once. On 40 had a QRP 'test, some kinda Euro 'test and JARTS RTTY, plus the Sprinters all vying for the same 20 kHz of 40 meters.—*K9NX* Started off pretty good, but once you worked everyone, it sure slowed down.—*WD4AHZ*

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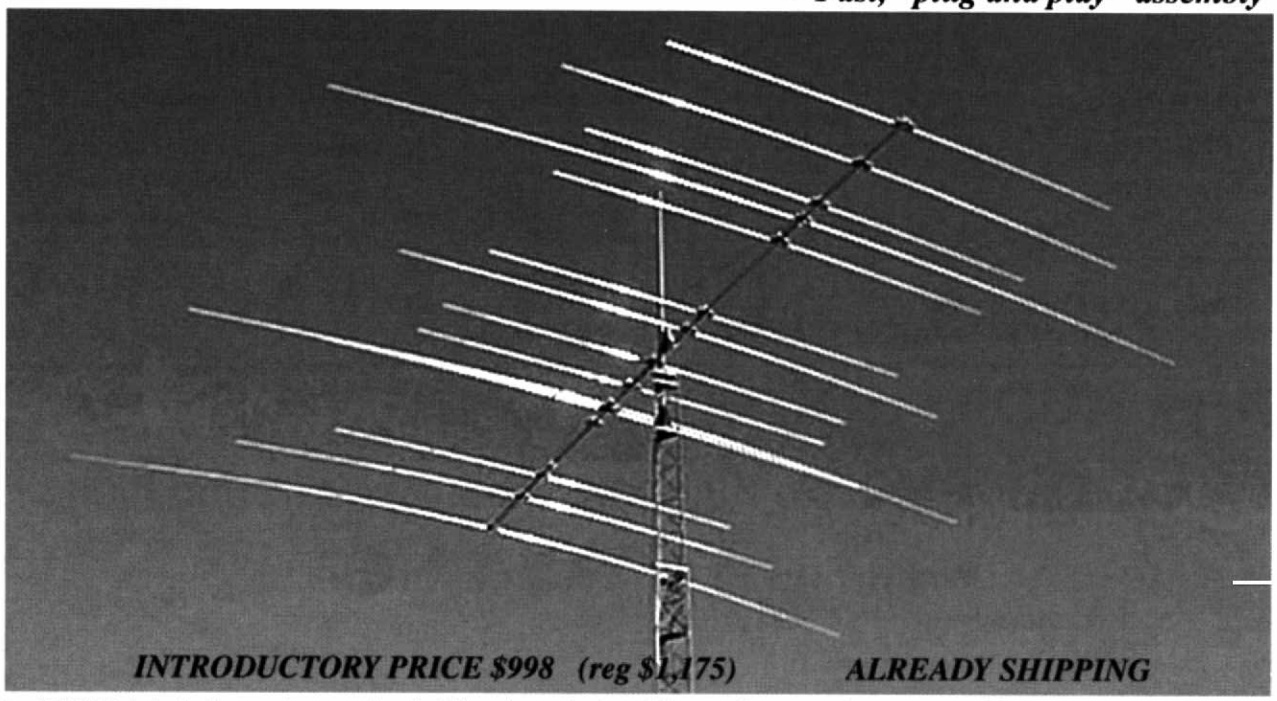

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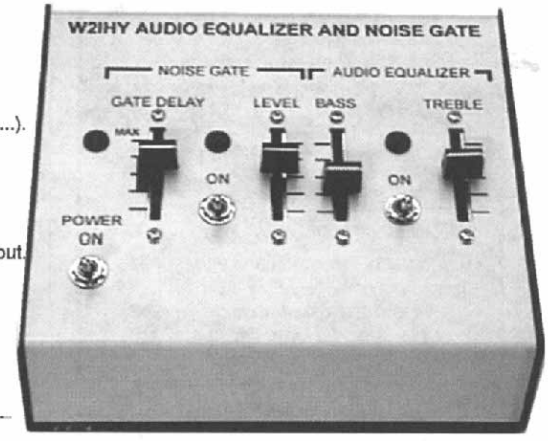

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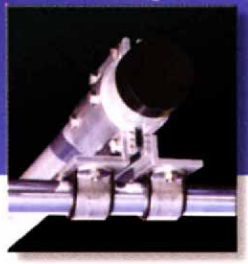

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Turning Radius, ft (m)		21.7 (6.61)	20.0 (6.09)
Boom Length, ft (m)		28 (8.53)	18 (5.49)
Boom Diameter, in (cm)		2-1/2 (6.35)	2-1/2 (6.35)
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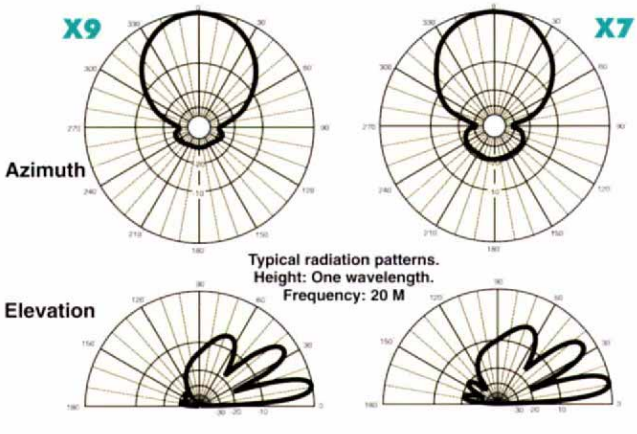

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