

Results of the 1998 CQ WW CW Contest

BY BOB COX*, K3EST

Contesters were hoping that conditions would improve. At least they were hoping that CW would be better than the variable phone weekend had been a month earlier. As the CW weekend approached, thousands of contesters from all over the world were putting the final touches on all their preparations to do well in the contest. What happened during the CW weekend was unexpected and wonderful. For most of the world, conditions were fantastic on all bands. The 1998 CQ WW CW will be remembered for some of the best conditions across the spectrum many of us have seen in a long time. This is best summed up by "a contest to remember for all time"—W9RE (N9RV).

After all the logs were counted, there were a total of 3345 CW logs, which is only a little down from the SSB total. It seems that CW can generate a lot of fun for many people. So how did it all turn out? Keep reading to find out.

High Power

The battle for the top spot this year was as competitive as ever. Who are the best operators in the world? Each year the box of top ten finishers in the WW gives an answer to that age old question. These operators travel to places around the globe where the propagation might be a little bit better than at your QTH. But once they get there, they have to do everything right, because the pressure of the competition is tremendous.

Jose, CT1BOH (P4ØE), handled the pressure pretty well. He jumped on a jet and made his way to the QTH of Jacky, P43P, which is located on the north shore of Aruba. This is a wonderful station in an ideal location. P4ØE's big low band numbers helped him not only grab the top spot in the world AB, but led to a new all-time record as well. Fighting off the sea's corrosion on the towers and antennas long enough to finish in second place was Ville, OH2MM, who has won the CQ WW more times than one can remember. It was only a little over a year ago when nothing existed at the HC8N QTH except shrubbery. Now Trey, N5KO, has keyed this well-crafted new station to third world high, and the view isn't bad either. Kudos are also due to top ten finishers K4BAI (John set a new North American record.) and DL6FBL—operators of 8P9Z and CN8WW, respectively—for their extremely accurate logs.

The outstanding conditions allowed almost every corner of the European continent a shot at the SOAB standings. GIØKOW and S58A slugged it out for 48 hours, and when it was all done, it was Andy, GIØNWG at KOW who prevailed. The British Isles stations used their low



Jan, 4X1VF.

band advantage to capture four of the top ten spots, but super efforts on the higher bands helped the central and southern EU boys to the glory as well.

What was happening in the USA? A lot! Three stations finished with over 7 million points. The competition was the best it has been in years. Top USA honors went to Greg, W1KM. He edged out Bill, W4AN, who in turn just edged out Jeff, K1ZM. Special mention must go to W9RE operated by Pat, N9RV. What a terrific score from Indiana.

Low Power

You can sure work a lot of stations running a hundred watts. Just look at the score of AA3B, who keyed V26K to victory. Bud set an all-time low power record with his fine accuracy and skills. In 1997 it was VP2EB, and now V26K. What will Bud try this year?

In the low power USA category the old record was totally demolished by Jeff, N5TJ, with over 3.1 megapoints. Is there anything this guy can't win? We took some time to ask Jeff why he has ventured into the low power category; his answers are very interesting: "I am a two-radio man, and if I operate QRO too much interstation QRM to use 2 radios. One radio = no fun. QRO and neighbors don't go together for 48 hours when living on a one-third acre lot. I can't be competitive QRO from home."

We also asked about antennas: "A single crankup w/160 shunt fed, 80 meter sloper,

Force 12 402/204 interlaced, homebrew (NW3Z design) 515/510 interlace, A3 on side-mount at 30 feet." While that's not a trapped dipole in the attic, it sure isn't stacked mono-banders either. Incredible job, Jeff! Second place went to W2TZ with 2.6 meg, and third slot went to N8AA with 2.4 meg.

In Europe after the dust settled Franc, S59AA, operating from his home in the suburbs of Ljubjana, pushed his station to claim top honors. At the other end of zone 15, second-place Europe went to Gediminas, LY3BA. Third place was won by HA1CW. But the real story in Europe was that all ten top scorers finished within 500K of each other. That's intense!

QRP

QRP is an interesting category. One entrant runs 100 mW while the next runs 5 W. No other category has such power differences. That's what makes QRP fun. It's a personal challenge.

The QRP scores are once again crossing the mega-point level. Congratulations to HA2SX for winning it worldwide with just over 1 meg. Second-place world and first-place USA went to N6MU from . . . California! John has done the seemingly impossible; he won both modes QRP USA from the West Coast. Wow! And his score of 857k is nothing to be embarrassed about either. Third-place world and second-place Europe went to LY2FE with just under 800k points. These are very impressive scores for stations running just 5 watts. Second- and

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TEAM CONTESTING

- 1. The Team: 55,395,494.** P4ØE (CT1BOH), EA8EA (OH2MM), CN8WW (DL6FBL), C4A (9A3A), WP3R (DL2CC).
- 2. Handkey Team #2: 27,107,560.** K6LA, N2NT, W1KM, WC4E, W9RE (N9RV).
- 3. Handkey Team #3: 23,826,619.** V26K (AA3B), W4AN, K1TO, N4ZR.
- 4. Handkey Team #1: 21,760,658.** DKØMM (DJ7IK), VP5GN (K5GN), AA4S, W6AX (N6IG), N4AF.
- 5. Contest Club Finland #1: 21,620,846.** OH5LF (OH1WZ), OH1MM, PZ5JR (OHØXX), OH6RX, XX9X (OH2PM).
- 6. Handkey Team #4: 14,026,178.** N5TJ, NA2U, K3MD, WT1O, W1WEF.
- 7. Team Nippon: 13,160,991.** FG5BG (JF2DQJ), V8A (JO1RUR), 9M2TO (JAØDMV), 9M8YY (JR3WXA), 9M6NA (JE1JKL).
- 8. Moscow Contest Team: 10,534,747.** RZ3BW, RZ3AZ, RA3CW, RX3APM, RO3A.
- 9. The Dream Team: 6,874,159.** LY2KM, LY2MM, LY2OX, LY5W (LY1DR), LY6M (LY1DS).
- 10. Team Chihuahua Uno: 4,818,784.** W4PA, WO4O, N4IR, NN4T, N4KN.
- 11. ZA-TE Plus Team: 4,275,169.** 9A9A, 9A5W, 9A6A, 9A3GW, 9A2EU.
- 12. Russian Woodpeckers: 3,931,262.** UA1OMS, UA1OZ, RA1OJ, UA1OMX, RW1ON.
- 13. Contest Club Finland #4: 3,671,941.** OH3WW, OH8BQT, OH8LAE, OH2LU.
- 14. **Contest Club Finland #3: 3,043,554.** OHØJJS (OH6LI), EA8/OH2BCI, OHØZ (OH2MAM), OH1F (OH1NOA), OH1F (OH1MDR).
- 15. Contest Club Finland #2: 2,717,112.** OH4JFN, OH5BM, VR2/OH6YF, OH9DX.
- 16. Contest Club Finland #5: 1,746,629.** OH2BSQ, OHØJJS (OH4JLV), OH6KN, OH1ZAA.

***Single Band Team.*

just edged out the OH2U team formerly known as OH2HE.

In Japan at the mountain QTH of JA5BJC, they cranked up their towers, set up the station, and keyed their way to a new all-time Japanese multi-multi record. Congratulations.

Team Contesting

Get five contesters together from anywhere in the world and you have a team entry in the CQ WW. That's just about what "The Team" did with representatives from four continents. Doubling the total score of the second-place team, "The Team," had four finishers in the top ten world box. In terms of real competition, the battle for second through fourth place among Handkey teams was intense. Team Handkey #2 took second place with a group from five USA call areas.

Joining a team does not in any way prevent you from submitting your score for your local club. Team contesting allows for some interesting global alliances and more fun for everyone.

Clubs

A lot of club spirit plus getting everyone on the air, coupled with DXpeditions, is the formula for a winning club effort. The number one club this year was the Yankee Clipper Contest Club. Through a well-orchestrated campaign of phone calls and just plain hard work, this NE USA giant set the all-time club record of 460 million points! Not far behind was perennial club winner, the Frankford Radio Club. The YCCC, FRC, and third-place Potomac Valley Radio Club launched many DXpeditions. Last year we predicted that it might not be long before the top three clubs would top a billion points. Well, this year 1.06 billion points were accumulated by the top three alone!

Setting a new DX club record with over 164 million points generated by a determined club effort was the Bavarian Contest Club. When you look at the results, you will find many DXpeditions mounted by the BCC, second-place finisher Contest Club Finland, and frequent winner, the Rhein-Ruhr DX Association. The

third-place USA went to N1TM and K1RC, respectively.

Assisted

It took a while, but the winner of the assisted category *beat* the all band high power category and by quite a bit. All those years of learning what to do, when to look at the packet screen, when to avoid screen chasing, paid off big time for Charlie, K3WW. Not only did he win, he set a new USA record. Second place went to Yankee Clipper power house K11G, and Noah, K2NG, took third. The top European scorer was Igor, RZ3BW. This was the first time that the assisted category was won so far east in Europe. Second place went to Bernd, DF3CB, operating from Munich next to a recording studio. Quite a FB effort, Ben! Special mention must be made of the far Pacific effort of KH2/N2NL. Stationed on Guam, he made good use of his location.

Multi-Single

The multi-single category is one of the most competitive. There were over 275 entrants who spent long hours building their stations and training their operators. The 1998 contest final MS results produced some of the most interesting final scores in this category in many years. The world winner was K1AR. Yes, a USA MS took the world top slot. Not only did the three-man crew do that, they set a new North American record. It has been a *long* time since a USA station finished #1. The #2 world and #1 Europe station was TM2Y operating from F6BEE's station in the French countryside. Their log was very accurate. Third-place world was Sig, N3RS, and his crew in eastern Pennsylvania. Second-place Europe and #4 world was EA6IB operating from the lovely isla Ibiza. Congratulations to all the winners, who showed us what is possible when conditions really are good.

Multi-Multi

The multi-multi stations are the beacons of contesting. They provide benchmarks for all of us. A sure sign of improving conditions was that 12 stations broke 20 million, compared to only the top three last year. In a reversal of fortunes, the

6Y2A team defeated the Voodoo group at 5V7A. The 6Y2A crew planned for months what their strategy would be. They used verticals, almost exclusively, set up on the beach of the north coast of Jamaica. Their hard work sure paid off with a new world multi-multi CW record, accomplished from a two-point area! Second place went to the "Voodudes" who did a marvelous job after scrambling to relocate when their hotel was not available.

Three North American stations finished in the top six box, with T11C operating at T12CF's QTH coming in third and J6DX at number six. The crew at EA9EA finished second in Africa and number four overall. A61AJ at number five was the highest scoring multi-multi from Asia setting a new Asian record. For the USA championship, Matt and his team at KC1XX finished first again this year, just ahead of W3LPL and K3LR. Europe was lead by DFØHQ, the famous quad station located in eastern Germany. They



Julio, H13K.

TROPHY WINNERS AND DONORS CW

SINGLE OPERATOR, ALL BAND
World
P4ØE (Opr. Jose Carlos Cardoso Nunes, CT1BOH)
Donor: Albert Kahn, K4FW
W9IOP Memorial

World Low Power
V26K (Opr. Joseph Trench, AA3B)
Donor: Slovenia Contest Club

World QRPP
Peter Kalocsa, HA2SX
Donor: Gene Walsh, N2AA

World Single Operator Assisted
Charles Fulp, Jr., K3WW
Donor: Snake River Contest Club

U.S.A.
Gregory Cronin, W1KM
Donor: Frankford Radio Club

U.S.A. Low Power
Jeffrey Steinman, N5TJ
Donor: North Coast Contesters

U.S.A. - Zone 3
W6AX (Opr. James Pratt, N6IG)
Donor: Bill Fisher, W4AN

U.S.A. - Zone 4
W9RE (Opr. Patrick Barkey, N9RV)
Donor: Bill Fisher, W4AN

Canada
Phil Goetz, N6ZZ/VE2
Donor: CQ Magazine

Caribbean/C.A.
8P9Z (Opr. John Laney III, K4BAI)
Donor: Chuck Shinn, W7MAP

Europe
GIØKOW (Opr. Andrew Williamson, GIØNWG)
Donor: Edward Bissell, W3AU

Europe - Low Power
Franc Bogataj, S59AA
Donor: Scott Jones, N3RA, & Tim Duffy, K3LR

Africa
EA8EA (Opr. Ville Hiilesmaa, OH2MM)
Donor: Gordon Marshall, W6RR

Asia
C4A (Opr. Ivo Pezer, 5B4ADA)
Donor: Chuck Shinn, W7MAP

Japan
Satoshi Hara, JH5FXP
Donor: Japan Crazy Contesters Club

Oceania
9M6NA (Opr. Saty Nakamura, JE1JKL)
Donor: Peahi Contest Club

South America
HC8N (Opr. Trey Garlough, N5KO)
Donor: Venezuela DX Club

SINGLE OPERATOR, SINGLE BAND
World - 28 MHz
ZW5B (Opr. Randall Thompson, K5ZD)
Donor: Joel Chalmers, KG6DX

World - 21 MHz
5X1Z (Opr. Mats Persson, SM7PKK)
Donor: Don Busick, K5AAD (N5JJ Memorial)

World - 14 MHz
Jaromir Klimosz, 5NØ/OK1AUT
Donor: W2JT Memorial (North Jersey DX Assn)

World - 7 MHz
V8A (Opr. Hajime Kato, JØ1RUR)
Donor: Alex M. Kasevich, VP2MM/4

World - 3.5 MHz
Martin Huml, IH9/OL5Y
Donor: Fred Capossela, K6SSS

World - 1.8 MHz
VA1A (Opr. Yuri Blanarovich, K3BU)
Donor: Kenneth Byers, Jr., K4TEA

USA - 28 MHz
Robert Patten, N4BP
Donor: Wireless Institute of the Northeast Treasury

USA - 21 MHz
David Donnelly, K2SS/1
Donor: Wayne Carroll, W4MPY

USA - 14 MHz
Walter Kornienko, K2WK
Donor: Northern Illinois DX Association

USA - 7 MHz
David Blaschke, W5UN
Donor: W6AM Memorial (Jan Perkins, N6AW)

USA - 3.5 MHz
Robye L. Lahlum, W1MK
Donor: Bill Feidt, NG3K

USA - 1.8 MHz
Wallace Eckles, W8LRL
Donor: Dave Patton, NT1N, & Mark Obermann, AG9A

Canada (28 MHz)
Lajos Laki, VA3RU
Donor: Radio Amateurs of Canada

Carib./C.A. (28 MHz)
WP2Z (Opr. David Harper, WD5N)
Donor: Snake River Contest Club

Europe - 28 MHz
9H8A (Opr. G. Morris, 9H1EL)
Donor: John Pryor, K4OGG

Europe - 21 MHz
IR4T (Opr. Stafano Brioschi, IK2QEI)
Donor: Robert Naumann, N5NJ

Europe - 14 MHz
OHØZ (Opr. Jukka Kulha, OH2MAM)
Donor: G3FXB Memorial (Maud Slater)

Europe - 7 MHz
Zdravko Balen, 9A9A
Donor: Ivo Pezer, T93A/5B4ADA

Europe - 3.5 MHz
Tine Brajnik, S50A
Donor: K3VW Memorial (Frankford Radio Club)

Europe - 1.8 MHz
IR4T (Opr. Gabriele Macchi, IK4UPB)
Donor: Pat Barkey, N9RV, & Terry Zivney, N4TZ

Japan - 21 MHz
Akito Nagi, JA5DQH
Donor: DX Family Foundation

Japan - 14 MHz
Syuichi Sato, JA7FTR
Donor: Mitsuhiro Nishimura, JA7WME

MULTI-OPERATOR, SINGLE TRANSMITTER
World
K1AR (Oprs. K1AR, K1EA, W2RQ)
Donor: Anthony Susen, W3AOH

U.S.A.
N3RS (Oprs. N2SR, N3ED, N3RD, N3RS)
Donor: Douglas Zwiebel, KR2Q

Canada
VE6SV (Oprs. VE6EX, VE6EKP, VE6EZ, VE6AKY, VE6NTF, VE6NAP)
Donor: Eastern Canadian DX Assn.

Africa
D44BC (Oprs. D44BC, DL2ØBF, DK7YY)
Donor: Harry Booklan, RA3AUU

Asia
8Q7DV (Oprs. UA9CI, UA9CDC, UA9CDV, UA9CLB, UA9CFF, UA9CKP)
Donor: Steve Merchant, K6AW

Europe
TM2Y (Oprs. F6BEE, F6ARC, F6FGZ, F6FVY, F5MUX, F5NLY)
Donor: Bob Cox, K3EST

Oceania-Pacific Rim
AH2R (Oprs. KH2/JHØUSD, KH2/JRØBQD, JR7ØMD/WI3Ø)
Donor: Junichi Tanaka, JH4RHF

South America
CE3F (Oprs. CE3/SM3SGP, CE3FIP)
Donor: Tyler Stewart, K3MM

MULTI-OPERATOR, MULTI-TRANSMITTER
World
6Y2A (Oprs. K2KW, N6BT, N6TV, N6BV, AF7Y, K7CO, W4SO, KE7X, AG9A, W9QA)
Donor: K2GL Memorial (Doug Zwiebel, KR2Q)

U.S.A.
KC1XX (Oprs. KC1XX, KM3T, K1GQ, K1DG, N1RR, N2IC, T93M, Christine)
Donor: N6RJ Memorial (Bob Ferrero, W6RJ)

Europe
DFØHQ (Oprs. DK8YY, DL1AUZ, DL3ALI, DL3OI, DL3TD, DL4ALB, DL5ANT, DL5AXX, DL5LYM, DL5MX, DL7URH, DL7VOA, DL8WAA)
Donor: Finnish Amateur Radio League

Japan
JA5BJC (Oprs. JA5BJC, JA5FDJ, JA5JCC, JA5THU, JH5RXS, JR5JQA, JR5VHU)
Donor: Ryozo Goto, JH3JYS

World - SSB/CW Combined
KH7R: 47,345,300
Donor: Alpha/Power, Inc.

CONTEST EXPEDITIONS
World Single Operator
Thomas Poland, 3A/N9NC
Donor: Yankee Clipper Contest Club

World Multi-Single
VK9LX (Oprs. K6KM, N4RU, NØTT, NM7N, VK2ICV)
Donor: Carl Cook, AL6V

World Multi-Multi
XZ1N (Oprs. WA6CDR, N5IA, AF7Ø, N7MB, K7SP, WF5T)
Donor: Bill Schneider, K2TT

SPECIAL - SINGLE OPERATOR AWARDS
World SSB/CW Combined
CN8WW (Opr. Bernd Och, DL6FBL)
Donor: Hrane Milosevic, YT1AD

World All Band: Under 21 years old
Marcus Ilvonen, OF3KCB
Donor: Chuck Shinn, W7MAP

SPECIAL EVENT AWARD
JT1A (Oprs. JT1BH, JT1BV, JT1CD, OH1RX, OH2BH, OH8PF)
Donor: CQ Contest Magazine

CLUB
World SSB/CW
Yankee Clipper Radio Club: 460,442,158
Donor: W1WY Memorial (CQ Magazine)

NON-USA SSB/CW
Bavarian Contest Club: 164,991,164
Donor: N6AUV Memorial (No. Calif. Contest Club)

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top six clubs set a new standard by amassing 1.4 billion points!

New All-Time CW Records

World: AB P40E (CT1BOH); 28 ZW5B (K5ZD); LA V26K (AA3B); Q3.5 HA8LUH; A28 KH2D; A21 OH0JJS (OH6LI); A14 LA9GX; A3.5 YT0A (YT7AO); MM 6Y2A.

Africa: AB EA8EA (OH2MM); L21 EA8NN; MM 5V7A.

Asia: AB C4A (5B4ADA); 21 5B4AGC; A28 JH1FSF; MM A61AJ.

Europe: AB GI0KOW (GI0NWX); 28 9H0A (9H1EL); L28 9A7R; L21 9A6A; Q28 G0TDX; Q21 OH7NVU; Q3.5 HA8LUH; AA RZ3BW; A21 OH0JJS (OH6LI); A14 LA9GX; A3.5 YT0A (YT7AO); MS TM2Y.

CLUB SCORES

USA		CLUB SCORES	
Yankee Clipper Contest Club	460,442,158	Ural Contest Group (UA9)	40,678,033
Frankford Radio Club	432,136,542	Nicosia Contest Group	32,846,224
Potomac Valley Radio Club	194,995,771	Japan Crazy Contesters	31,421,879
North Coast Contesters	92,006,148	YU Contest Club	30,497,391
Society of Midwest Contesters	77,380,640	Lithuanian DX Group	29,495,609
Southern California Contest Club	75,484,465	UA2 Contest Club	28,317,541
Northern California Contest Club	67,112,309	SP DX Club	26,819,602
Mad River Radio Club	34,331,846	Ukrainian Contest Club	25,985,197
Southeast Contest Club	33,155,304	Kaunas Technical University RC	25,612,343
Central Arizona DX Assn.	31,423,961	Croatian Contest Club	23,929,311
North Texas Contest Club	31,247,010	Low Land Crazy Contesters (PA)	22,230,065
Florida Contest Group	26,284,422	LYNX DX Group (EA)	22,037,127
Southwest Ohio DXA	25,968,544	French Contest Club	21,951,872
Florida Contest Club	21,697,656	Chiltern DX Assn. (G)	20,282,076
Western Washington DXC	21,374,682	HA DX Club	20,218,058
Minnesota Wireless	19,914,334	Top of Europe Contesters	16,419,407
Tennessee Contest Group	14,312,616	GPDX (CT)	16,180,833
Southern California DX Club	13,874,813	LU4FM Club	13,423,392
Texas DX Society	12,379,560	Araucaria DX Group	13,419,169
River City Contesters	11,063,399	Czech Contest Club	13,146,205
Oklahoma DX Assn.	9,536,853	LA Contest Club (LA)	12,060,623
Willamette Valley (W7)	9,029,390	LNDX (F)	11,869,351
Central Texas DX & Contest Club	8,859,146	Rosario RC (LU)	11,778,628
San Diego Dx Club	8,482,368	BC DX Club (VE7)	9,300,810
Mile High DX Assn. (W0)	8,354,164	Moscow City Radio Club	8,739,248
Carolina DX Assn.iation	8,201,653	Aruba Radio Club	6,907,354
North Florida DX Assn.	8,072,273	Z30M Contest Team	5,676,466
Rochester DX Assn.	8,050,648	YU DX Club	5,593,184
Grand Mesa DX Club	7,649,925	Taganrog Contest Club	5,312,822
Western New York DXA	7,138,765	Koryazhma DX Company	5,042,310
Central Florida DX Assn.	4,615,468	TuPY (PY2)	4,624,194
Kentucky Contest Group	3,579,724	Danish DX Group	4,534,267
Northern Ohio DX Assn.	3,060,619	Udmurita Contest Club (UA4W)	4,156,384
CT & RI Contest Group	2,960,756	LY CW Contest Club	3,721,963
Hoosier Contesters	2,743,635	Lithuanian CW Contest Club	3,721,963
Kansas City DX Club	2,509,171	Vojvodina Contest Club (YU)	3,714,692
CA Central Coast DX Club	2,502,153	Far East Island DX Club	3,693,778
Salt City DX Club (W2)	2,125,217	Sarajevo Dx Group (T9)	3,679,445
Ozaukee Radio Club (W9)	1,844,240	LU4AA Club	3,506,589
Southeast DX Club	1,720,140	Beemster Contest Club	3,392,746
Eastern Iowa DX Assn.	1,671,843	GADX (LU)	3,340,414
World Radio Staff ARC	1,616,619	GACW (LU)	2,667,138
Mother Lode Contest & DXC (W6)	1,122,346	Osona (EA3)	2,572,218
Northern Arizona DXA	1,065,454	Bavarian DX Group	2,403,399
Sterling Park ARC (W4)	826,844	SP Contest Club	2,303,207
Northern California DX Club	820,657	St Petersburg ARS (UA1)	2,030,209
West Park Radio Ops (W8)	777,153	Southern Germany DX Group	1,843,520
Central West VA Club	772,382	Sao Paolo Contest Group	1,517,596
Northrop-Grumman RC	669,070	Sky Sat Contest Club (YU)	1,505,658
Redwood Empire DXA	660,754	Shizuoka DX Assn. (JA2)	1,408,548
Order of Boiled Owls NY	580,634	Sudaca's Contest Gang (LU)	1,379,455
Athens (Ohio)	551,952	Northern Lithuania DX Group	1,019,577
Heartland DXA (W0)	527,549	North Patagonia DX Group (LU)	995,996
American Red Cross EC	485,542	Fox Contest Club (YU)	946,173
Yoder ARC (W0)	460,671	LU4HH Club	906,301
Metro DX Club (W9)	449,585	YO4KCA Club	816,430
Mississippi Valley DXCC	446,992	Amsterdam DX Club	684,178
Northern Illinois DXA	391,851	Kharkov Region ARS (Ukraine)	683,200
Weekend Warriors Contest Club (W3)	193,800	NOL (ON)	668,279
Tolersville ARC (W4)	56,047	Ivanovo DX Club	667,072
Northern Shenandoah DXA	50,694	Macedonia DX Club	512,444
		Globus (Ukraine)	454,956
		Obninsk "QRU" Club (UA3X)	453,156
		S59DBC Club	449,961
		Northern Greece Contest Team	433,432
		Crimean Contest Club	400,026
		SV1SV Club	277,255
		ARUK (EX)	234,446
		Tallinn Radio Club	164,627
		Geo DX Group (DL)	141,927
		GUARA (PY7)	69,667
DX			
Bavarian Contest Club	164,991,164		
Contest Club Finland	128,830,292		
Rhein-Ruhr DX Assn.	110,563,813		
Russian Contest Club	52,841,713		
Slovenian Contest Club	50,130,827		
Marconi Contest Club (I)	42,255,503		

North America: AB 8P9Z (K4BAI); 1.8 VA1A (K3BU); LA V26K (AA3B); L28 WP2Z (WD5N); AA K3WW; A21 AA8U; MS K1AR; MM 6Y2A.

Oceania: L28 WH0V; QA N0KE/KH6; Q7 W8QZA/KH6; AA KH2/N2NL; A28 KH2D; MS AH2R.

South America: AB P40E (CT1BOH); 28 ZW5B (K5ZD); L28 CX5AO; Q28 PY2TNT; A28 LU1APG; A21 LU7EAR.

Special Mention

The CQ WW brings out intrepid travelers from all over the world who head out to far-flung QTHs. A fast count of the number DXpeditions for the contest yielded about 100! Of course, there are many that go unnoticed if an exotic call sign is not involved. Why don't you try a DXpedition this year? You can travel light, set up with a vertical on the beach or hotel roof, and work thousands of QSOs. Once you take

that first trip and find yourself knee deep in your own pile-up, you will want to go back and back.

All of those operations put their calls into a lot of logs. A group of W5, 6, and 7's made a lot of contesters and DXers happy with XZ1N. Phil, N6ZZ, traveled up to zone 2 and set a new zone record with his effort. Out in the west of the USA, the competition in the seventh call area was fierce. Five stations finished above two million points. N7DR and W7GG finished in a dead heat, with N7DR winning by the point value of one multiplier. Out in the western USA, W6YA and W6NL shifted their efforts to 28 MHz. Jim, W6YA, just edged out Dave, W6NL.

Dave, K2SS/1, and George, W0UA (W0UN), put their considerable talents into 21 MHz. The scores were close, with Dave taking top place. Take a look at the heated competition in Slovenia on 7 MHz. S57AL just edged out S57DX and S52O.

Martti, OH2BH, and friends, and with the efforts of JT contesters, put together a special

event station from JT1A. Thanks to the JT's and OH's, many contesters worked the elusive zone 23 for the first time.

A real special mention is made of KH7R, who reprised their outstanding 1997 effort in 1998. They had the highest combined SSB/CW multi-multi total in the contest. Operating from zone 31 and winning the highest MM combined trophy is tough.

The two Russian multi-op groups (mostly UA9's) again headed to south Asia. The P3A group finished just behind A61AJ, while 8Q7DV blasted through on all bands.

Special mention must be made of new QSO records set in the contest. Jose, CT1BOH (P40E), made 6853 QSOs, and the MM station 6Y2A had a 40 meter QSO total of 3896 on 7 MHz for a new band record.

Comments

Last year the first UBNs were released to everyone who submitted an electronic log. We

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BAND-BY-BAND BREAKDOWN—TOP ALL BAND SCORES

Number groups indicate: QSOs/Zones/Countries on each band

WORLD TOP SINGLE OPERATOR, ALL BAND

Station	160	80	40	20	15	10
P4ØE	351/15/52	727/25/74	1188/30/92	1232/37/114	1821/37/120	1521/32/99
EA8EA	152/13/41	512/24/72	1161/30/84	1295/35/107	1254/38/119	2166/36/120
HC8N	98/13/22	406/23/61	1099/31/89	1223/35/109	1517/37/117	2317/32/120
P4ØW	281/14/45	803/24/85	988/28/92	970/31/103	1268/31/105	1952/31/109
CN8WW	157/9/33	829/19/71	1260/23/83	1067/31/99	1078/32/101	2100/29/102
8P9Z	302/15/45	694/19/66	1223/31/87	1213/33/87	1386/32/87	1681/25/82
C4A	385/17/64	718/21/72	1373/29/97	913/32/87	743/32/87	1376/31/96
A45XR	187/13/44	315/18/65	1084/28/92	871/32/93	1146/35/111	1219/34/121
3V8BB	243/11/57	782/19/75	1107/26/83	1023/31/95	798/32/94	1077/30/81
6V6U	40/7/11	214/15/45	602/22/70	1253/28/89	1196/27/93	2012/29/92

USA TOP SINGLE OPERATOR, ALL BAND

Station	160	80	40	20	15	10
W1KM	104/14/47	690/22/79	902/29/89	731/31/96	764/31/90	835/28/87
W4AN	53/12/31	241/20/67	1021/35/99	907/34/106	746/31/104	873/30/102
K12M	98/19/56	440/23/76	1134/31/98	503/35/93	598/31/89	1059/30/104
W9RE	26/10/19	157/20/62	1040/31/99	884/36/103	941/33/97	889/27/88
K1T0/4	38/13/30	218/18/64	827/29/100	881/36/101	927/33/108	610/28/92
KQ2M/1	47/10/33	402/20/72	1003/29/90	595/34/106	771/31/101	605/25/98
N2NT	59/12/38	403/17/77	684/30/88	738/35/110	1059/32/99	519/26/88
K3Z0	42/11/31	296/18/64	771/32/91	691/34/99	985/33/100	656/26/85
N2LT	49/12/32	278/16/64	641/34/95	744/27/94	785/31/101	793/27/94
K1RU	209/15	220/17/57	840/28/82	700/29/91	898/30/92	812/23/74

WORLD MULTI-OPERATOR SINGLE TRANSMITTER

K1AR	49/13/46	569/27/101	1384/35/136	991/38/151	999/36/135	1083/32/132
TM2Y	208/18/68	568/25/99	1303/36/127	943/35/127	1132/39/136	1326/35/121
N3RS	53/16/51	425/29/100	1202/34/125	793/37/145	892/36/130	856/31/126
EA6IB	77/14/57	640/21/89	1581/35/119	1371/36/128	1169/39/129	1307/34/121
N2NU	59/15/58	198/29/97	912/34/120	912/37/145	1085/37/131	755/30/126
K8AZ	47/17/44	225/25/97	990/36/120	959/37/140	987/34/139	958/30/127

USA MULTI-OPERATOR SINGLE TRANSMITTER

K1AR	49/13/46	569/27/101	1384/35/136	991/38/151	999/36/135	1083/32/132
N3RS	53/16/51	425/29/100	1202/34/125	793/37/145	892/36/130	856/31/126
N2NU	59/15/58	198/29/97	912/34/120	912/37/145	1085/37/131	755/30/126
K8AZ	47/17/44	225/25/97	990/36/120	959/37/140	987/34/139	958/30/127
K1ZZ	67/17/56	418/26/100	741/34/121	931/37/140	919/35/131	645/31/125
K8LX	42/13/35	178/25/90	807/33/113	797/37/138	1061/36/130	410/31/122

WORLD MULTI-OPERATOR MULTI-TRANSMITTER

6Y2A	1139/20/82	1867/28/106	3896/35/132	4099/38/151	3433/31/147	3175/32/120
5V7A	208/15/48	683/25/79	2298/35/118	3526/38/146	4485/39/151	3182/35/137
THC	768/17/63	1689/28/97	2976/32/119	3459/38/147	3217/39/147	3304/35/138
EA9EA	52/5/22	1804/22/94	2815/37/132	3225/38/147	2732/38/144	2213/36/124
A61AJ	530/21/67	1359/28/95	2957/35/133	2946/39/146	2331/36/141	2569/36/136
J6DX	627/17/54	1368/26/84	2372/31/103	2986/36/121	3795/36/135	3148/33/123

USA MULTI-OPERATOR MULTI-TRANSMITTER

KC1XX	238/21/75	971/29/113	2120/37/142	2228/38/157	1812/39/143	1565/35/133
W3LPL	208/22/70	1003/31/115	1798/37/139	2104/39/158	1743/39/148	1445/34/133
K3LR	200/21/67	660/29/110	1971/38/144	1942/37/156	1773/37/145	1554/35/140
K1KI	144/16/59	809/29/106	1664/37/137	1833/38/152	1764/37/138	1121/33/128
K2LE1	108/13/41	572/21/95	1389/33/127	1769/37/139	1223/35/123	1104/34/123
K9NS	76/18/36	406/28/95	1229/37/133	1676/39/149	1441/36/134	1075/31/120

ZONE LEADERS SINGLE OPERATOR

Zone	Call	Score	Zone	Call	Score
1	KL7AC	1,263,542	21	A45XR	9,067,345
2	VE2/N6ZZ	7,023,425	22	AT2AJ	34,532
3	W6AX	4,417,426	23	JT1CO	1,235,806
4	W9RE	6,875,625	24	XX9X	3,795,670
5	W1KM	7,379,711	25	JH5FXP	4,857,376
6	6D2X	4,338,864	26	3W7TK	2,720,442
7	3E1AA	7,002,610	27	DU1/DL5ZAH	889,680
8	8P9Z	9,991,863	28	9M6NA	5,979,138
9	P4ØE	14,372,964	29	VK6VZ	451,584
10	HC8N	12,971,803	30	VK2AYD	1,386,240
11	ZW5B	1,991,895	31	NH7A	2,648,535
12	*CE3AA	735,715	32	KH8/N5OLS	2,889,842
13	*LT1F	1,824,312	33	EA8EA	13,717,801
14	GIØKOW	6,961,240	34	5A1A	450,865
15	S58A	6,628,059	35	6V6U	8,127,504
16	EW8EW	2,665,131	36	No Entry	
17	EX8W	4,373,712	37	5H3US	791,427
18	RZ9UA	3,927,066	38	ZS6EZ	5,379,840
19	UAØJQ	2,220,574	39	3B8/DL9GFB	1,024,920
20	C4A	9,904,510	40	No Entry	

* Low Power



LU1FNH, number one on 21 MHz Argentina.

did the same this year. The difference between the two years is that the contest community is becoming more and more knowledgeable about how errors can occur. With the ever increasing number of tools available to validate the scores and allow the winners to really celebrate their win, there might be a tendency to lose focus about what contesting is about. The UBN is a learning tool which if you take the time can help you become a better contesteer.

The reason you enter a contest is to have fun! To repeat from last year's writeup, "The buzz of the bands coming to life is a siren's song that can't be resisted. The new ones you might work, finding that your signal can work a lot of people, and your personal motivation to do well are just the tip of the iceberg. Each con-

test is a learning experience about propagation, your own skills, and learning from others."

Please send us your log in electronic format. No matter how small or large, mail your CW log via the Internet to <cw@cqww.com> and your SSB log to <ssb@cqww.com>. It is cheaper and less trouble to e-mail your log. Each log helps to make the whole contest better and truer. You can check the CQ WW home page at <http://www.cqww.com>. There you will find the latest rules and other interesting information including directions on how to submit an e-mail log entry.

Power

Everyone knows that when you enter a con-

test, you are on your honor to run the power that your category allows. It is unsettling to see logs that claim low power but clearly are running more than what is allowed. It is a false victory to beat other competitors when they all are running 100 W or less and you decide to run 500 W. We all have heard many reasons to justify this type of thinking: "I live too far from competitive areas."; "How can that top station win? He must be cheating. I have to cheat to be competitive."; "I'll run 500 W because my antenna is not very good." It sure makes life easier and your score bigger if you cheat by running high power. The truth is that almost everyone really does obey the power limitations. It is much more satisfying to obey the rules and find out just how well you can do from your QTH.

EUROPE TOP SINGLE OPERATOR, ALL BAND

Station	160	80	40	20	15	10
GIØKOW	249/13/57	662/19/77	1166/32/97	716/37/107	1066/35/110	929/28/103
S58A	113/15/56	416/17/78	1563/34/109	905/35/103	772/33/99	772/34/114
G4BUO	177/15/52	591/18/71	583/25/73	846/31/93	761/31/94	608/28/84
GU6UW	350/8/49	576/15/65	852/23/74	681/24/72	733/27/79	1002/30/89
4N9BW	180/11/51	369/18/66	989/32/92	873/28/85	928/33/102	760/33/94
DL4NAC	66/12/43	220/17/67	1085/34/99	626/29/80	660/32/100	559/30/98
GØIVZ	270/11/52	550/16/65	778/22/72	779/27/92	657/30/97	701/29/85
OH1MM	100/9/40	360/17/77	524/29/89	1080/27/82	820/32/105	495/29/88
OM5M	60/7/35	437/18/67	932/31/89	671/29/80	783/32/86	511/33/81
OH5LF	104/10/49	259/18/62	375/28/83	880/33/90	829/34/101	647/33/107

EUROPE MULTI-OPERATOR SINGLE TRANSMITTER

TM2Y	208/18/68	568/25/99	1303/36/127	943/35/127	1132/39/136	1326/35/121
EA61B	77/14/57	640/21/89	1581/35/119	1371/36/128	1169/39/129	1307/34/121
RU1A	126/19/75	753/35/128	843/38/136	1321/37/139	1085/39/140	451/35/133
SØ6Z	181/18/66	608/26/95	1397/35/125	1304/36/127	992/38/122	660/35/117
DL2NBU	140/18/70	607/25/96	1171/33/112	774/37/130	883/38/131	648/35/125
OM8A	198/17/72	468/18/74	1345/37/122	1232/37/138	791/38/123	635/34/120

EUROPE MULTI-OPERATOR MULTI-TRANSMITTER

DFØHQ	832/23/85	1837/32/111	2461/37/138	1976/37/138	1805/37/142	1378/37/137
OH2U	638/23/88	1088/31/120	2101/37/145	2439/39/158	1825/38/146	1287/37/145
RW2F	895/28/94	1622/31/117	2121/38/143	2158/39/146	1275/38/135	1181/37/145
SL3ZV	826/23/89	1092/33/114	2045/35/132	2385/37/137	1593/39/140	673/33/116
DLØCS	731/22/90	1257/33/120	1541/37/130	1519/36/133	1458/38/138	851/36/130
EA4ML	613/16/63	1223/22/82	2106/31/113	2235/36/121	1469/36/120	1102/32/94

TOP SCORES IN VERY ACTIVE ZONES

ZONE 3

W6AX	4,417,426
W6RU	3,141,840
K6LA	2,851,800
*XØ7X	2,584,983
N7DR	2,568,104
W7GG	2,561,988
W2VJN/7	2,133,130
N7TT	2,053,425
K4XU/7	2,015,248
AA7A	1,992,810

ZONE 4

W9RE	6,875,625
KØRF	4,029,435
W4PA	3,555,681
K5YAA	2,959,691
K9MA	2,887,213
K9AN	2,781,072
WBØO	2,511,587
KØEU	2,495,724
KØCAT/9	2,375,505
NA5B	2,251,855

ZONE 5

W1KM	7,379,711
W4AN	7,141,453
K1ZM	7,119,308
K1TO/4	6,293,104
KQ2M/1	6,112,282
N2NT	6,086,220
K3ZO	6,054,048
N2LT	5,831,100
K1RU	5,214,551
W3BGN	5,008,964

ZONE 14

GIØKOW	6,961,240
G4BUO	5,073,750
GU6UW	5,047,170
DL4NAC	4,872,882
GØIVZ	4,722,406
G4BJM	3,826,284
OZ1LO	3,779,440
CU2V	3,728,724
EA3NY	3,215,612
TM9C	2,928,660

ZONE 15

S58A	6,628,059
4N9BW	5,016,810
OH1MM	4,374,240
OM5M	4,157,721
OH5LF	3,994,272
HA8FM	3,734,322
SP4Z	3,658,850
LH5W	2,988,110
HA8JV	2,865,016
OH6RX	2,725,254

ZONE 25

JH5FXP	4,857,376
JH4UYB	4,470,430
JH7AFR	3,788,148
JH7WKQ	3,494,880
JS3CTQ	2,842,494
JA8RWU	2,712,231
JH7XGN	2,057,950
JH1OGC	1,979,356
*JEØUXR	1,533,600
*JL1ARF	1,530,450

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(Continued on page 70)



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Thanks

Once again thanks to the CQ WW log checkers who helped validate the winners and provided insight into many contesting topics. The 1998 crew included: K1DG, K3UA, K3WW, K6NA, KR2Q, N2NC, N3ED, N6ZZ, N9RV, W7EJ. Special advisors were K3ZO, N8BJQ, N2AA, K3LR, N5TJ. Decoding problem logs was led by W3ZZ and his crew of N5NJ, JE1CKA, and I2UIY. Our DX advisors were helpful in offering good advice, providing information, and sorting out potential problems: CT1BOH, DL6RAI, EA3DU, F6BEE, G3SXW, HS0/G4UAV, I2UIY, JE1CKA, OH2KI, OH2MM, ON6TT, PY5EG, S5OA, UA9BA, VE3EJ. The CQ WW call database would not be of such a high quality if it were not for Dick, N6AA. He again spent countless hours to make the CQ WW database the best in contesting. The CQ WW uses the constantly updated software developed by Tree, N6TR, in order to create the database. John, K2MM, created the entire WWW log entry information. His robot worked smoothly in acknowledging receipt of a log. Tack, JE1CKA, has created the appearance and non-log data on <cqww.com>. Translations of the rules into Spanish, Japanese, German, and French were done by EA3DU, JE1CKA, DL6RAI, and F6BEE. Larry, N6TW, was invaluable in retrieving and processing data from e-mail submissions. Thanks to the counsel of John, K1AR, and his hard work to make the CQ WW successful.

Congratulations to all the winners! This year try to get a friend on in the contest. He and you will find the CQ WW a real contesting experience. To participate and have fun is what contesting is all about! 73, Bob, K3EST

DX QRM

ZM2K at 1412Z big shock; assume it was correct . . . **9H8A**. We did break the record score of OC Multi-Single which we made last year, if the reduced score is less than we expect . . . **AH2R**. I've beaten the guy I was competing against—myself (with last score) . . . **CT1BQH**. Your super contests are the ideal lab for studying the frontiers of QRP operation. Lots of big ears are desperately looking for a multiplier, and a CW CT1 is not very common. I limited it to 100 mw. Maybe 143 QSOs or 20,145 claimed points is not very huge, but I think I could get one of the best scores of points per watt! . . . **CT1ETT**. I had a lot of fun with the 3-ele noodle beam (W9XR/W3GH design) at only 15m height! . . . **DF4SA**. It isn't easy to work single band with mostly just a dipole, but it was fun the whole time, especially if stations like VK9LX, 9M6AAC, and other rare DXers gave me a call . . . **DK3FD**.

My second CQWW CW entry from HI land. This was the most wet contest I ever worked . . . **HIS/DL1HCM**. Fifty percent more points than the old Low Power DL record, but with condx like these I may end up as #3 in DL only . . . **DL2HBX**. Most of the stations I called often returned at once. Low power and a German call sign seem to be a handicap . . . **DL2HQ**. Final tuning of the C31XR beam was made on the tower at

minus 15 degrees Celsius. Thanks to Force 12 and SWL Holgi . . . **DL4NAC**. High sunspots and low noise—cool! Trx again to our friends in Ibiza . . . **EA6IB**. Apologies to all who tried a 160m QSO with us and got no reply. A broadcast AM station just 50 meters away on 1584 Khz kept 1.830-1.850 segment quite "clean," making reception almost impossible . . . **EA9EA**. My computer was broken after 1300 QSOs! I have now only last part of the log, which I made on paper . . . **ERSAA**. No team to use TM1C, so I took the antenna farm for a week for the CQ WW CW. I tried a single band 10m. My CW level is not very high. I trained with PED to improve my code speed. Thanks very much to many American stations who repeated their calls and made a little QRS for me! I was pleased to contact China and Mongolia. 3E1AA was going too fast. It took 10 minutes to understand his call . . . **FSITK**. QRP is the best; with a good antenna you don't need lots of power . . . **GBVQR**. Fifteen meters was in very good shape, but with hindsight I think it would have been even better on 10m . . . **G3MXH**. Enjoyable as always, but I cannot get near G1GKOW's scores from plain old G-land. Great conditions on 10m, but the HF bands are still shutting early. It can get better than this! . . . **G4BUO**. This is my best score to date and the first one from GD where I spent a lot of the time CQing for a change and holding the frequency, on 100W! The rotator for the 3-ele Yagi was damaged in the recent storms, so the whole contest had the Yagi facing East . . . **G4UOL**.

Amazed to make over 2000 QSOs; disappointed to not get all 40 zones, as I know zones 2 and 34 were active . . . **GM4YX**. On Sunday afternoon we had all six bands open. Practically impossible to find few hundreds of Hertz free for running . . . **IK0HBN**. Really great 15 and 10 meters! For me 1.127 QSOs and 791.700 points was a dream before now. Only wire antennas and 100W, but next year hope better antennas . . . **IK4EWX**. Strong signals from USA and many stations from Japan. Great pile-up on 40m for XX9X and XZ1N . . . **IQ6T (Op.IK6SNO)**. Wind broke my antenna at half of the contest . . . **IR9T (Op.IT9GSF)**. Finally, I've got zone 01! . . . **IT9TWC**.

As the condx during test was good, I enjoyed very much. But I lost many mults because of pile-up . . . **JQ3UDL**. It was suffering in freezing temperatures—minus 35 both C and F— assembling beams and struggling through 48 hours with three stations, but it was fun to experience that rare zone 23 and meet those who provides it regularly to us Deserving . . . **JT1A**. Have not heard for years such a fine contest. I was assisted by my son LZ1ABC . . . **LZ1AQ**. Thanks to LZ1DB, the President of "TELZET," for equipping the station with transceiver and amplifier. Great propagation to JA! . . . **LZ5W**. Sunspots are back! Had a clean sweep on 15 to NA. Highlight: Getting called by KC1XX and others on 80m . . . **OESOHO**.

Missed VK6; heard later a couple of others missed them, too. This time heard only a few mults that could not hear me; the /VEZ was one of them. I hope conditions would be better to Japan next year also on CW. Hear you all next year with a shorter call sign! . . . **OHBJJS (OH6LI)**. First time trying to put some signals in the air from Argentina. I wish I could get a local call next year . . . **LU/OH8WW**. The biggest thrill was to work V63X through W/JA pileup at 2200Z on Sunday just after JX7DFA double mult! . . . **OH1F (OH1NOA)**. What a great contest! Passing mults to other bands went also very smoothly. The highlight was XU1A answering to our CQ on Sunday 2050Z . . . **OH2U**.

The very best of all operators I heard was HC2SL . . . **OZ8AE**. After many years of single-band operating, I wanted to try something new in the form of an all-band attempt. By the way, I really appreciate the UBN report. It gives very good advice for self-improvement . . . **PA3AAV**. Back to basics: no more DXcluster, no more big Yagi, no more 3-500Z, but had the best time in years! Contesting as it is supposed to be? . . . **PA3BDU**. 300 QSOs on first 3 hours! 22 hours of operation and more QSOs than WW SSB—breaking my own record using R7 vertical—no other antenna, no amplifier . . . **PY2NY**.

Was lucky to find nice conditions on 15m in RA3-land after many years of waiting. Have got joy . . . **RA3XQ**. We've just finished the construction of 3-el Yagi for 80m 3 hours before the contest began. Antenna worked fantastic! It was the first time for us we've made QSO in contest on 80m with 6D2X, zone 6 through big pileups USA, KL7Y, long path 3 zone W6RJ . . . **RU1A**. 80m is a real band . . . **S50A**. Better than last year on 10 meters! Couldn't work zones 6 and 29. No aurora. Funny

reports received as ENNN . . . **SP5DDJ**. I love CW. I am 17-year-old blind boy . . . **SQ9BZK**. OT of 82 years. Most QSOs ever in CQ WW SSB or CW. Tried manual and computer log at same time! Previously V2/G6QQ, but now been given local license . . . **V29QQ (G6QQ)**. Biggest thrill was breaking the pileup on the Azores on 15. Thanks to VE7CFD, for his hospitality and use of his station. Original goal was to break 500 Qs; maybe 1000 Qs will be possible for QRP from the west coast soon . . . **VE7CFD (VE7CQK)**.

What a weekend for a contest! Trx to VP5JM . . . **VP5GN (K5GN)**. This old goat only managed 38 hours operating, which included some equipment problems. Band conditions were great, but I lacked the antennas to take full advantage of the conditions. Next year I'll be better prepared and hope that conditions are as good . . . **VP5M (N4TO)**. Many thanks to VE1JF (Jim and Hannalore) for hosting my DXpedition to Nova Scotia . . . **XJ1JF (VE7SV)**. All bands were UFB, and specially 15m and 10m. This is my best effort in this category . . . **Z31JA**. First time like "BIG GUN." Excellent conditions on 40m. Sorry for many stations from W6/7 and JA I couldn't copy because my receiver was very poor . . . **Z39Z**. I operated from Quartz Hill Amateur Radio Station located on a farm near Wellington. The station is a former Radio New Zealand facility for reception of international broadcasts. ZL6QH is a special call sign for use by members of the Quartz Hill User Group . . . **ZL6QH (ZL1AZE)**. Thanks to PY5EG for a memorable experience and a new world record! . . . **ZW5B (K5ZD)**.

USA QRM

Goal was 100 countries on single band. Close but no cigar . . . **AA8TY**. Thanks to Roger, K1DQV/3, for hospitality and opportunity to test drive his new installation. First contest from U.S. in 12 years. Won the national championship in the last one (ARRL DX CW) with W3GRF. Won't even make top ten this time. What a difference a decade makes! . . . **K8DQ**. This is my first CW entry, although I've operated in CQ WW for years now. Hope to make a better showing next year when I get the tower up. Using only verticals can be a real handicap in pile-ups, but it can still be fun, too! . . . **K8IL**. Thanks to the sunspot gods for excellent 10/15m condx. That's the most fun I've had on 10 for a long time. Sigs coming from everywhere at once. Had to use the Zepp so I wouldn't miss anything . . . **K1RC**.

Best conditions in years! And the YCCC really motivated us little pistols to operate! . . . **K1TH**. This was the best ever result in 20 years of contesting from Vermont. Better than 50% improvement over last year's score thanks to improved 10/15m antenna setup and propagation. Even more important, we managed to have FUN. Thanks to our hard-working crew . . . **K2LE1**. Motor skills and brain neurons are sharpened up as a result of working single band 40m. Loved it! . . . **K4LDR**. The person who said, "There ain't no meters like 10 meters" was certainly right this weekenders generated twice as many points as any other band for me . . . **K4LT4**. Wish I could have spent more time on the bands. Did get to enjoy some good 10m openings after local sunrise . . . **K4RO**.

We should be classed as multi-multi unassisted as we do not use packet, the Internet, or any other outside sources for our contacts as the east coast packet slaves do! All of our contacts came from inside the shack . . . **K4VXB**. Welcome back sunspots! This is what we've been waiting for since 1993 . . . **K5MDX**. Like so many others this is a personal best for me. Was great fun, even with modest antennas and low power . . . **K7HBN**. All I could get up before the contest was a 2-ele 40 at 130 ft. Just thought I would work a few guys and have some fun. Turns out that I was competitive! . . . **K8DX**. This looks like a new CQ WW CW MM record! Conditions were outstanding on all bands! Ed, K1TR, graciously helped out on 20m and on the spotting radio setup. Thanks, Ed! As usual, Matt's XYL, Christine, provided moral support and food throughout the contest . . . **KC1XC**. First ever CQ WW on CW. Thanks to all who slowed down for my slow copy. Really got my code speed back up, though . . . **KE1FO**.

After 20 years without a single CW QSO I made 175 in just under 13 hours! . . . **KE1KD**. This was a great effort for the first time in this contest, with a great team of operators. We missed the first 38 minutes of the contest, as we were still outside raising antennas! . . . **KG6OK**. Set a goal to beat my last year's scores and totals. With a modest station I could not hold a ur frequency, but maybe that was good, as S&P and the TR bandmap yielded a wealth of multipliers, especially on 10! . . . **KJ9C**. What a contest! Can't imagine what the top of the cycle will bring in a few years. Activity this weekend puts claims of dying interest in CW to rest for good! . . . **N1DG**. This was my personal best all time from Stateside in CQ WW . . . **N2BA**.

Great conditions all around. Highlights: three new countries worked (280), busting pileups. Lowlights: not even hearing X99 . . . **N2CU**. For the most part was "packet pouncing," but there was so many spots I was kept busy all weekend. Were I a better CW operator I would have been able to run. Conditions were really great and I was hoping to work over 100 countries on 10, 15, or 20 meters . . . **N2FF**. Could not find much chance for sleep. Shut down after EU sunrise for an hour, got up to check EU secondary, only to hear JT1 booming through. Hard to believe WW condx can improve much over what they were this weekend, but sorry to see beloved low bands suffer . . . **N4AF**. Biggest thrill: finding VK9LX all alone on 20m after midnight and working them first call! . . . **N5TW**.

This was my first contest from the home QTH using a beam. What a difference over wires! Working XZ1N just after sunrise on 20m (first call) and VK's, VK9LX long path on 15m just before our sunset . . . **N6RFM/1**. JA runs went for many hours and running Europe on 10 meters made me feel like I had moved to the east coast! 1999 should be a really great DX and contest year! . . . **W8TM**. This is as good as it gets! My best score ever, and longest time awake . . . **W1WEF**.

What a thrill to break the LP record! This contest was action-

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TOP SCORES

<p>WORLD Single Operator All Band</p> <p>P40E 14,372,964 EA8EA 13,717,801 HC8N 12,971,803 P40W 12,108,798 CN8WW 11,904,984 8P9Z 9,991,863 C4A 9,904,510 A45XR 9,067,345 3V8BB 8,589,180 6V6U 8,127,504</p> <p>28 MHz</p> <p>ZW5B 1,991,895 LT1F 1,824,312 ZY2DX 838,532 HC2SL 837,774 LU4FPZ 789,888 H20A 768,405</p> <p>21 MHz</p> <p>5X1Z 1,361,360 9Y4VU 1,222,485 5B4AGC 1,139,608 CX5X 935,375 ZV5A 833,671 K2SS/1 770,355</p> <p>14 MHz</p> <p>5N0 /OK1AUT 1,456,400 K2WK 1,007,781 OH0Z 901,230 OK1RF 852,488 GM3POI 820,080 DJ7AA 768,768</p> <p>7 MHz</p> <p>V8A 952,416 9A9A 908,694 OT8T 772,530 9A5Y 734,570 LZ5W 639,912 OH9DX 608,548</p> <p>3.5 MHz</p> <p>IH9/OL5Y 671,703 XJ1JF 497,280 S50A 458,738 SN3A 437,904 W1MK 413,576 5B4/EU1AA 412,482</p> <p>1.8 MHz</p> <p>VA1A 246,238 IR4T 159,654 9A5W 158,652 4X4NJ 144,045 S50U 134,784 OM5ZW 117,771</p> <p>Low Power All Band</p> <p>V26K 7,185,562 N5TJ 3,157,053 W2TZ 2,678,662 S59AA 2,595,303 X07X 2,584,983 LY3BA 2,543,038 W3EF 2,401,695 HA1CW 2,331,648 T95A 2,297,344 KM1X 2,282,097</p> <p>28 MHz</p> <p>CX5AO 887,556 WP2Z 806,124 LU5WW 689,568 9A7R 536,580 NP3A 477,664 KP3L 468,814</p>	<p>21 MHz</p> <p>EA8NN 545,100 9A6A 494,025 IK4DCT 490,196 CT1BQH 443,120 LU5FF 424,799 UA4LM 389,025</p> <p>14 MHz</p> <p>VK2APK 442,566 S58AL 388,680 CX9AU 387,985 EA3BCM 366,560 IT9XUC 320,320 JR4PMX/1 300,960</p> <p>7 MHz</p> <p>EA8CN 519,932 H13K 372,372 LZ4ZP 294,857 4L8A 294,210 IQ7A 292,420 UA0CM 274,500</p> <p>3.5 MHz</p> <p>UA9JLJ 166,200 TA3D 163,846 UU0JM 123,250 RA9AE 119,935 HA8RH 110,865 UT7CC 107,507</p> <p>1.8 MHz</p> <p>HA3MQ 49,192 EU1AZ 47,047 E17IU 31,507 YU1RA 28,535 LY2OU 26,605 UX0HA 25,264</p> <p>QRP All Band</p> <p>HA2SX 1,002,822 N6MU 857,395 LY2FE 795,874 N1TM 701,679 SM3CCT 666,050 K1RC 659,880 W3ZZ 628,304 N7IR 569,192 N0KE/KH6 532,575 JR4DAH 528,363</p> <p>Assisted All band</p> <p>K3WW 7,963,764 K11G 6,477,468 K2NG 5,951,043 K2TW 5,685,240 WP3R 5,495,235 KH2/N2NL 5,406,660 N3AD 4,964,695 W2UP 4,695,670 K1TI 4,649,790 RZ3BW 4,642,688</p> <p>Multi-Operator Single Transmitter</p> <p>K1AR 12,063,114 TM2Y 10,357,360 N3RS 9,681,880 EA6IB 9,522,048 N2NU 9,313,019 K8AZ 9,259,470</p> <p>Multi-Operator Multi-Transmitter</p> <p>6Y2A 39,279,140 5V7A 34,658,186 T11C 32,783,400 EA9EA 29,532,750 A61AJ 28,014,492 J6DX 25,596,764</p>	<p>USA All Band</p> <p>W1KM 7,379,711 W4AN 7,141,453 K1ZM 7,119,308 W9RE 6,875,625 K1TO/4 6,293,104 KQ2M/1 6,112,282 N2NT 6,086,220 K3ZO 6,054,048 N2LT 5,831,100 K1RU 5,214,551</p> <p>28 MHz</p> <p>N4BP 483,705 K4WX 422,919 K9IG 415,552 W6YA 371,159 W6NL 359,077 W9WI/4 339,456</p> <p>21 MHz</p> <p>K2SS/1 770,355 W0UN 713,565 NN4T 584,824 W9LT/8 535,804 W0SD 501,234 K4OAO 443,022</p> <p>14 MHz</p> <p>K2WK 1,007,781 W9OF 382,356 K2BA 310,542 W8UD 168,750 AD7U 149,643 W8TWA 73,830</p> <p>7 MHz</p> <p>W5UN 542,025 K8DX 532,105 W3GG 334,632 K0OD 161,432 W6KP 156,457 W6YJ 104,448</p> <p>3.5 MHz</p> <p>W1MK 413,576 K1LZ 236,529 WB9Z 120,797 K5NA 94,581 N2GC 77,616 W0SF 34,040</p> <p>1.8 MHz</p> <p>W8LRL 36,864 W8UVZ 19,532 W2VO 17,400 K1VW 9,028 K4TEA 5,130 W9PNE 1,740</p> <p>Low Power All Band</p> <p>N5TJ 3,157,053 W2TZ 2,678,662 N8AA 2,474,012 W3EF 2,401,695 KM1X 2,282,097 NA2U 2,213,580 K1VUT 2,139,800 WT1O 1,741,560 K5KLA 1,437,000 WD5K 1,420,923</p> <p>28 MHz</p> <p>WB4TDH 208,372 W3EP/1 167,040</p>	<p>K2MFY 159,453 N2OO 156,500 K2ACW 143,507 K9WA 114,840</p> <p>21 MHz</p> <p>N4CT 294,602 N4MO 282,218 K9RN/M 213,705 AF9DX 122,884 AA0TY 122,815 AE9F/6 113,870</p> <p>14 MHz</p> <p>W8UMR 97,030 WB2DVU 94,764 N9WI 17,760 WT8P 15,643 K6CEO 8,880 N9GBB 8,800</p> <p>7 MHz</p> <p>N5DO 102,340 K4LDR 51,552 W5CWQ 34,191</p> <p>1.8 MHz</p> <p>K9MK 2,640</p> <p>QRP All Band</p> <p>N6MU 857,395 N1TM 701,679 K1RC 659,880 W3ZZ 628,304 N7IR 569,192 KV8S 503,750 N9CIQ 383,052 WA3NKO 292,950 AA1CA 203,058 K3WWP 160,800</p> <p>Assisted All Band</p> <p>K3WW 7,963,764 K11G 6,477,468 K2NG 5,951,043 K2TW 5,685,240 N3AD 4,964,695 W2UP 4,695,670 K1TI 4,649,790 K5MA/1 3,961,105 K5KG/2 3,780,392 K3NZ 3,586,593</p> <p>Multi-Operator Single Transmitter</p> <p>K1AR 12,063,114 N3RS 9,681,880 N2NU 9,313,019 K8AZ 9,259,470 K1ZZ 8,930,278 K8LX 6,701,035</p> <p>Multi-Operator Multi-Transmitter</p> <p>KC1XX 22,473,282 W3LPL 21,271,495 K3LR 20,897,569 K1KI 17,808,700 K2LE/1 13,276,122 K9NS 11,526,040</p>	<p>EUROPE All Band</p> <p>GI0KOW 6,961,240 S58A 6,628,059 G4BUO 5,073,750 GU6UW 5,047,170 4N9BW 5,016,810 DL4NAC 4,872,882 G0IVZ 4,722,406 OH1MM 4,374,240 OM5M 4,157,721 OH5LF 3,994,272</p> <p>28 MHz</p> <p>9H0A 840,434 GW3YDX 726,193 G3MXJ 620,172 GW3WVG 511,932 T99W 492,582 IQ4A 487,494</p> <p>21 MHz</p> <p>IR4T 769,484 DL11AO 723,492 GM4YXI 672,175 OH1F 607,338 4O6A 589,842 OM7M 584,150</p> <p>14 MHz</p> <p>OH0Z 901,230 OK1RF 852,488 GM3POI 820,080 DJ7AA 768,768 SN2B 759,330 YT7A 749,394</p> <p>7 MHz</p> <p>9A9A 908,694 OT8T 772,530 9A5Y 734,570 LZ5W 639,912 OH9DX 608,548 S57AL 532,526</p> <p>3.5 MHz</p> <p>S50A 458,134 SN3A 437,928 SP7GIQ 343,476 GM0GAV 249,000 OH1MA 240,828 LA6YEA 209,677</p> <p>1.8 MHz</p> <p>IR4T 159,654 9A5W 158,200 S50U 134,784 OM5ZW 117,771 LY3BS 96,720 LX4B 95,030</p> <p>Low Power All Band</p> <p>S59AA 2,595,303 LY3BA 2,543,038 HA1CW 2,331,648 T95A 2,297,344 DL2MEH 2,240,217 DL2HBX 2,100,324 YU7CB 2,025,342 9A2EU 1,997,082 YO3APJ 1,954,437 DK0MM 1,908,816</p> <p>28 MHz</p> <p>9A7R 536,580 9A1AA 330,544 SP3SUX 201,117 E18GP 191,394 ER1OO 169,514 T99T 165,891</p> <p>21 MHz</p> <p>9A6A 494,025</p>	<p>IK4DCT 490,196 CT1BQH 443,120 UA4LM 389,025 OH5BM 359,531 EI6FR 246,848</p> <p>14 MHz</p> <p>S58AL 388,680 EA3BCM 366,560 IT9XUC 320,320 ES2RJ 282,757 RU3HD 274,822 RW4WM 194,100</p> <p>7 MHz</p> <p>LZ4ZP 294,857 IQ7A 292,420 S54A 217,800 S53F 175,934 YZ7ED 162,265 LY2BM 158,136</p> <p>3.5 MHz</p> <p>UU0JM 122,750 HA8RH 110,865 UT7CC 107,507 HA7JJS 95,700 YU1CC 86,102 OK1FHI 85,025</p> <p>1.8 MHz</p> <p>HA3MQ 49,192 EU1AZ 47,047 E17IU 31,507 YU1RA 28,535 LY2OU 26,605 UX0HA 25,264</p> <p>QRP All Band</p> <p>HA2SX 1,002,822 LY2FE 795,874 SM3CCT 666,050 DL3KVR 525,358 OE2S 507,000 YU1LM 500,148 I0ZUT 452,403 G0OGN 446,879 HA7YS 340,901 F5NZY 318,024 UR9MM 304,370</p> <p>Assisted All Band</p> <p>RZ3BW 4,642,688 DF3CB 3,640,994 M8Z 3,295,396 UT5UGR 3,235,392 YZ7AA 2,798,640 OK2FD 2,681,000 RZ3AZ 2,504,584 SM3EVR 2,450,682 DL7ON 2,424,840 S56A 1,977,570</p> <p>Multi-Operator Single Transmitter</p> <p>TM2Y 10,357,360 EA6IB 9,522,048 RU1A 9,044,874 SQ6Z 8,775,480 DL2NBU 7,925,400 OM8A 7,360,440</p> <p>Multi-Operator Multi-Transmitter</p> <p>DF0HQ 18,897,540 OH2U 18,387,820 RW2F 16,862,016 SL3ZV 14,495,360 DL0CS 13,194,288 EA4ML 12,587,520</p>
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Number groups after call letters denote following: Band (A = all), Final Score, Number of QSOs, Zones, and Countries. An asterisk (*) before a call indicates low power. Certificate winners are listed in boldface. (All country terminology reflects the DXCC list at the time of the contest.)

CW RESULTS SINGLE OPERATOR NORTH AMERICA UNITED STATES

W1KM	A	7,379,711	4027	155	488
K1ZM	"	7,119,308	3837	169	517
KQ2M/1	"	6,112,282	3424	149	500
K1RU	"	5,214,551	3489	136	411
W1WEF	"	4,972,275	2972	148	467
K1AM	"	3,691,149	2472	134	417
KD1F	"	3,540,731	2282	130	417
W1UK	"	2,707,146	2043	116	387
K1ZR	"	2,682,211	2546	109	360
W1ZT	"	2,282,148	1469	128	433
WC1M	"	2,236,600	1922	102	320
KS1J	"	2,046,148	1842	104	332
K1YT	"	1,675,590	1240	113	392
W1TE	"	1,228,110	983	110	360
W0MHK/1	"	1,221,759	959	112	339
KG1D	"	1,014,475	1375	99	286
N1RJF	"	908,269	1121	92	261
W1XK	"	795,960	711	94	308
K1SM	"	605,320	591	101	269
K1EFO	"	547,950	805	73	208
WBHAP/1	"	515,616	581	95	298
W1ZS	"	398,552	527	79	229
N1JP	"	375,873	540	84	275
K1GN	"	329,376	412	79	203
K1RM	"	302,064	615	34	140
K1DWQ	"	242,436	382	68	199
W1FV	"	238,572	478	50	138
N1L1	"	81,840	198	41	124
K2L1P	"	43,306	132	42	76
N1MEZ	"	42,256	129	44	95
W1OHM	"	30,821	115	38	81
K1MV	"	5,041	51	31	40
W21K	"	100	235	62	157
K1SF	"	2,030	27	9	20
K2SS/1	21	770,355	1812	34	125
W1MK	3.5	413,576	1103	30	106
K1LZ	"	236,529	831	25	98
K1VW	1.8	9,028	103	17	44
*KM1X	A	2,282,097	1642	115	378
*K1VUT	"	2,139,800	1514	116	404
*W1TQ	"	1,741,560	1398	109	351
*W1EQ	"	1,320,200	1076	108	352
*K1NO	"	1,257,580	1057	114	330
*N1WR	"	1,133,860	948	108	347
*K1HT	"	1,070,182	925	98	323
*W1FL	"	938,196	913	96	282
*W1FCN	"	773,836	806	99	307
*K1V5J	"	419,276	516	79	207
*K01YN	"	404,735	524	79	226
*AA1QD	"	382,228	612	60	178
*K1PY	"	331,800	494	61	178
*K1TQW	"	267,441	391	62	218
*W1ZZ	"	190,076	286	62	182
*NYTE	"	160,832	307	57	167
*K1MAC	"	153,576	376	59	184
*N3KCJ/1	"	152,985	261	65	155
*M1ZPC	"	105,450	248	45	140
*K21O	"	104,742	258	59	139
*AB1BX	"	84,980	208	31	109
*K1AO	"	84,525	199	53	122
*N1HOQ	"	62,034	161	41	106
*AA1SU	"	51,554	199	63	110
*M1ODA	"	51,256	164	43	106
*KA1ZFK	"	43,292	159	44	114
*W1AZ	"	42,550	140	47	113
*WB1GEX	"	2,300	33	23	27
*W3EP/1	28	167,400	404	30	114
*W1CI	21	4,234	119	33	45
N2NT	A	6,086,220	3461	152	493
N2BA	"	5,831,100	3290	147	480
N2RM	"	4,618,074	2892	142	449
N2ZU	"	3,097,326	2286	124	365
N2CW	"	2,497,256	1657	131	410
N2EN	"	2,060,068	1542	129	353
K2NV	"	1,709,050	1238	124	390
K2FU	"	1,529,122	1171	122	356
N2ED	"	1,243,788	1109	120	349
K8F6/2	"	1,028,218	881	124	399
N2WLG	"	942,560	809	111	319
KN2J	"	727,726	731	100	291
WA2C	"	696,865	982	90	265
KE2WY	"	673,728	675	91	261
K6G6TY/2	"	638,469	786	111	348
N2WK	"	503,876	493	117	295
W2ZU	"	437,580	537	62	224
K2CS	"	359,984	495	80	222
W2GDJ	"	359,697	501	92	207
W2YK	"	350,880	508	95	249
WA2YSJ	"	326,695	408	83	210
K2ZD	"	319,587	375	80	227

K2DM	"	256,542	343	92	194
KU2X	"	244,133	361	68	173
W2EZ	"	238,492	350	54	164
K2JL	"	234,240	340	60	184
N2UM	"	206,050	337	96	221
KE2VB	"	204,825	324	56	169
W2HCA	"	202,536	318	63	169
W2QMV	"	159,080	274	54	151
KQ2O	"	141,321	327	49	114
W2BE	"	137,611	264	72	169
WF2Y	"	110,448	191	61	147
W2UDT	"	109,174	305	62	159
KG2BI	"	60,799	176	50	113
K2YR	"	48,910	139	53	93
N2LKF	"	35,910	150	36	99
W2OP	"	22,608	142	48	96
N2FR	"	21,400	81	39	61
K2MR	"	11,009	85	33	68
K2WB	"	312	8	5	8
KD2I	28	335,020	940	27	113
NA2X	"	128,385	342	29	106
K2WK	14	1,007,781	1955	39	144
K2BA	"	310,542	832	35	111
N2GC	3.5	77,616	286	20	79
W2VO	1.8	17,400	106	20	55
*W2TZ	A	2,678,662	1942	121	390
*NA2U	"	2,213,580	1704	111	356
*N2TN	"	1,016,834	754	130	388
*WK2G	"	974,247	1017	92	301
*K2JL	"	891,618	749	109	317
*KM2L	"	562,261	602	80	249
*WA2EYA	"	552,062	612	76	253
*KA2NDX	"	258,300	420	63	189
*N2BDB	"	237,503	344	71	188
*K2SJJ	"	220,665	374	62	173
*K2YWE	"	195,529	352	67	184
*AA2WQ	"	175,720	281	65	165
*KC2TA	"	163,680	372	41	114
*N2ST	"	146,048	269	63	161
*W2CXY	"	85,794	182	54	127
*W2FUI	"	50,400	169	27	78
*K2GWL	"	39,176	332	33	85
*W3EH/2	"	33,456	118	35	88
*K2JF	"	29,785	160	53	132
*WA2VQV	"	26,224	111	26	62
*WW2J	"	16,836	118	27	65
*K2SWZ	"	14,507	63	34	55
*K3GY5/2	"	2,700	29	13	23
*K2MFY/28	"	159,453	448	27	112
*N2QD	"	156,500	452	25	100
*K2CAC	"	143,507	406	28	105
*WA2RZJ	21	42,622	156	27	74
*WB2DVU	14	94,764	319	26	91

W4E	"	3,914,204	2632	145	457
W4RX	"	3,654,864	2326	149	463
W4MR	"	3,558,746	2244	138	440
W4PA	"	3,555,681	2308	144	425
AA4S	"	2,867,580	1965	131	403
N6AR/4	"	2,709,564	1804	136	436
KALTA	"	1,534,689	1402	131	376
AA4NN	"	1,274,400	1255	111	289
W3VT/4	"	1,246,233	907	124	363
W4YE	"	1,209,600	938	108	342
W4BAE/7	"	831,402	724	116	302
W8PC/4	"	772,148	690	110	303
N4MM	"	758,334	628	104	308
K4LQ	"	529,184	552	99	269
K4YR	"	455,175	513	99	289
K9HU/4	"	357,870	424	78	224
N3JT/4	"	303,163	476	70	199
W2YE/4	"	298,480	405	65	195
K4LM	"	249,033	304	85	238
W4IF	"	234,856	328	66	182
W4RW	"	152,672	266	56	152
K4NA	"	116,204	223	64	145
N8PR/4	"	94,600	193	73	142
W4KYW	"	85,808	175	56	117
N4EK	"	69,440	194	52	108
W4ZYT	"	61,612	154	54	92
K6ETM/4	"	44,895	137	41	82
K4ZT	"	44,022	177	21	66
N4GU	"	31,857	123	34	77
K4UX	"	25,894	92	43	64
K4VUD	"	23,920	75	44	71
KS4YT	"	20,384	75	34	64
K4FW5	"	10,703	64	29	48
W4QGG	"	9,246	50	22	45
N4UH	"	8,255	55	25	40
K4EP	"	7,056	57	18	38
N4BP	28	483,705	1292	29	106
K4WX	"	422,919	1149	27	100
W9WJ/4	"	339,456	965	28	110
W4OSN	"	325,176	875	30	106
K4EA	"	296,088	829	32	124
K4AMC	"	241,296	676	27	105
A12C/4	"	174,875	523	26	99
N4AT	21	584,824	1358	38	126
K4QAD	"	443,022	1152	34	107
N4PN	"	394,856	1051	35	119
N4IR	"	295,867	734	31	112
W3AU/4	"	111,186	403	35	107
N4JV	14	47,726	208	26	71
K4VU	"	9,062	75	15	31
W4DD	"	11,252	94	14	44
N4SLR	3.5	28,014	179	19	68
K4TEA	1.8	5,130	47	16	29
*W4QD	A	1,381,412	1093	128	354
*NA4K	"	1,158,850	1016	125	348
*W4HR	"	979,925	789	121	354
*K4FPF	"	717,897	661	98	315
*K4IE	"	718,960	675	102	278
*N4PSE	"	578,614	628	99	287
*K7CMZ/4	"	369,360	516	86	238
*N8LMM/4	"	353,601	468	90	213
*N3TG/4	"	347,378	435	77	212
*K4MX	"	335,523	423	80	211
*W4WN	"	328,318	424	74	204
*AA4KD	"	176,870	331	61	169
*K4DGG	"	154,635	352	52	131
*K4UVT	"	123,050	212	59	155
*K5AS	"	95,804	224	51	121
*WB4DNL	"	60,028	180	59	113
*K4WJ	"	58,270	115	38	100
*N4EL	"	35,741	136	32	71
*M4GJ	"	29,607	124	48	91
*AC4ZD	"	23,400	130	39	81
*K4CGIA	"	22,680	107	40	100
*W4IDX	"	18,480	87	21	59
*K0EJ/4	"	15,980	87	38	47
*N4KN	"	100	358	32	81
*WBRTU/4	"	100	18	13	13
*KF4ZTU	"	100	57	32	45
*WB4DTH	28	208,372	605	28	105
*K4WW	"	49,203	201	25	74
*W4HM	"	47,957	190	23	68
*K4RO	"	45,844	237		

*OKZHI	74,646	588	19	68	UA1OZ	606,424	971	97	267	OH1BV	153,360	412	55	158	DL1JF	706,482	1020	89	289	*DL4AAE	17,272	91	25	43
*OK1FOG	59,670	469	16	74	RK3DK	555,076	1119	78	224	OH1BO1	53,949	178	48	99	DL2MDU	678,972	890	108	305	*DL2MIH	12,584	55	30	58
*OK2DU	36,719	467	11	62	RA3JF	315,000	664	92	268	OH2AQ	28	190,720	748	33	DF1DV	601,762	937	95	276	*DH3MG	12,103	150	28	63
*OK2BTk	5,412	142	6	27	UA1AUA	307,179	627	70	209	OH7JL	39,990	210	23	70	DF3OL	514,745	741	97	288	*DL3JRA	10,864	76	24	32
*OK2PSA	693	29	5	16	RV1CC	235,755	481	67	212	OH1F1	21	607,338	1744	37	DJ2JA	507,400	650	100	244	*DL11A	9,639	73	22	59
*OK2PWJ.1.8	11,725	147	12	55	UA1A1C	212,444	356	79	228	OH2BR	383,308	1183	37	121	DJ2JA1	495,720	858	106	228	*DF5ZV	7,370	63	20	35
*OK1FFC	11,373	281	6	45	RZ6ZF	184,440	487	75	190	(Opr. OH1NOA)					DL3BOD	476,088	866	76	256	*DL5ANS	3,924	43	16	20
*OK2OU	693	37	3	21	UA4LY	76,760	204	71	131	OH3WS	151,256	543	32	114	DL8YR	457,600	774	78	247	*DL4ABR	3,818	67	13	33

DENMARK

OZ1MJO	A	3,779,440	3162	152	443
OZ5MJO		456,435	725	78	267
OZ85W		196,770	487	54	156
OZ5RM		12,403	122	22	97
OZ8R	7	92,493	352	33	96
*OZ8AE	A	645,816	806	97	282
*OZ8NJ		497,004	1051	78	254
*OZ5ABD		241,366	687	60	169
*OZ5UR		147,114	378	62	136
*OZ6TL		109,011	306	49	130
*OZ5DK		98,343	510	55	168
*OZ4FF		24,500	128	34	64
*OZ1APA	28	2,400	35	12	18
*OZ1AV	21	31,878	222	19	47
*OZ8NV		1,230	29	11	19
*OZ18MA	14	56,463	327	23	64
*OZ/SM7GCZ		37,754	213	19	67

DODECANESE

J45KLN	A	569,772	1612	61	191
			(Opr. SMØCMH)		

ENGLAND

G4BUO	A	5,073,750	3566	148	467
GØIVZ		4,722,406	3735	135	463
G4BJM		3,826,284	3780	125	367
G3UFX		1,201,200	1415	93	307
G3JFY		944,125	1288	89	326
GØJUN		755,430	1319	84	254
G3WJX		226,003	562	60	133
M8W		220,088	426	70	174
			(Opr. G4IIV)		
G3NAS		31,243	190	51	106
G3MXJ	28	620,172	1577	36	125
G3TBK		293,846	879	33	139
GØØRH		221,112	1119	31	80
G4ODV		168,338	566	35	111
G8G	21	412,794	1380	34	119
			(Opr. GØIIL)		
G3PJT		375,744	1217	34	118
G4HTD	7	359,226	1582	31	95
G3WGN	3.5	187,566	957	27	102
*G3WGV	A	1,898,000	1963	112	388
*G3KPK		745,500	1120	80	270
*G5LP		727,909	1226	98	323
*G3NKS		713,754	1000	84	258
*GØLZL		572,592	1015	77	239
*G3RSD		459,218	910	70	228
*G3VQO		395,032	804	64	204
*G3KQK		342,838	652	76	181
*G3JKY		252,120	631	50	170
*G3GGG		233,616	424	59	189
*G3HLZ		106,743	328	51	170
*G3ECS		82,992	289	44	89
*G4DDX		36,138	195	33	81
*MØAAA/P		7,906	103	14	53
*G3ESF	28	83,629	433	22	69
*G4UZN		18,009	106	25	44
*G4ZME		12,060	131	14	22
*GØMNT	21	255,100	1018	32	98
*G3VXJ		95,489	354	36	101
*G3MXT		50,112	312	21	66
*G3KHT	14	11,505	182	15	44
*G5MY	7	68,310	306	17	93
*G3WRR		46,552	300	17	71
*GØBMS	3.5	23,856	298	13	58

ESTONIA

*ES10D	A	1,173,816	1410	134	414
*ES4RD		179,346	468	63	150
*ES2NA	28	51,360	276	23	57
*ES7LGM		26,424	162	22	50
*ES1TM		11,074	133	16	33
*ES3HO	21	36,036	200	23	68
*ES2RJ	14	282,129	984	38	119
*ES3BM	7	23,364	208	15	51
*ES6CO	3.5	1,225	43	9	26

EUROPEAN RUSSIA

UA4LU	A	2,500,084	2689	135	482
RN6BY		2,348,400	2593	141	459
UA4HTT		2,207,413	2366	146	467
RW4WR		1,892,134	1840	136	415
UA1OMS		1,716,336	1839	133	389
RA4AR		1,488,650	2088	114	361
RX3APM		1,286,376	1524	121	411
RO3A		1,280,994	2093	104	325
			(Opr. UA3-170)		
RX3ARI		1,089,890	1548	93	272
RN1OW		974,525	1474	95	330
RK3AD		967,632	1285	111	345
RV6AV		863,898	1217	123	346
RV3LO		750,820	1066	103	331
UA3TU		747,088	1111	95	329
RA1OJ		632,082	893	93	273

UA1OZ	606,424	971	97	267	
RK3DK	555,076	1119	78	224	
RA3JF	315,000	664	92	268	
UA1AUA	307,179	627	70	209	
RV1CC	235,755	481	67	212	
UA1A1C	212,444	356	79	228	
RZ6ZF	184,440	487	75	190	
UA4LY	76,760	204	71	131	
RN3FA	63,492	236	53	90	
RW4CW	61,824	268	37	124	
UA3XGM	52,326	212	40	113	
RX3AEX	51,404	270	55	126	
RK3FY	41,503	150	48	73	
RK3VF	14,184	111	30	42	
UA3UCD	13,608	76	26	58	
RA3XR	9,200	51	33	47	
UA4ZR	28	133,736	511	30	116
RJ4CO		111,800	430	29	101
RØUPL	21	347,424	1134	40	128
RA3XO		309,424	901	37	129
RX6LG		249,348	958	29	103
RV6BY		112,243	514	30	77
RØ3ACE	14	99,186	524	28	94
UA4FEN		26,520	191	23	55
RA4CD		18,564	93	24	67
UA4LL	7	296,670	988	37	128
RW1ZZ		256,908	843	34	124
RV6YV		170,850	663	33	117
RW3WV		112,042	650	23	83
RØ3FO	3.5	98,792	709	25	81
UA6BAD		66,458	628	19	75
UA6LTJ		64,512	442	18	78
RW3XX		57,469	514	18	83
RA4PO		47,960	351	17	71
RK3AP		6,105	95	6	31
UA6XT		850	24	20	34
RA4NW	1.8	47,986	375	22	64
UA4CJ		19,468	281	10	52
*RA1ACJ	A	1,055,556	1390	97	339
*UA3ABJ		978,208	1330	102	295
*UA4WAN		936,124	1259	115	354
*UA4FFR		917,285	1268	113	366
*RA3CW		820,105	1147	114	367
*UA4LA		818,040	1167	109	299
*RA3BY		720,892	988	111	347
*RW1AI		653,672	1043	91	313
*RV6LFE		539,537	997	83	254
*RW1ON		497,710	811	88	267
*UA1OMX		478,515	701	100	265
*RØ3AQY		371,308	787	69	229
*RX4CD		323,010	688	81	210
*UA3AGS		307,008	554	82	206
*RA1QJA		282,653	573	61	210
*RA1QX		282,396	520	76	227
*UA4YQ		250,952	511	56	161
*RØ3UAG		246,400	572	73	235
*RV4ML		197,650	391	76	219
*UA6AK		174,900	330	62	150
*UA4SS		155,040	585	53	187
*RV3YR		154,395	549	58	177
*UA6AGK		131,100	257	79	149
*RX3AHQ		125,664	403	47	140
*UA4QK		109,434	263	67	116
*RW1OJ		108,953	397	59	162
*UA1RJ		93,771	199	78	129
*RA6LAE		93,280	250	46	130
*UA4JG		60,344	226	51	101
*UA4AO		43,848	187	34	74
*RW1OF		27,720	129	41	79
*UA6JY		22,770	72	47	68
*UA3UMT		19,596	140	24	68
*RW3VA		11,468	83	28	33
*RA3XA		7,808	91	17	47
*UA3UKQ		950	27	16	22
*RV3UC		700	21	18	17
*RW6BN	28	43,674	247	24	63
*UA3XBB		38,412	224	26	73
*UA4ML	21	389,025	1236	38	137
*RA4PFO		159,294	604	33	90

RY9C	1,177,813	3391	152	485
UA90XC	267,716	705	77	177
RR0SXF	1,087,016	1197	110	282

INDIA				
VU2WAP	3,408,819	3478	130	359

JAPAN				
JH7PKU	5,405,400	3239	170	460
JR1ZTT	4,343,125	2827	172	453
JA2ZJW	1,300,725	1414	120	249
JJ3BFC	1,070,328	847	146	337
JE2YHS	833,782	859	128	230
JF2SKV/2	447,460	765	92	168
JA1YQH	351,034	528	116	218
JJ1ZXE	59,478	216	55	83
JJ2ZEY	6,528	70	30	34
JA9YBA	4,125	46	10	23

JORDAN				
JY9QJ	6,112,620	3967	139	441

MALDIVIVE ISLANDS				
8Q7DV	7,391,820	4274	172	534

THAILAND				
HS5AC	529,534	1304	82	189
HS0AC	136,422	903	87	147

EUROPE				
4U-VIENNA				
4U1VIC	3,619,560	3823	147	473

BALEARIC ISLANDS				
EA6IB	9,522,048	6145	179	643

BELARUS				
EW1WN	228,018	626	65	202

BELGIUM				
0T8P	2,327,808	3106	116	332
0T8K	506,482	1250	89	225

BULGARIA				
LZ9A	6,154,848	4841	167	607
LZ5Z	4,147,200	4363	175	625
LZ6A	1,035,450	1509	96	294
LZ1AQ	929,788	1419	95	287

CROATIA				
9A5D	2,356,714	3377	117	337

CZECH REPUBLIC				
OK5W	6,573,238	3898	187	667
OL3A	3,933,762	3444	163	524
OL5Q	2,322,552	2878	105	321
OK2KOD	1,295,552	1393	116	380
OK2KDS	1,137,270	1284	107	347
OL2A	986,832	1698	85	251
OK1KCF	65,208	244	44	112
OK5SAZ	10,998	109	23	55

ENGLAND				
G3TMA	1,313,654	1799	122	344

EUROPEAN RUSSIA				
RU1A	9,044,874	4579	203	751
UD6M	7,033,078	4841	184	690
RM6A	5,346,555	3966	183	644
RK4WWA	2,246,412	2264	136	428
RZ1AWO	1,801,624	2273	112	360
RK3AWE	1,735,794	2414	108	330
RN3R	1,486,275	2553	118	357
RK6AYN	725,592	1490	100	292
RK3XPX	692,043	1151	75	238
RK4CWA	681,616	1314	90	287
RK3WWA	395,266	887	76	181
RK3YYM	205,800	815	67	213
RZ4SWM	42,276	323	35	121

FINLAND				
OH7M	6,776,410	3830	185	680
OH5M	3,644,586	2848	164	535
OH6X	3,265,698	3047	160	559
OH6NIO	2,749,185	2311	137	460

FRANCE				
TM2Y	10,357,360	5480	188	678
F5PED	2,561,382	2874	129	360
F6ENO	1,340,148	2511	91	257
F5KPG	407,238	780	80	219

GERMANY				
DL2NBU	7,925,400	4223	186	664
DJ6QT	4,847,840	3401	165	574
DL0AO	2,449,645	2018	145	460

DK5MV	2,277,790	1964	143	458
DK1II	2,094,150	1998	132	443
DF0CI	1,433,498	1545	127	379
DK0TZ	1,343,314	1475	114	344
DK0ZG	861,120	1803	97	263
DK0FFO	323,993	707	65	216
DL0BO/P	209,338	626	62	200
DF0XG	29,165	158	29	75

HUNGARY				
HG1S	8,601,558	5977	181	652
HA1KRR	2,384,964	3000	117	316

ITALY				
IJ3T	4,982,934	3761	165	568
IQ2A	4,293,828	3168	159	534
IY2ARI	3,353,658	3157	133	428
IK1QBT	2,274,000	2458	121	379
IU2C	143,871	415	60	161
IQ2L	70,720	340	33	52

LITHUANIA				
LY3AV	2,088,314	1960	137	441

LUXEMBOURG				
LX/DL4SDX	3,193,992	3385	117	369

NETHERLANDS				
PI4COM	5,094,642	4064	162	545
PI4CC	3,622,227	3477	140	461
PA3HBB	1,425,110	1851	97	318

NORWAY				
LA8W	5,829,442	4289	166	552
LA1K	5,848	69	25	43

POLAND				
SQ6Z	8,775,480	5142	188	652
SN0KRT	780,896	1155	90	278
SP1KYB	81,286	443	23	74

SCOTLAND				
GM8C	1,243,452	1877	94	299

SLOVAK REPUBLIC				
OM8A	7,360,440	4669	181	649
OM3A	6,005,610	4053	162	592

SLOVENIA				
S50G	5,007,123	3418	161	572
S52C	320,222	1425	35	143

SPAIN				
EA5BY	4,231,458	4074	138	464
ED7UR	119,340	553	48	105

SWEDEN				
SK6FM	3,757,008	3244	164	532
SK2AU	351,780	640	79	251

UKRAINE				
UR3IWA	4,607,850	3402	169	526
UT7Z	3,307,803	3566	140	431
UT3IZZ	949,158	977	124	362
UR4LZA	294,415	665	60	205
UR4MWU	250,299	611	76	185
UR4LWY	86,526	245	62	145

YUGOSLAVIA				
YU7AL	1,978,812	2132	124	402
YZ7A	765,600	1412	84	246
YZ7W	404,415	851	76	209
YT1Z	364,511	1011	67	234
YU1HFG	342,662	1339	37	109

OCEANIA				
GUAM				
AH2R	8,902,349	5027	177	476

LORD HOWE ISLAND				
VK9LX	6,154,205	4437	139	364

MICRONESIA				
V63X	7,481,874	5020	161	373

NEW ZEALAND				
ZM2K	6,239,018	4192	155	411

SOUTH AMERICA				
ARGENTINA				
LU8XW	515,619	1855	31	82
LW6EFP	56,059	390	25	36

CHILE				
CE3F	4,170,642	3617	134	365

MULTI-OPERATOR MULTI-TRANSMITTER NORTH AMERICA

UNITED STATES				
KC1XX	22,473,282	8936	199	763
W3LPL	21,271,495	8303	202	763
K3LR	20,897,569	8101	197	762
K1KI	17,808,700	7334	190	720
K2LE/1	13,276,122	6165	174	648
K9NS	11,526,040	5900	189	667
K4VX/0	11,066,276	5691	176	591
K8CC	10,861,630	5426	184	661
W3PP	10,682,007	5401	174	639
W01N	10,428,219	5622	175	626
K1RX	10,328,448	5217	175	657
W4MYA	10,219,584	4904	179	637
W8AV	9,884,992	4749	182	650
W6BA	8,973,690	4397	184	582
W0AIH/9	8,454,555	4405	179	622
W7RM	7,273,814	4441	185	509
W3EA	7,184,826	4087	169	617
K3II	7,118,514	3554	163	591
W3EEE	6,510,520	3275	162	578
W3MM	6,141,913	3184	172	627
KB1H	5,828,103	3380	157	566
K4OJ	4,991,336	3028	160	524
NJ4F	4,908,915	3319	161	544
W5FRC	4,454,984	2278	157	555
N2MM	2,931,066	1859	160	506
N2BIM	2,922,368	1775	141	491
N15M	2,726,784	1811	157	491
KV1W	1,650,285	1515	117	378
KB1SO	1,456,621	2583	134	437

CANADA				
VE3EJ	24,413,191	10539	190	739

COSTA RICA				
T11C	32,783,400	15414	189	711

GRENADA				
J3A	14,680,370	10579	162	508

JAMAICA				
6Y2A	39,279,140	17609	192	740

ST. LUCIA				
J6DX	25,596,764	14292	179	620

AFRICA				
CEUTA & MELILLA				
EA9EA	29,532,750	12888	178	667

TOGO				
5V7A	34,658,186	14381	187	679

ASIA				
CYPRUS				
P3A	24,422,471	12908	175	622

JAPAN				
JA5BJC	14,115,675	6788	190	615
JA4EKO	9,968,112	5329	186	558
JA1YXP	9,623,520	5267	189	549
JA3YKC	4,941,032	3685	162	406
JA1YPA	813,588	1087	109	193

MONGOLIA				
JT1A	10,771,354	8112	164	474

MYANMAR				
XZ1N	5,464,341	5486	159	438

UNITED ARAB EMIRATES				
A61AJ	28,014,492	12692	195	718

EUROPE				
CZECH REPUBLIC				
OL7W	3,252,510	3099	132	507

DENMARK				
OZ5W	4,406,832	3752	144	462
OZ5WQ	3,483,311	3880	144	467

DODECANESE				
J45T	2,909,592	6051	118	386

ESTONIA				
ES5Q	5,250,636	3932	165	567

FINLAND				
OH2U	18,387,820	9381	205	802
OH1AJ	2,623,500	2542	133	450

GERMANY				
DF0HQ	18,897,540	10289	204	751
DL0CS	13,194,288	7356	203	741
DL0KF	5,967,034	4829	169	618