

# Results of the 2003 CQ WW DX CW Contest

BY BOB COX,\* K3EST

## Expanded CQ WW Contest Results on the Web

We've moved a few elements of our contest reporting onto the CQ website again this year, including **Station Operators** of Multi-Op stations, and **Zone Leaders/Single Op**. In addition, we have expanded **QRM** on the web.

To view these additional and expanded elements of this year's CQ WW results, go to <<http://www.cq-amateur-radio.com/cqwwhome.html>>, then click on "Expanded results, 2003 CQ WW CW" and select the category you want to see. You may also get there by going to our home page at <<http://www.cq-amateur-radio.com>>, clicking on "Contest Rules & Info," then clicking on "CQ World Wide DX Contest" and selecting "Expanded Results, 2003 CQ WW CW."

**A**fter sorting through the 4109 CW and 4152 SSB logs that were received, the 2003 CQ WW DX contests can best be summarized by the word *fantastic!* Also, the number of electronic logs increased to 7761!

If the CQ WW CW is any indication, CW is alive and well, as the 4109 logs received sets a new all-time-high record. The CW conditions were outstanding. In the words of some of the entrants: "Thanks to the calm geomagnetic conditions, the entire contest was enjoyable"—*JJ1BDX/3*. "Wow! The best propagation in the last year—*4M7A*. "What an amazing contest. It just doesn't get any better than this"—*AK5X*.

Outstanding openings on 10, 15, and 20 meters made for lots of QSO opportunities for many people: "It was nice to look at the propagation report and see the *K*-index at 1 during a contest! Probably the best conditions for a contest weekend this fall"—*K8IR*. A large number of normally hard-to-find DX countries were the air for the contest and made for many new countries for lots of contesters. Everyone looked forward to the fun and setting personal records. Look in the scores listing for your call, and check out the various boxes to see how the top entrants performed.

## High Power

The High Power, All Band category requires a very good plan. If you are going for the gold, you know that you will have to try your best for close to 48 hours straight! Not only that, but to be at the top, you have to be versatile in using two bands, running on one band while tuning a second band for multipliers. It takes practice.

The top three in the 2003 contest are all experts. The world top score went to multi-time champion Jose, CT1BOH, operating from P40E. Jose made over 8000 QSOs (averaging over 166 Q/hr)! Second place went to Al, 4L5A, operating from D4B on a mountaintop overlooking the ocean (see the SSB results last month for a photo of the QTH). Third place was won by Jeff, N5TJ, who operated from KP3Z.

Out in the Pacific, Mike, KH6ND, pushed KH7X to a new Oceania record. In Europe, Timo, OH1NOA, once again was the high scorer. He set a new European all-time record. Timo

was followed by OK1RF and TM6X. In the U.S., the top honor went to Scott, W4PA, operating from NT1Y in northern Vermont. Just to the east was the second-place station of Doug, K1DG. Third place went to LZ4AX, who operated from central Pennsylvania and took K3CR to new heights. Special mention must be made of ZS4TX, EX9A, VK6AA, and VK4UC, all of whom turned in fantastic scores from a long way away from population centers.

The continental winners were: North America KP3Z, Africa D4B, Asia A45XR, Japan JH5FXP, Europe CT8T, Oceania KH7X, and South America P40E.

## Low Power

"I've always hesitated to spend much time in the worldwide contests with just my li'l ol' 2-element quad at 40 feet, but I really had pretty

good luck working S&P the whole time!"—*NØSXX*. "Thank you for very nice contest. I spent a wonderful radio ham weekend in the east-north Hungarian spa town Eger, running Yaesu FT987, monoband vertical dipole from third floor of the hotel Flora"—*HA/OK2WH*.

These two comments pinpoint what's best about the CQ WW—little pistols sharing in the fun. The category that has the greatest number of participants by far is Low Power. To win this category is not easy. Last year Tom, W2SC, keyed 8P5A to the top of the hill. He was followed by Jon, KL2A, who traveled to CT9M, and by AA3B at V26K. Other outstanding scorers in the top ten were SU9NC; 7X2ARA (op. DF4SA); and UA9AYA (op. Willy, UA9BA), with the top score in Asia. The outstanding efforts of Masa, JH4UYB, and VP8/LZ2UU also must be mentioned.

In the U.S., the top barefoot-power honor went to Uli, KK8I (DL2HBX), at K8CC. Uli was followed by N1UR and Terry, N4TZ/9. Over in Europe, Filipe, CT1ILT, reprised his SSB win by taking top honors as CQØT. Operating from the Iberian peninsula helps, but you also must have good skills. Second in Europe went to MU/DL2OBF and third to OK2PP.

The continental winners were: North America 8P5A, Africa CT9M, Asia UA9AYA, Japan JH4UYB, Europe CQØT, Oceania YBØECT, and South America PY2NA.



The KC1XX Multi-Multi team (left to right): Matt, KC1XX; Bill, W2RQ; Dave, KM3T; John, K1AR; John, W1FV; Dave, N3RD; Bill, K1GQ; Charlie, K1XX, and Sabrina (oldest daughter of KC1XX).

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## TROPHY WINNERS AND DONORS

**SINGLE OPERATOR  
ALL BAND  
World**  
P40E (Opr: Jose Carlos Cardoso Nunes, CT1BOH)  
Donor: W9IOP Memorial (Albert Kahn, K4FW)

**World Low Power**  
8P5A (Opr: Thomas Georgens, W2SC)  
Donor: Slovenia Contest Club

**World QRPP**  
Didier Bironneau, FY5FY  
Donor: Gene Walsh, N2AA

**World Assisted**  
3V8BB (Opr: Hrane Milosevic, YT1AD)  
Donor: CTRI Contest Group

**USA**  
NT1Y (Opr: Scott Robbins, W4PA)  
Donor: Frankford Radio Club

**USA Low Power**  
K8CC (Opr: Ulrich Ann, KK8I)  
Donor: North Coast Contesters

**USA – Zone 3**  
N7RT (Opr: Steve London, N2IC)  
Donor: Central Arizona DX Association

**USA – Zone 4**  
Michael Wetzel, W9RE  
Donor: The Society of Midwest Contesters

**Canada**  
VE2IM (Opr: Yuri Onipko, VE3DZ)  
Donor: CQ magazine

**Carib./C.A.**  
KP3Z (Opr: Jeffrey Steinman, N5TJ)  
Donor: Chuck Shinn, W7MAP

**Europe**  
CT8T (Opr: Timo Klimoff, OH1NOA)  
Donor: W3AU Memorial (Pete Raymond, N4KW)

**Europe – Low Power**  
CQ0T (Opr: Filipe Monteiro Lopes, CT1ILT)  
Donor: Scott Jones, N3RA & Tim Duffy, K3LR

**Scandinavia**  
OH1F (Opr: Timo Pohjola, OH1MDR)  
Donor: W3FYS Memorial (Chas Weir, Jr., W6UM)

**Russia**  
Stan Pankov, RW1ZA  
Donor: Roman Thomas, RZ3AA

**Africa**  
D4B (Opr: Alexander Teimurazov, 4L5A)  
Donor: Gordon Marshall, W6RR

**Asia**  
Chris Dabrowski, A45XR  
Donor: Chuck Shinn, W7MAP

**Japan**  
Satoshi Hara, JH5FXP  
Donor: Tack Kumagai, JE1CKA

**Japan – Low Power**  
Masa Okano, JH4UYB  
Donor: Western Washington DX Club

**Oceania**  
KH7X (Opr: Michael Gibson, KH6ND)  
Donor: Chris Tran, ZL1CT

**South America**  
PJ4M (Opr: Daniel Marlow, K2QM)  
Donor: Venezuela DX Club

**SINGLE OPERATOR, SINGLE BAND  
World – 28 MHz**  
LQ7D (Opr: Diego Alonso, LW9DA)  
Donor: Joel Chalmers, KG6DX

**World – 21 MHz**  
FS5UQ (Opr: Larry Pace, N7DD)  
Donor: Lew Sayre, W7EW

**World – 14 MHz**  
D44TD (Opr: Luca Aliprandi, IK2NCJ)  
Donor: W2JT Memorial (North Jersey DX Assn.)

**World – 7 MHz**  
EA8EA (Opr: Ville Hilesmaa, OH2MM)  
Donor: Alex M. Kasevich, VP2MM

**World – 3.5 MHz**  
Mauri Leppala, EA8/OH4NL  
Donor: Fred Capossela, K6SSS

**World – 1.8 MHz**  
EA8EW (Opr: Jaakko Silanto, OH1MA)  
Donor: Kenneth Byers, Jr., K4TEA

**USA – 28 MHz**  
Bill Tippett, W4ZV  
Donor: Wireless Institute of the Northeast

**USA – 21 MHz**  
Kenneth Wolff, K1EA  
Donor: Wayne Carroll, W4MPY

**USA – 14 MHz**  
Daniel Handa, W7WA  
Donor: Northern Illinois DX Association

**USA – 7 MHz**  
Philip Allardice, KT3Y  
Donor: W6AM Memorial (Jan Perkins, N6AW)

**USA – 3.5 MHz**  
Robye Lahlum, W1MK  
Donor: Bill Feidt, NG3K

**USA – 1.8 MHz**  
Lawrence Emery, K1UO  
Donor: Kat Obermann Memorial  
(Dave Patton, NN1N & Mark Obermann, AG9A)

**Canada (14 MHz)**  
Ronald Kaye, VE7XR  
Donor: Radio Amateurs of Canada

**Carib./C.A. (14 MHz)**  
ZF2AM (Opr: Joseph Staples, W5ASP)  
Donor: Bill Hein, NT1Y

**Europe – 28 MHz**  
Guiseppe La Parola, IT9BLB  
Donor: Jay Pryor, K4OGG

**Europe – 21 MHz**  
OH6AC (Opr: Jyrki Nieminen, OH6CS)  
Donor: Robert Naumann, N5NJ

**Europe – 14 MHz**  
Robert Cummings, G10KOW  
Donor: G3FxB Memorial (Maud Slater)

**Europe – 7 MHz**  
Tine Brajnik, S50A  
Donor: Ivo Pezer, 9A3A/5B4ADA

**Europe – 3.5 MHz**  
OH2BH (Opr: Ilkka Korpela, OH1WZ)  
Donor: K3VW Memorial (Frankford Radio Club)

**Europe – 1.8 MHz**  
Jerzy Stanis, SP3BQ  
Donor: Pat Barkey, N9RV & Terry Zivney, N4TZ

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

**Japan – 14 MHz**  
Hiroyuki Inaba, JS3CTQ  
Donor: Chris Terkla, N1XS

**MULTI-OPERATOR, SINGLE TRANSMITTER  
World**  
P3A (Oprs: RA9JX, RZ9UA, RW4WR,  
UA9CDV, RA3AUU)  
Donor: Anthony Susen, W3AOH

**U.S.A.**  
K1KI (Oprs: K1CC, K1KI, KM1P, W1RM)  
Donor: Douglas Zwiebel, KR2Q

**Canada**  
VE7SV (Oprs: VE7SV, VA7CW, VE7CC,  
VE7AG, VA7NT, VE7CT)  
Donor: Eastern Canadian DX Association

**Carib./C.A.**  
VP5X (Oprs: KY1V, OH3RB, OH9MM,  
W2AU, WA4PGM)  
Donor: Lone Star DX Association

**Africa**  
CT8/OL8R (Oprs: OK1DX, OK1FCJ)  
Donor: Harry Booklan, RA3AUU

**Asia**  
A61AJ\* (Oprs: A61AJ, N2AA, ON5NT,  
PA5M, S53A, S53R, S57CQ, SM7PKK, T97C)  
Donor: Steve Merchant, K6AW

**Japan**  
JA7YAA (Oprs: 7M1JAS, JF1SXL, JI5RPT,  
JE7HLZ, JG7PSJ, JO7DJT, JH0NZN)  
Donor: Vienna Int'l Amateur Radio Club – 4U1VIC

**Europe**  
EA6IB (Oprs: EA3AIR, EA3AJW, EA3ALZ, EA3AVV,  
EA5BM, EA5GX, EA6BF, EA6FB,  
EA6FO, EB6AOK)  
Donor: Bob Cox, K3EST

**Oceania – Pacific Rim**  
AH2R (Oprs: JI3ERV/NH2C, JR7OMD/WI3O,  
JR8VSE/NH2N, JH0USD/KH2VO)  
Donor: Junichi Tanaka, JH4RHF

**South America**  
LU7DW (Oprs: KD6WW, LU7DW, LW8EXF)  
Donor: Araucaria DX Group

**MULTI-OPERATOR, TWO-TRANSMITTERS  
World**  
CT9L (Oprs: DJ6QT, DL1EFD, DL1YD,  
IK2QEI, I2VXJ, SM2EKM, W8LU)  
Donor: Ranko Boca, YT6A

**U.S.A.**  
K4JA (Oprs: K4JA, K4MA, K4VV,  
K7SV, NY3A, W3BP, W4TNX)  
Donor: Northern Neck Contest Club

**Europe**  
RU1A (Oprs: RW1AC, RU1AA, RV1AW, RA1ACJ,  
RA1ARJ, RA1AIP, UA1ARX, UA1ACC)  
Donor: Aki Nagi, JA5DQH

**MULTI-OPERATOR, MULTI-TRANSMITTER  
World**  
HC8N (Oprs: N6JK, N6RO, K5KA, N5KO,  
N5RZ, N6TR, AA4NC, K6AW, W6RGG, K9NW)  
Donor: K2GL Memorial (Doug Zwiebel, KR2Q)

**USA**  
KC1XX (Oprs: KC1XX, K1AR, K1GQ,  
K1XX, W1FV, W2RQ, KM3T, N3RD)  
Donor: N6RJ Memorial (Bob Ferrero, W6RJ)

**Europe**  
ZA1A (Oprs: DJ2YA, DL3DXX, DL6LAU, K3NA,  
OH0XX, OH2BH, OH2KI, OH2PM, OH2TA,  
OH2UA, WA6CDR, Z35M, ZA1B, ZA1D, ZA1E, ZA1Z)  
Donor: Finnish Amateur Radio League

**Japan**  
JA5BJC (Oprs: JA5BJC, JA5FDJ, JA5JCC,  
JH5FIS, JH5R5S, JR5JQA, JR5VHU, JE1JKL,  
JM1UWB)  
Donor: Ryoza Goto, JH3JYS

**WORLD – SSB/CW COMBINED  
PJ2T**  
Donor: W0ID/W0UN ALPHA Award

**U.S.A. – MULTI-MULTI SSB/CW COMBINED  
KC1XX**  
Donor: N8SM Memorial (Operators of K3LR)

**JAPAN – MULTI-SINGLE SSB/CW COMBINED  
JA7YAA**  
Donor: Vienna Int'l Amateur Radio Club – 4U1VIC

### CONTEST EXPEDITIONS

**World Single Operator**  
7X2ARA (Opr: Cornelius Paul, DF4SA)  
Donor: Yankee Clipper Contest Club

**World Multi-Single**  
TO4WW (Oprs: F5CW, F5JJK, F5PTM)  
Donor: Carl Cook, A16V

**World Multi-Multi – Jim Neiger, N6TJ Award**  
5U5Z (Oprs: G0MTN, G3XTT, G4BWP, G4P1Q,  
K5VT, KC7V, KY7M)  
Donor: Alexander Teimurazov, 4L5A/D4B

**SPECIAL – SINGLE OPERATOR AWARD  
World SSB/CW Combined**  
D4B (Opr: Alexander Teimurazov, 4L5A)  
Donor: Hrane Milosevic, YT1AD

**World All Band: Under 21 years old**  
CQ0T (Opr: Filipe Monteiro Lopes, CT1ILT)  
Donor: Chuck Shinn, W7MAP

**CLUB  
World SSB/CW**  
Yankee Clipper Contest Club  
(460,687,341)  
Donor: W1WY Memorial (CQ magazine)

**Non-USA SSB/CW  
Rhein-Ruhr DX Assn.**  
(265,980,959)  
Donor: N6AUV Memorial  
(Northern California Contest Club)

\*Second place.



B4RF op. David, BA4RF, Single Op, 7 MHz, High Power.

### QRP

If you want to recapture your long-lost contesting skills, the QRP category can be the refresher course you need. Searching for QSOs, knowing when to call, and knowing when to move on are skills taught by being QRP.

The number one small signal was put out by Didier, FY5FY. He managed a whopping 3082 QSOs with 5 watts. Tom, N4KG, was the clear top North American scorer and #2 in the world, while third place world was taken by N8ET. Over in Europe the top score came from the far north, SM3C. He was followed by LY2FE and EU2MM. Special mention also must be made of the fine efforts of UA9SG, JR4DAH, W6JTI, and W0AH. They all had big scores.

The continental winners were: North America N4KG, Africa EA8BYM, Asia UA9SG, Japan JR4DAH, Europe SM3C, Oceania ZL2RVW, and South America FY5FY.

### Assisted

The Assisted category means just what it says. You receive electronic spotting assistance from some source. There are lots of reasons to try the Assisted category. Here is one from N1AU that you may not have thought about: "My best CW performance ever in the CQ WW. At age 76, after several decades of contesting, I am unable to copy callsigns at 30 wpm on the first hearing, so my CQing is stressful and unproductive. But I have a secret weapon now! It is the Writelog band map and the Telnet DX spotting network. A click on a call in the band map tunes my radio and enters the callsign into Writelog. Then I verify the callsign accuracy, and send my call and exchange with function keys."

The top spot in the world went to Hrane, YT1AD, operating 3V8BB. He was followed by C4M and K1G. In the U.S., first place went to K1G, second place to W2UP/3, and third to K3WW. Over in Europe, the top scorer was DL6FBL, followed by YL8M and ON4UN. In the top ten was TA2ZF (formerly M0SDX), who is now making people happy from Turkey.

The continental winners were: North America K1G, Africa 3V8BB, Asia C4M, Japan JH4IFF, Europe DL6FBL, Oceania VK1AA/4, and South America PQ2Q.

### Multi-Single

It was a battle of two Asian powerhouses for first place in the hotly contested Multi-Single category, one located at the edge of Europe and the other 2000 miles to the southeast. Actually, three out of the top six world positions went to Asian stations.

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**CLUB SCORES**

**USA Clubs**

Yankee Clipper Contest Club (W1)	460,687,341
Frankford Radio Club (W3)	377,848,219
Potomac Valley Radio Club	185,945,522
Southern California Contest Club	77,917,452
Northern California Contest Club	64,777,519
North Coast Contesters (W3/8)	62,125,432
Society Midwest Contesters	59,144,734
North Texas Contest Club	53,141,960
Florida Contest Group	52,252,166
Minnesota Wireless Assn.	44,469,340
Florida Contest Club	43,307,629
Tennessee Contest Group	42,757,014
Mad River Contest Club	34,056,335
Central Arizona DX Assn.	29,636,557
Southwest Ohio DX Assn.	27,826,034
Central Texas DX & Contest Club	21,065,876
Southeast Contest Club	20,695,788
Grand Mesa Contesters (W0)	20,406,513
Carolina DX Association	15,383,214
Western Washington DX Club	14,910,702
Magnolia DX Assn. (W5)	13,605,745
Willamette Valley DX Club (W7)	6,969,749
Northern Illinois DX Assn.	6,278,038
Kansas City DX Club	6,086,669
Texas DX Society	5,971,297
Rochester DX Assn (W2)	5,185,754
Empire Contest Club (W2)	4,342,471
Hudson Valley Contesters	3,513,137
Mother Lode DX&C Club (W6)	3,245,020
Spokane DX Assn.	3,110,237
Eastern Iowa DX Assn.	2,898,020
Salt City DX Assn (W2)	2,612,406
Oklahoma DX Assn.	1,722,748
Northern New York Contest Club	1,257,586
Sterling Park KARC (W4)	1,193,426
Southern California DX Club	1,141,693
Western New York DX Assn	1,107,676
WPKROP (W8)	907,696
Northern AZ DX Assn.	899,156
Akron Co. ARA (W8)	867,980
Northern Rockies DX Assn	867,156
Albermarle ARA (W4)	512,012
Metro DX Club	398,479
Loudoun ARG (W4)	335,243
Bergen ARA (W2)	291,929
Moultreie ARC (W9)	194,291
Lompoc DX Club (W6)	71,030

**DX Clubs**

Rhein-Rhur DX Assn.	265,980,959
Bavarian Contest Club	235,257,769
Contest Club Finland	101,868,384
Contest Club Ontario	82,917,337
Slovenian Contest Club	72,219,521
Araucaria DX Group (PY)	70,008,019
Russian Contest Club	55,863,135
Croatian Contest Club	53,075,173
Chiltern DX Club (G)	51,467,784
Ural Contest Group (UA9)	38,779,922
Marconi Contest Club (I)	37,670,456
Tikirikki Contest Club (I)	35,730,065
Les Nouvelles DX (F)	30,288,451
Kaunas Technical University RC	29,212,198
UA2 Contest Club	28,664,433
HA DX Club	25,183,341
Aphrodite Contest Group (5B)	23,042,770
Bashkortostan DX Club (RA9W)	21,587,077
GM DX Group	19,669,683
Latvian Contest Club	19,561,200
YU Contest Club	18,454,320
Ukrainian Contest Club	17,996,590
Top of Europe Contesters (SM)	17,783,161
Sao Paulo Contest Group	17,392,330
GP DX Group (CT)	16,753,246
SP DX Club	16,514,805
TuPY DX Group (PY2)	16,006,383
North Scotland Contest Group	14,414,647
Bad Power (LU)	14,277,870

British Columbia DX Club	13,203,806
Tartu Contest Team (ES)	12,567,420
Lithuanian DX Group	12,537,492
Kiev Contest Group	12,133,723
Vrhnika Contesters (S5)	10,499,416
Beemster Contest Club (PA)	9,036,628
Sarejevo Contest Group (T9)	8,230,541
R.C. Rosario (LU)	7,890,721
Lowland Crazy Contesters (PA)	7,625,012
Israel ARC	7,318,951
Bloemfontein ARC (ZS)	6,966,948
Moscow Contest Club	6,651,145
Danish DX Club	6,531,941
Czech Contest Club	6,413,058
Contest Club Cambria (GW)	6,094,670
Kharkov ARC (UR)	5,978,941
YO DX Club	4,911,628
LU Contest Group	4,726,530
Belarus Contest Club	4,640,816
Central Siberian DX Club	4,357,447
Sky Contest Club (YU)	4,341,159
Aztec Contest Revolution (XE)	4,250,710
Kentucky Contest Group	3,669,223
Temirtau Contest Club (UN)	3,009,040
Guara DX Group (PY7)	2,909,965
Pizza & Pasta Contest Club(I)	2,827,350
Vojvodina Contest Club (YU7)	2,547,795
JT1KAA Club	2,491,118
Z30M Club	2,282,173
Amsterdam DX Club (PA)	2,249,679
Dozen dashes Contest Club (OM)	2,138,367
Yamal (UA9K)	2,052,824
Grupo Argentino CW	1,983,725
ZS6DDX Club	1,982,539
SP Contest Club	1,936,658
Fox Contest Club (YU)	1,900,223
KRYDXC (UA10)	1,866,231
Uirapuru DX Club (PY8)	1,804,386
Radio Assn. Western Greece	1,632,432
UDXC (UR)	1,620,009
SDXG (DL)	1,551,882
Serpukhov RC (UA3)	1,471,312
ARC of Saipan	1,425,199
Banat DX Group (YU7)	1,292,176
Ferrara DX Team (I)	1,088,606
Northern Greece Contest Team	949,659
Pordenone Gangsters (I)	923,426
YO5KAD Club	900,220
FARS (UA0C)	896,869
North Patagonia DX Group (LU)	873,279
F6KAV Club	843,819
Belokranjec Club (S5)	835,940
Yaroslavl Club (UA3M)	801,030
Pushkino (UA3)	798,003
HS DX Assn.	738,997
KKKK (UA6A)	696,562
TA1KB Club	523,104
SVARK(SM)	499,640
Kaluga Radio Club (RA3X)	494,904
OM8A Club	404,412
Cocosolo Sibichi Club	361,784
Paper Dxers	345,668
SP9PKZ Club	333,510
Chofu Radio Amateur Club (JA)	316,493
Novio Magum Contest Group (PA)	301,630
SK6AW Club	299,480
South Jersey Radio Assn.	298,894
SP OTC	293,629
Vladimir Radio Club (UA3)	253,112
Lynx DX Group (EA)	246,306
AR Chita Club (UA0U)	245,046
KVANT	240,642
KRK Angermoende E.V.	211,330
LA DX Group	175,828
KCM (JA)	153,853
Tallinn RC (ES)	134,922
G-QRP Club	129,535
R.C. Cordoba (LU)	87,141
Bangor & District ARS (GI)	67,586



In the 2003 CQWW CW, Filipe, CT1ILT, was the op at CQ0T, Single Op, All Band, Low Power, #1 Portugal, #7 World.



LT1F op Lucas, LU1FAM, Single Op, 28 MHz, High Power, made a good showing in the contest from Argentina.

Taking the MS crown was P3A. Second place was taken by A61AJ, and third was the high European score of EA6IB. Team EA6IB does a great job every year. The number one U.S. score came from Tom's team at K1KI. Next was perennial top scorer N3RS, followed by K1IR. The number two team in Europe was the OM7M super station, followed by TM2Y.

The continental winners were: North America K1KI, Africa CT3/OL8R, Asia P3A, Japan JA7YAA, Europe EA6IB, Oceania AH2R, and South America LU7DW.

### Multi-Two

This new category continues to grow in popularity. It provides for most of the fun of MM but with a reasonable setup. Two stations going all the time is still tough to man if you want to try for the top. This time the top spot went to the RRDXA team at CT9L. What a fine job. Second place went to the contest consortium located on Curacao, PJ2T. Third place in the world went to the DXpedition of TS7N. They sure made it into a lot of logs! The top North American station was VE3EJ. In the U.S., Paul's team at K4JA put rural Virginia on the map for the #1 slot. Second place went to N3AD of the Frankford Radio Club, while third place went to Jack's team at N4RV. In Europe the top score came from the RU1A powerhouse. They are loud and they can hear. Second place went to 9A7A and third place to DL0CS.

The continental winners were: North America VE3EJ, Africa CT9L, Asia UP5G, Japan JA1ZLO, Europe RU1A, Oceania T32WW, and South America PJ2T.

### Multi-Multi

Take a lot of work, a lot of planning, and people coming from all corners of the world and you have a multi-multi team. The Galapagos Isl. and zone 10 were once again put on the map by HC8N. This team is constantly changing, with new ops getting a chance to see what it is like at the other end of the pile-up. The Voodoo gang also continues their mission to work from all west African countries! This time they had a wonderful showing to take second place as 5U5Z. Third place was way down in southern Brazil at the hilltop location of PT5A.

The fight to Multi-Multi supremacy in the U.S. has grown into a friendly battle. Once again the KC1XX team took top honors. Tim's team in western Pennsylvania took K3LR to second

place, just ahead of W3LPL. The top scorer west of Pennsylvania was the K9NS team.

The top score in Europe came from the special station ZA1A; what a nice surprise to find them very active on all bands. Second place went to 9A1A operating from their newly completed station on a mountain in northern Croatia. Finally, the gang at OH0Z put the Aland Is. multiplier into a lot of logs.

High on a mountaintop in central Shikoku, JA5BJC edged out their Nara competition, JA3YBK. In addition, everyone should give a big thanks to ZL6QH, whose efforts are really appreciated. If you worked zone 32 on all bands, it probably was them.

The continental winners were: North America KC1XX, Africa 5U5Z, Asia RZ9WXX, Japan JA5BJC, Europe ZA1A, Oceania ZL6QH, and South America HC8N.

### Clubs

The club competition continues to grow. More clubs than ever have now joined in the fun. If you have not already done so, find out about your local contest club and join. You will have a great time. Your club participation can act as a window to worldwide contesting. Joining a club can get you caught up in going on a DXpedition. Just think what fun that would be!

This time the world's top club was the Yankee Clipper Contest Club, winning by 80-million+ points, with a total of over 460-million points. Second place went to the Frankford Radio Club with 377M points, followed by the Potomac Valley Radio Club. The three East Coast mega-clubs had a total of over 1-billion points!

The winner of the top DX club trophy was the Rhein-Ruhr DX Association with a total of 265M points, followed by the friendly rival Bavarian Contest Club with 235M points and Contest Club Finland with 101M points. There was great organization and activity from the world's contest clubs. Everyone appreciates their efforts.

### Team Contesting

Get five contesters together from anywhere in the world, form a team, and get on the air. That's all you have to do for Team Contesting. Why not try it? If you belong to a club, try inter-club competition. You might be surprised at how much fun you will have. This time team contesting was well represented by 24 teams (teams reflect only those who submitted scores):

1. Neiger's Tigers #1: N6TJ (ZD8Z), CN2RJ (W7EJ), CT1BOH (P40E), KH6ND (KH7X), D4B (4L5A)—56,282,996 points.

2. YCCC CW Alpha: NN1N, W1KM, K1XM (VP9I), W1WEF, KT1V—26,046,223.

3. Wons and Toos: K1DG, K1TO, N2NT (VY2ZM), N2IC (N7RT)—24,466,152.

4. Royal Bavarian Contest Team: DF2SA (7X2ARA), DJ5MW, DK3GI, DL1IAO, DL6FBL—21,676,410.

5. For Fives: N5TJ (KP3Z), K5GN, K5ZD—21,563,679.

6. CCF Team Sauna: OH1NOA (CT8T), OH1MDR (OH1F), OH4RH, OH6NIO, OH6OS—19,501,562.

7. YCCC CW Golf: K1NQ, KE1FO, K1IG, KT1V—16,454,672.

8. YCCC CW Bravo: WC1M, W2WB, N1DG, K5MA, N1UR—15,231,684.

9. WWYC - Lids United: CQ0T, TK9A, OZ1AA, OT3R, DX0M—14,941,988.

10. Have CW, Will Contest: K1NT, N5KA, VE1OP, ZS1EL, ZS4TX—11,452,035.

11. Cinco de Guyo's: K5NA, K5PI (W5KFT), N5AW, N3BB/5, K5ID/8—11,006,518.

12. WWYC - League of Notorious Lids: YT7AW, ON5ZO, N4YDU, K3OO—10,642,569.

13. YCCC CW Hotel: NB1B (VE1JF), W1JQ, WA1S—9,833,705.

14. YCCC CW Charlie: KS1J, W1TO, K1HT, W1CSM, W1EQ—8,416,093.

15. YCCC CW Delta: W1TE, W1RZF, WA1Z, K1RV, W1EBI—6,648,757.

16. YCCC CW Echo: K1LD, K1EP, W1HR, N3KCJ, KG1E—4,712,287.

17. CCF Team Terva: OH2MM (EA8EA), OH1WZ (OH2BH), OH3WW, OH6CS (OH6AC)—3,746,384.

18. CCF Team Sibelius: EA8/OH4NL, OH6YF (OH6Y)—2,832,114.

19. CCF Team Sis: OH1MM, OH2LU, OH5DX, OH6KXL—2,346,003.

20. Central AZ DX Assn. Contesters: K8IA, K7XZ, W8AEF—2,250,500.

21. WWYC - Splatters: LY7Z, M4K, LT1F—2,136,202.

22. WWYC - Last Minute: LZ4UU, LY9Y—1,762,955.

23. YCCC CW Foxtrot: K1JN, K1MZ, KY1B, W6FC/1, W1DAD—1,451,849.

24. WWYC - Mushroom: OE8CIQ, K8GU, JF3EBO—607,018.

### Special Mention

"I escaped into Africa just to enjoy the feeling to be chased!"—9G5ZZ (DL1CW). "The CQ WW CW is the best CW contest by far. More DXpeditions, more great operators, more super-stations, and much more to work! Was





# 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
P40E	343/15/48	705/25/83	1683/30/100	1419/33/102	1794/33/111	1884/33/102
D4B	236/22/73	324/27/74	930/34/89	1532/36/107	1604/35/108	2267/35/117
KP3Z	236/16/47	441/22/80	1502/32/96	1332/37/105	1271/34/107	1893/33/101
A45XR	137/11/43	351/21/70	1354/28/89	1276/33/104	1382/33/108	1386/35/106
P3F	126/14/47	391/24/77	1412/33/110	1373/32/94	1093/28/98	1115/30/91
VE2IM	173/10/23	774/16/70	1147/28/100	1347/32/105	1580/32/111	1438/25/96
ZDBZ	27/9/26	171/21/55	445/27/75	1041/32/88	1880/36/106	2181/34/113
VY2ZM	27/11/75/4	1082/23/74	1469/27/83	1083/30/90	1229/24/92	1042/26/80
KH7X	71/11/12	441/24/33	1072/34/81	680/31/82	1790/35/81	1202/35/58
CT8T	61/9/45	650/18/70	1141/26/84	1406/32/90	1236/27/99	1475/30/90

## USA TOP SINGLE OPERATOR ALL BAND

Station	160	80	40	20	15	10
NT1Y	41/11/31	526/16/76	1462/31/99	635/30/100	816/28/100	610/26/87
K1DG	34/9/22	320/18/78	1137/32/93	614/30/101	933/29/94	787/29/95
K3CR	27/10/20	261/22/72	930/31/99	549/33/101	832/31/95	789/28/96
W1KM	35/12/25	617/21/77	766/28/89	650/33/89	785/25/85	596/27/90
K5ZD/1	22/8/18	288/16/69	723/30/93	747/34/109	751/29/101	622/29/95
KT1V	43/10/28	354/23/71	963/31/88	742/29/94	700/25/92	716/24/83
N2LT	20/9/16	213/18/64	819/29/92	625/32/101	937/30/97	713/26/88
K3ZO	27/8/16	259/23/82	986/34/108	493/28/88	801/28/91	568/27/88
W1WEF	26/8/17	436/17/67	672/27/96	705/34/108	624/30/97	618/29/100
W9RE	46/12/24	183/18/60	553/29/83	553/34/91	883/32/98	765/29/86

## WORLD MULTI-OPERATOR SINGLE TRANSMITTER

P3A	367/17/72	937/30/99	1939/36/125	1704/37/131	1675/37/125	1701/34/120
A61AJ	193/14/59	495/30/97	2047/38/128	1607/39/138	1415/38/130	1442/36/130
EA6IB	191/13/63	623/30/101	1648/35/125	1127/37/134	1406/37/133	1553/37/128
K1K1	38/12/35	498/21/89	1412/36/120	679/39/134	963/36/134	943/34/122
RT9W	125/10/49	649/25/89	885/34/119	1214/36/133	2737/34/126	868/34/116
OM7M	102/19/77	764/31/109	1574/38/132	849/36/125	1148/38/136	689/37/130

## USA MULTI-OPERATOR SINGLE TRANSMITTER

K1K1	38/12/35	498/21/89	1412/36/120	679/39/134	963/36/134	943/34/122
N3RS	30/14/28	311/26/87	1420/39/126	674/38/134	1043/35/131	605/32/120
K11R	25/9/24	453/22/87	1141/34/117	856/38/137	1014/36/123	604/30/111
K8AZ	27/13/26	211/25/83	987/36/120	887/39/133	707/37/123	787/33/115
W1US	36/10/27	392/26/89	927/31/116	758/36/127	709/33/117	503/28/99
NØFW	18/8/17	84/18/71	454/34/111	364/35/118	519/37/126	557/32/106

## WORLD MULTI-OPERATOR TWO TRANSMITTER

CT9L	261/13/59	1074/22/93	2177/35/119	2150/36/129	2822/36/126	2458/33/110
PJ2T	273/16/34	720/27/88	2928/37/123	2398/39/138	2754/35/119	2010/33/113
TS9N	519/16/65	1517/23/88	2124/31/105	1808/36/127	2070/34/117	1593/33/108
RU1A	303/20/73	1046/33/118	1723/39/138	2029/38/140	1904/39/139	1309/40/114
VE3EJ	211/13/28	729/26/90	1981/37/128	1148/37/131	1992/37/128	1396/34/117
K4JA	49/13/33	618/23/89	1607/38/134	1225/38/135	1586/37/130	1003/34/110

## USA MULTI-OPERATOR TWO TRANSMITTER

K4JA	49/13/33	618/23/89	1607/38/134	1225/38/135	1586/37/130	1003/34/110
N3AD	46/11/22	391/21/81	1121/35/113	1252/39/132	1296/34/119	854/30/108
N4RV	35/10/24	257/20/79	992/33/108	742/36/124	1390/37/129	770/31/112
NØNI	33/12/22	150/25/63	922/36/122	594/37/124	1152/38/123	863/32/114
N4WWW	33/12/25	203/19/79	851/29/110	615/38/125	898/36/129	932/33/116
KØTV	26/8/16	503/19/79	829/33/111	657/34/118	1031/28/115	682/24/103

## WORLD MULTI-OPERATOR MULTI-TRANSMITTER

HC8N	560/23/58	1536/33/109	3325/39/132	3381/40/149	3944/39/147	3599/38/141
SU5Z	174/14/55	682/25/80	2575/34/110	4500/37/127	4687/39/134	3691/33/115
PT5A	143/16/44	324/25/83	1055/36/124	2744/39/144	3645/40/149	3196/40/144
KC1XX	198/18/57	1249/31/106	2294/39/136	2093/39/146	2176/38/139	1539/34/130
ZA1A	1265/21/81	2598/28/98	3670/35/124	2525/35/126	2418/35/124	1795/33/109
9A1A	995/17/76	1893/36/115	3129/39/138	2399/38/140	2111/36/135	1722/38/128

## USA MULTI-OPERATOR MULTI-TRANSMITTER

KC1XX	198/18/57	1249/31/106	2294/39/136	2093/39/146	2176/38/139	1539/34/130
K3LR	199/18/37	673/30/103	2000/40/140	1982/40/150	1940/39/147	1422/35/130
W3LPL	183/17/42	809/27/99	1980/40/138	1774/39/144	2024/38/142	1594/34/127
K9NS	184/20/45	453/29/94	1530/37/128	1800/39/140	1995/37/139	1725/38/130
K7GM/4	34/10/23	609/23/83	1962/33/117	1566/37/134	1791/35/129	1251/32/119
K1TTT	123/15/36	740/24/9	1012/35/122	1810/38/139	1488/35/133	1207/32/120

World: 7 EA8EA (OH2MM), L21 6Y9A (WA6O), L3.5 6Y8A, Q1.8 6YØA (K2KW), A14 SO2R, A7 4U1ITU (OM3CG), A3.5 9A5Y (9A3NM), M2 CT9L.

USA: L7 W1MU, L3.5 N2TA (NP3D).

North America: All KP3Z (N5TJ), 14 ZF2AM (W5ASP), LA 8P5A (W2SC), L21 6Y9A (WA6O), L3.5 6Y8A, Q1.8 6YØA (K2KW), AA K11G, M2 VE3EJ.

Africa: 14 D44TD (IK2NCJ), 7 EA8EA (OH2MM), 1.8 EA8EW (OH1MA), LA CT9M (KL2A), L14 9G5ZZ (DL1CW), Q21 EA8BYM, A14 EA8NQ, M2 CT9L.

Asia: All A45XR, Q14 UN7CN, AA C4M (RW3QC), A14 4L8A, A3.5 RMØA (UAØANW).

Japan: M2 JA1ZLO.

Europe: All CT8T (OH1NOA), LA CQØT (CT1ILT), L14 CU2F (SM4DHF), A14 SO2R, A7 4U1ITU (OM3CG), A3.5 9A5Y (9A3NM), M2 RU1A.

Oceania: All KH7X (KH6ND), A7 VK1AA/4.

South America: All P40E (CT1BOH), L21 CW4A (CX5AO), A28 LU4DX (LU5DX), A21 PY3CQ, M2 PJ2T.

## Comments

The Multi-Two category is growing. It probably is the most fun you can have with two rigs. Check out this new category in the rules. It uses band-changes/hour instead of a time rule.

We would like to thank the contest community for sending electronic logs in Cabrillo format. It takes a lot of time to create the results you see on these pages. By your sending in a Cabrillo log, many, many Contest Committee man-hours are saved, and as a very important bonus, the results are more accurate.

Please use the Cabrillo format when you submit your 2004 CQ WW log. It is required for electronic logs. All the necessary data to enter your electronic log is in the header summary. It can easily be stripped off and organized. All the contest logging programs create a Cabrillo log for you.

All you have to do is submit your log file to either <ssb@cqww.com> or <cw@cqww.com> and we will take care of the rest. No matter how small your log is, please send it in, because it will help make the world database more accurate.

This year we began looking at ISP associated with packet spotting. It was surprising to find calls of silent keys, ops at a multi station, even some non-contesters who never use packet in a contest used to covertly spot a station. In the future we will be looking into this problem in more detail. You are not allowed to self-spot in the CQ WW contests.

The skill of testers is improving with every year. The percentage of miscopied calls is declining. This is good news, and it is very encouraging to see such improvement. You can retrieve your UBN report at the <cqww.com> website.

## Thanks

As you saw in the opening paragraph, this year we received a record number of logs. Thank you for taking the time to submit your log. Once we receive it, it is organized and reviewed by a dedicated group of top testers. We would like to acknowledge their help.

Once you send your log and summary to either <ssb@cqww.com> or <cw@cqww.com>, it is processed, decoded, and massaged by Larry, N6TW. The few logs that are formatted incorrectly are handled by N5KO, JE1CKA, I2UIY, N5NJ, F6BEE, and K1AR. Dick, N6AA, makes the call database as accurate as is humanly possible. The CQ WW continues to be the state-of-the-art in score analysis. The log reviewers are K1DG, N3ED, K6NA, N6ZZ, CT1BOH, VE3EJ, N9RV, N2NC, K3WW, N5TJ, K3ZO, KR2Q, and K3LR. In addition to log checking, Phil, N6ZZ, serves as a sanity check at each stage of the creation of the master database. John, VE3EJ, helped to proofread the final results. John, N2NC, updated the all-time records.

Each year I rely on the sage advice of our special advisors: K3ZO, N2AA, N6AA, N8BJQ, W3ZZ, G3SXW, S50A, KR2Q, and N5KO. The CQ WW uses the software developed by Tree, N6TR. The DX advisors

### EUROPE TOP SINGLE OPERATOR ALL BAND

Station	160	80	40	20	15	10
CT8T	61/9/45	650/18/70	1141/26/84	1406/32/90	1236/27/99	1475/30/90
OK1RF	134/10/48	723/27/89	1087/35/108	558/31/90	1009/31/102	739/33/91
TM6X	142/11/53	550/18/67	883/29/83	683/25/86	961/28/89	868/29/82
TK9A	161/5/44	757/17/69	765/19/73	1167/26/90	831/28/89	1289/30/84
YT1AD	72/6/36	539/24/69	1177/37/96	763/30/86	781/32/94	636/34/92
MW5A	60/5/40	419/17/64	1072/24/82	874/26/82	952/27/81	668/27/72
OH1F	157/17/42	363/18/65	520/29/84	964/28/92	1022/30/93	544/31/90
G3TXF	203/11/49	671/22/78	525/21/68	730/31/97	754/26/79	643/28/88
S57DX	147/7/42	704/25/79	1111/33/91	653/32/92	653/32/90	328/32/77
DJ5MW	157/17/44	607/18/73	543/26/87	527/24/89	1015/31/95	643/34/93

### EUROPE MULTI-OPERATOR SINGLE TRANSMITTER

EA6IB	191/13/63	623/30/101	1648/35/125	1127/37/134	1406/37/133	1553/37/128
OM7M	102/19/77	764/31/109	1574/38/132	849/36/125	1148/38/136	689/37/130
TM2Y	264/12/61	437/26/95	1176/37/123	1175/38/131	1075/37/128	985/36/119
IR4X	117/11/64	163/26/97	1432/37/124	836/38/133	1106/39/142	1152/38/118
DJ4AX	155/15/67	900/29/102	1329/38/129	705/35/123	880/37/129	806/36/121
OK5W	104/12/64	569/29/99	1403/38/131	953/38/131	1013/38/130	754/37/117

### EUROPE MULTI-OPERATOR TWO TRANSMITTER

RU1A	303/20/73	1046/33/118	1723/39/138	2029/38/140	1904/39/139	1309/40/141
9A7A	560/10/62	1363/27/98	1728/39/133	1171/37/131	1341/36/129	1686/38/126
DL0CS	263/16/69	921/30/104	1229/37/127	1285/38/125	1049/39/127	826/36/115
HG6N	519/14/64	988/26/92	1238/39/126	890/36/120	1370/36/124	1004/35/118
DJ5IW	285/10/57	983/25/92	1434/37/120	968/36/115	1045/36/123	985/38/115
OT3L	319/10/53	1066/27/94	1835/35/125	1108/33/110	1026/36/114	722/31/102

### EUROPE MULTI-OPERATOR MULTI-TRANSMITTER

ZA1A	1265/21/81	2598/28/98	3670/35/124	2525/35/126	2418/35/124	1795/33/109
9A1A	995/17/76	1893/36/115	3129/39/138	2399/38/140	2111/36/135	1722/38/128
OH0Z	1127/16/69	1841/35/114	2523/39/136	3115/39/144	1936/38/135	1367/40/135
DF0HQ	719/13/69	1735/33/111	3030/39/141	2216/38/139	1841/37/140	1443/38/132
RW2F	1014/20/79	1903/33/115	2311/38/142	2239/37/134	1757/38/138	1148/38/133
GM5A	863/19/77	1488/28/100	2248/36/122	2251/37/129	1797/36/128	1196/32/115

are CT1BOH, DL6RAI, EA3DU, F6BEE, G3SXW, RA3AUU, OK2FD, IZUIY, JE1CKA, OH2KI, OH2MM, PY5EG, S50A, UA9BA, E21EIC, VA7RR, and VE3EJ.

Congratulations to all the winners and see you in this year's contest!  
73, Bob, K3EST

### DX QRM

From OC-235, Blue Waters Resort on Samal Island. . . . **4D71/N0NM**. It was a happy moment to participate in the contest for the first ever time. Marginal success with low power, dipole, and dead band. . . . **4S7NI**. Tough to hold a frequency (15m) using just a low vertical, but enjoyed the contest. Nice to bag VK9CJ as my first QSO! . . . **5B4AHJ**. 5N0W is special contest station located in Czech embassy in Nigeria, Abuja. 100W, down to 15W depending on power shortage in Nigeria. . . . **5N0W**. Great fun as usual. No packet this year, which hampered our score and was a shame since we made a new QSO record for the group this year. . . . **5USZ**. Had very fun during the contest. I chose single op 7 MHz because I wanted to test my too stacked 3-el Yagis. I managed to work nearly 600 North American stations and this is not a common everyday practice over here. Thanks to all of you guys for calling in. . . . **7S2E**. Many thanks to the Amateurs Radio Algériens, ARA, for their good will and great help, letting me operate their club station 7X2ARA in downtown Algiers City. It was big fun being the only 7X station on the band! . . . **7X2ARA**. I was using KX1, the newest Elecraft transceiver, with 4W output power. Propagation on 40m was very good, and this little rig performed beautifully. . . . **9A3RR**. I escaped into Africa just to enjoy the feeling to be chased! . . . **9G5ZZ**. Thanks to Dr. Ken, 9M2KN for help with a special call sign in West Malaysia. . . . **9MAJB**. It is first time use B4RF (contest call sign) in CQWW contest. Conditions were very good in this contest weekend. Great opening to NA. Thank you very much those who QSO with me. . . . **B4RF**. This is my first time CQWW from Taiwan. Due to heavy noise from industrial plants, it was tough for contesting. . . . **BW2/JH0KHR**. Many thanks to my old school (5B4ES) for hosting me yet again, and to 5B4XF for picking me up at 2:00 AM on Friday from the airport. Scariest moment was losing power 15 minutes before start of contest! . . . **C4W**.

Was QRV with a 25-year-old Butternut, from a friend for our new home. Hope to bring up my antennas next spring. But unbelievable what you can work with small antennas! . . . **DF1HF**. First CQWW CW contest for me! Great experience and a real great fun with N1MM logger! Enjoyed it very much and thanks to everybody who had a QSO with me. . . . **DH5HV**. The M2 idea is very good for oldies like us. . . . **DL0KF**. This was my 340th contest and the 19th CQWW DX contest with my best result. . . . **DL3KWR**. Concentrate only on the Top band. Worked the first time with a helium balloon, but only 10 hours. Performance was great and had 2-3 S-units more. 165 ft. high triple leg for 160m was a big antennal . . . **DL7CX**. Conditions on 10m very nice at the right time for the CQWW. I had a lot of fun. My first time in the CQWW. My thanks to the U.S. fellows for points in my little pile-up. . . . **DL7NS**. DP1POL is located at Neumayer Station, a German polar

### TOP SCORES IN VERY ACTIVE ZONES

<b>ZONE 3</b>	K1DG .....6,407,730	HG8R .....3,621,906
N7RT .....3,923,724	K3CR .....5,999,752	ES1A .....3,473,331
K7NV .....1,797,873	*VP9I .....5,854,420	S53O .....3,231,522
W2VJN/7 .....1,682,200	W1KM .....5,758,782	
K6NA .....1,676,741	K5ZD/1 .....5,665,749	<b>ZONE 16</b>
*N7NG .....1,361,710	KT1V .....5,616,416	RW1ZA .....3,340,653
WA7LT .....1,308,080	N2LT .....5,585,356	*UA4FER .....2,487,706
*K8JA/7 .....1,208,765		*UR3HC .....2,145,027
*W6PH .....1,193,136		UY5ZZ .....2,121,852
<b>ZONE 14</b>		RA3TT .....1,833,120
N7CW/6 .....1,145,898	CT8T .....7,613,600	RW3GU .....1,725,552
K7ZA .....1,045,262	TM6X .....5,295,600	UA1QV .....1,631,154
W6UM .....821,340	*CQ0T .....5,174,184	RZ4FA .....1,487,628
	MW5A .....4,790,079	UY0ZG .....1,235,838
	G3TXF .....4,502,342	*UA1OMZ .....1,235,224
<b>ZONE 4</b>	DJ5MW .....4,314,708	
VE3AT .....5,572,200	*MU/	
W9RE .....4,949,780	DL2OBF .....3,905,720	<b>ZONE 25</b>
K5GN .....4,457,700	GM4YXI .....3,681,870	JH5FXP .....4,617,976
VE3NE .....4,422,488	DL3YBM .....3,579,232	JA1ELX .....3,042,568
W5KFT .....3,189,931	OZ1LO .....3,423,168	JA6GCE .....2,997,134
VE3EY .....3,045,600		*JH4UYB .....2,606,875
*K8CC .....3,019,803		JE1CKA .....2,076,360
VA3UA .....2,819,664	<b>ZONE 15</b>	*J11RXQ .....1,335,152
K0SR .....2,620,431	OK1RF .....6,547,595	7M1MCT .....1,287,678
N5BB/5 .....2,264,020	TK9A .....5,253,822	JK1OPL .....1,169,920
	YT1AD .....5,171,952	JA7IC .....1,161,043
	OH1F .....4,596,123	*JF3GKE .....1,107,488
<b>ZONE 5</b>	S57DX .....4,370,912	
VY2ZM .....9,763,140	HA8A .....4,152,410	
VY2TT .....6,843,837	ES5TV .....4,073,073	
NT1Y/4 .....6,797,675		*Low Power

research base in Antarctica. The contest was held on the same weekend that our supply vessel, the German icebreaker "Polarstern," arrived at the station, so everyone was extremely busy unloading the ship, and there was only very limited time for operating the radio. This contest entry was probably my last one signing DP1POL, as I will return to Germany in February 2004 after 14 months of working as a radio operator in Antarctica. . . . **DP1POL**. Who says CW is dying! . . . **EI7JK**. Thanks for nice contest! . . . **ES1TM**. Only a parttime effort. Nice to have 10m open! This is the first time I have entered this contest. Many thanks to all. . . . **G3GLL**.

CQWW CW is the best CW contest by far. More DXpeditions, more great operators, more super-stations, and much more to work! CQWW CW did its usual magic with the sunspots too! . . . **G3TXF**. Everybody said I must be mad to do 80m QRP! I could see their point, but I was astounded by what I could work with just 5 watts (homebrew). . . . **G4EDG**. At last! A contest where everything worked (most of the time)! Murphy must have been on vacation. . . . **G6PZ**. Highlight: ZD8Z calling me close to the end! Lowlight: Falling asleep with my finger on the F1 key; also getting up at 0500 Monday to fly to SM5 for work! Great fun. . . . **GU4YOX**. I slept both nights for a couple (well, okay, four or five) hours, resulting in missing the greylines on 160m both days! Conditions were okay, but 10m was far better on Saturday with a weak aurora affecting Sunday. N1MM software rocks! . . . **GW0EL**. With the small, rather inefficient mobile antennas I used, I should be ranked among QRP participants. Pity there is no "small antenna" sub-category. . . . **HA5X**. I had a lot of fun and was very happy to overcome world record. Thanks to all who called me! And also thanks to Mauro, IN3QBR, for the power generator. . . . **IH9P**. After more than 15 years in CQWW CW contest we have finally broken the 10M points barrier. Propagation over our best expectations. . . . **IR4X**. Operated from rental shack Akagi in Gunma prefecture owned by JE1IKA. The shack is located on a mountain and I really enjoyed a very good opening toward NA and EU from there. . . . **JA1BPA**. Thanks to the calm geomagnetic conditions, the entire contest was enjoyable, although the propagation of higher bands was much weaker than last year. I appreciate the operators who dealt with my weak signal and listened to the repetition of my very long call-sign presumably coming just above or even under the noise. . . . **JJ1BDX/3**.

First contest with new call. Antenna quirky but conditions were good. Holiday season kept me away more than I could have been. . . . **KH600**. First CQWW CW single op all band in 20 years for a new Oceania record! Aloha. . . . **KH7X (KH6ND op)**. Another fun contest from NP4Z's QTH, although it didn't begin that way as no commercial power the first 13 hours. Ran 100W on a generator. Congrats to Jose on a fantastic QSO total. . . . **KP3Z**. Very happy for having Bruce, KD6WW, sharing a contest with me from home. We enter in "have fun category" and we had it indeed. Thanks to LW8EXF for her support. . . . **LU7DW**. Great contest. Me and my father made our best score. I think we will be first in the Multi-Single category (300W!). . . . **LZ1ABC**. Thanks to VE1ZZ for having good ears. . . . **M0AJT**. Wow! Conditions on the low bands were really great. I managed to work several new countries on Top band. Computer problems as usual didn't help, but a cool contest. I will be entering next year. . . . **M5FUN**. My first CQWW entry and a major effort for a 77 year old. Many thanks for assistance from many stations. . . . **MM0WPM**. Guernsey is much too beautiful to go there only for contesting. Therefore I am glad that I had one and a half days this time to explore a bit of the island. Thanks to the Gars and especially to Phil Cooper, GU0SUP! You have once again been great hosts! . . . **MU/DL2OBF**. I was surprised by the long path openings and the fact that I had no direct opening to VK's and ZL's. However, I was able to work a few ZL's by long path. . . . **OA4SS**. Estimated that running barefoot I could make around 600 QSOs single band 80m. So I thought I'd give it a try. Ended up with almost twice that QSO number. Astonished to see what is possible running only 100 watts into a simple coil-loaded dipole. TNX to everybody who called me. . . . **OE5CWL**.

Turning the superb OH0Z SOAB station into a full-scale Multi-Multi in a few days was a challenge but an exciting one. Ultimately the biggest surprise was the propagation, as we did not expect to get this close to our OH2U European Multi-Multi record this year any more. If there is one contest we'll enter every year it sure is CQWW CW. Thank you all! . . . **OH0Z**. Conditions were nice, better than 2001 or 2002! My best SOAB score ever! . . . **OH1F**. It was great fun! . . . **OH2BJ**. My age 69, my contest number 800. . . . **OK2ABU**. It is really very good contest, like Olympic Games. . . . **OL4W**. Overall conditions not too good, but first time 20 zones, great! And managed to get to #200 on Top band, wow! . .



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Wolff, DJ5JH, using the special call J43J, operated from the Peloponnese peninsula in southwestern Greece, Single Op, 14 MHz, Low Power.

ON4WW. Always a lot of fun. . . . ON6LO. Great fun with these excellent conditions! A lot of operating hours for the only five full-time operators. No good strategy yet for Multi-2 so we missed too many mults on 10/15/20. . . . OT3L. My first trip back to Aruba in 2-1/2 years. Great to see old friends again and lots of fun in contest. Unfortunately I slept too much (again!) and lost power for 3 hours—excuses, excuses! . . . P40R. Entered the contest with a new call, PA1V (ex-PA3ELD). It did a great job during the pile-ups in the contest. . . . PA1V. Just some words: fun, fun fun fun! . . . PA3BFH. Thanks to Waldir, PY2WC, for chance to use his good station. Next time we need improve the 10 meter antennas and 80 meters. . . . PQ2Q. This is our first activation in CQWW CW contest in Multi-2 category! It is very interesting! . . . RN9WWW. Superb conditions on 80m. Managed to work really cool DX such as HC8, JT, 5U, 6Y, etc., with only 100W. . . . S58J. Surprising good conditions. 10m open both days to west and south. 20 workable til end of contest, though aurora made signals flutter. Beat my last year's record by almost 100 QSOs with less active hours. This contest is real fun. . . . SM7BJW.

My great pleasure to Sergey (TA2ZF, M0SDX, UT5UDX) and his wife Lyuda for warm hospitality! . . . TA2ZF. After 15 years abroad, last call OD/F5SQM (my wife's call), I'm back from France. I missed you, CQWW CW contest! . . . TM4Q. First major contest from new retirement QTH after many years as G3MXJ. . . . TM6X. What great contest! What fun! Average skill of ops is getting better each year! Did I hear someone say CW is fading away? . . . UA9AYA. DXCC program on 80m for two days. It was beautiful! . . . UW5U. Murphy must have been on vacation; everything actually worked! . . . VE3BW. So this is low sunspots, is it? . . . VE3PN. Good conditions! What planet is this? . . . VE6EPK. You know it's time for a break when the voices in your head have loud arguments. . . . VO1AU. I have a good start on my "Worked All ZO's Award," having worked K6, K9, N2, W5, and my college buddy K3ZO in the contest. . . . VP9/K9CC. Thanks to Jeff, K1ZM, for the chance to operate from VY2. Fabulous station and conditions made for a fun weekend. . . . VY2ZM. My thanks to Ramon, XE1KK, for opening his home and station to me on such short notice. Mil gracias, amigo! . . . XE1NTT. My first CQWW DX contest. Amazing fun! . . . ZS1AN. My first try at the CQWW CW contest! . . . ZS4JAN. Great fun working stateside 10m in good form . . . ZS5RON.

**USA QRM**

This was supposed to be a bad sunspot year? . . . AA1K/3. Wow! What an amazing contest. It just doesn't get any better than this. . . . AK5X. Fantastic ops, great competition, outstanding conditions, and a much improved station all combined for a tremendous contest. After chasing a persistent line-noise problem with the power company for months, the noise disappeared just 24 hours after the end of the contest! . . . K1IR. My first ever CQ contest. Sixty countries with two simple wire antennas. I'll be back next year! . . . K1KAV. There are no meters like 10 meters

(when it is open). Tiny hobby-shop brass-tubing vertical on a tiny lot with 25 tiny radials equated to a lot of calls but also a lot of fun running low power. Long live CW, the great equalizer (?). Well, kinda. Thanks for another great contest. . . . K2RR/4. This year I decided to not call CQ at all, just hunt and peck! Still made DXCC! . . . K3ZX. As usual a wonderful contest thanks to CQ! Conditions were down this year, especially on the low bands. . . . K4XG. Looks like my last DX contest from this part of the country. It's been fun, but now it's time to go home! Texas here I come! . . . K5ID/8. Was just going to play around, but conditions were so good that I couldn't stop! . . . K5ZD/1. Nice to see the JA's back in force, resulting in some nice runs. . . . K7OX. Conditions here in the northern latitudes were fantastic, the best in many months. Had a ball. . . . K7RE/0. My first "The Contest" in the U.S. Truly enjoyed working the contest at Dave's (K8CC) fantastic station. . . . K8CC (K8B op.). It was nice to look at the propagation report and see the K-index at 1 during a contest! Probably the best conditions for a contest weekend this fall. . . . K8IR. CQWW CW is the king of all DX contests, by far! Need more zone 12 activity on CW. . . . KC1XX. Fired up 34-year-old Heathkit HW-100 after 8 years in storage. Used CQWW DX to check her out and get fist back in shape. Tough to compete with contest keyers with my 7 wpm, but still lots of fun. . . . KD4RM. Highlights were 9M4JB calling me; working JA2YBK on 40m; S9SS, HS1OVH, and VK2KM calling me while running on 20m on Sunday afternoon. Lowlights were my antenna mast rotating and damaging the rotor control cable. Had antenna pointed northeast for about 6 hours; managed to turn it north for the last couple of hours! . . . KE1FO. Was really surprised to have great condx without a solar flare! Wish now I had fixed the 80 meter antenna. My sig so weak that many ops came back to K1GC. That's me! . . . KJ9C. This is "The Contest." How could I have missed it last year? Never again! . . . KT1V. Our amp-to-Q rate was terrible as we blew four amplifiers within the first two hours of the contest. Fortunately this was enough time for Roto-Rooter to pump out the septic system and we could all finally go to the bathroom! . . . N0FW/8. My best CW performance ever in the CQWW, at age 76 after several decades of contesting! . . . N1AU. Antenna falling down after the first night. I had to climb up there 16 times. The wind was terrible. The weather was horrible. The tower was 45 feet high. I got sick and had lots of fun. . . . N2TA. First time in a M/S with only three ops. Had a ball and got plenty of rest as well. Thanks to Alan and John for a super effort. I hope next year we will go for M/2 again, perhaps with a full team. Thanks also to all the FB ops who worked us. . . . N3RS. Had fun on 80m single band but missed some juicy stuff—9M8, 9V1, TO4WWW—ugh. . . . N4CC. With the two big-time contest stations on opposite sides of me (W9RE and N9RV) both suffering hardware hexes, it stands to reason that some would rub off on the low-profile guy in the middle. Although things didn't go according to pre-contest plans, I think the results exceeded my expectations. A special tip of the hat to Mike, W9RE, for overcoming his problems to post his fine score, and kudos to my hero, Mel, KJ9C, who ran up 1.6 meg while having fun with his truly



Soyhan, TA2IJ, Single Op, 7 MHz, High Power from Asiatic Turkey.



DK3YD, the op at club station DK0MN, Single Op, All Band, High Power.

low-profile low-power black-hole station. . . . **N4TZ/9**. Happiness is working XQ and 9J on 10 meters before the packet pile arrives. . . . **N5RG**. This was a parttime effort at the K4VX super-station. Thanks to Lew and Terry for the hospitality and for letting me play with the big stuff! . . . **N9JF/0**. Interesting auroral on high bands and 40m long path condx for contest. Thanks to home ops and expeditions who provided rare mults to the multitude. . . . **W0ETT**. Amazing what one can do with 100 watts and a vertical antenna on 10 meters when the band is open. By far my favorite when it's up. Glad I worked the "rare" ones on Saturday before the DX chasers made pile-ups on Sunday. Thanks for all the Q's. . . . **W1END**. The highlights were many, but the best had to be late Sunday afternoon when I was looking for a spot to call CQ. Tuning down from 7.050 I found an open spot at 7.042. The contest was in its final hours and the only thing I was really disappointed about was that I had not worked TO4WW with my 100W. So just as I find an open spot at 7.042, and as I am about to hit the CQ function key, TO4WW calls CQ right there. How 'bout that?! . . . **W1MU**. Next year I will make to send everyone at home (including my dog) to a CQWW weekend—Disney perhaps. . . . **W2/KP3T**. First time to break a million in CW test! 100% S&P with Writelog. Writelog rocks! . . . **W3CF**. First CW contest in 40 years. Had a ball. It is 24 hours after the contest and I am still hearing CW in my head. . . . **W3PT**. Pretty decent conditions, so what's my excuse for the poor showing? Best I can come up with is that two weeks ago while in the process of lengthening my 80m dipole for the contest I fell off my roof and suffered a compression fracture of L1. Not recommended training for CQWW. I'll try to think up a better excuse for next year. . . . **W5ZL**. TU operators of the Europa DXpedition! . . . **W8PT/3**. Great participation as always; the king of contests! . . . **W9RE**. Thanks to/for: best DX ZL6QH, 8200 miles (1640 miles/watt); Japan, JA5BJC and JH4UYB (for being my only Asiatic Q's); new/inrequently heard DX (for me), 5U5Z, GZ7V, MW5A, T32WW; K/W stn ops who answered my calls for country/zone multipliers; KH7X (*mahalo* for connecting me back to my home state); letting me have "virtual visits" with 64 other countries. . . . **WB6BWZ/4**. WW = Wild Weekend! . . . **WO4O**. What happened to the big flare they forecasted? I had made plans to skip the contest but returned early from Lake Tahoe when I heard the bands were open! Some contest is better than no contest! . . . **WT6G**.

(Continued on page 104)

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Table with multiple columns and rows, containing alphanumeric codes and numerical values. The table is organized into sections for various countries and regions, including Denmark, Faroe Islands, Germany, EU, Finland, Greece, Hungary, and others. Each entry typically consists of a call sign, a frequency, and a signal strength or other numerical indicator.







W6OU	*	9,416	86	16	28	N3ZA	*	1,020,544	706	122	414	N9OQK	*	366,660	457	81	234	BELGIUM		4,805,560	3263	160	520	SV1ENG	A	GREECE	A	186,588	939	40	102	
IZ1DFI	*	7,003	114	8	39	N3KN	*	1,001,250	813	99	346	W90L	*	213,000	343	68	182	ON4UN	A		(OP: DL2CC)											
ES4MF	*	3,192	62	8	34	N3ED	*	678,084	684	110	357	KF9YR	*	171,684	268	71	180	ON5ZO	*	790,834	1353	85	264	HA0HW	A	HUNGARY	A	1,490,976	1780	118	383	
DL2WJ	*	2,450	48	9	16	W3IO	*	649,873	685	81	272	N9BOR	*	107,139	232	70	143	ON5ZC	*	373,451	723	72	227	HA5PT	*			1,072,467	1347	109	361	
JF9JOD	*	1,404	32	12	14	K3NM	*	574,816	474	118	388	AF9R	*	84,624	196	55	109	ON5ZD	*	121,275	555	31	74	HA1AG	*			140,835	313	78	152	
Q12BEC	*	2,036	44	18	18	KB3TS	*	509,614	493	94	315	K9TTR	*	46	100	46	21	ON4BBD	2B	149,330	643	34	103	HG5C	2B			385,287	1256	35	112	
GA4EDG	3.5	66,270	515	18	76	W3MM	*	473,165	457	118	357	W9IND	3.5	30,156	153	25	61	ON4ATW	3.5	181,478	1151	26	87	HG9X	14			455,911	1564	38	125	
OL4W	*	46,617	635	10	59	K3PT	*	269,554	359	81	205	K0KX	A	3,120,365	1740	160	499	BOSNIA-HERZEGOVINA						HA5A	3.5			148,482	1478	27	86	
DL6MHW	*	18,212	269	9	49	K3PD	*	258,164	349	87	206	KU1CW0	A	2,572,668	1711	146	435	T9SA	A	1,011,561	1595	101	346	HA5A	3.5			148,482	1478	27	86	
OH7FF	*	16,328	285	7	45	WA3QY3	*	220,869	332	67	186	AE9B0	*	1,331,200	1081	133	387	T99A3GZ	1.8	114,962	1175	18	76	HA5A	3.5			148,482	1478	27	86	
R43AXR	*	9,152	171	9	43	WA3KYV	*	200,406	329	67	196	NS1N0	*	874,740	710	129	349	LZ2BE	A	458,496	710	101	297	HA5A	3.5			148,482	1478	27	86	
OM4APD	*	2,706	101	5	28	W3VFT	*	167,900	342	67	178	K0UK	*	538,720	588	136	280	LZ1YY	*	48,195	181	48	87	HA5A	3.5			148,482	1478	27	86	
KR2Q	*	2,436	44	18	18	W3UTD	*	125,756	295	54	157	K0JC0	*	513,712	595	110	278	LZ1YY	*	48,195	181	48	87	HA5A	3.5			148,482	1478	27	86	
DL6JUA	*	1,116	24	7	4	K0J3V	*	90,354	162	67	155	K0IR	*	492,788	543	97	252	LZ1YY	*	48,195	181	48	87	HA5A	3.5			148,482	1478	27	86	
JM10ZP/O	*	285	16	7	8	W3OU	*	86,320	176	70	138	NO1M	*	482,760	483	113	292	LZ1YY	*	48,195	181	48	87	HA5A	3.5			148,482	1478	27	86	
6Y0A	1.8	35,952	448	13	29	W3LJ	*	67,200	148	52	123	N01J	*	440,860	514	79	256	LZ1YY	*	48,195	181	48	87	HA5A	3.5			148,482	1478	27	86	
SP4FG	*	9,635	243	5	36	WR3Y	*	38,824	225	51	133	KTOR	*	392,232	443	97	257	LZ1YY	*	48,195	181	48	87	HA5A	3.5			148,482	1478	27	86	
RZ4AA	*	3,026	89	5	29	W3EA	*	31,376	202	33	115	N0BU1	*	260,064	378	65	187	LZ1YY	*	48,195	181	48	87	HA5A	3.5			148,482	1478	27	86	
VE3MGY	*	2,560	190	4	24	AA3TL	*	16,836	126	34	58	K10F	*	233,478	366	93	234	LZ1YY	*	48,195	181	48	87	HA5A	3.5			148,482	1478	27	86	
GW0VSW	*	1,458	58	3	24	NZ3O	*	15,792	61	37	57	W0TT	*	230,762	359	91	270	LZ1YY	*	48,195	181	48	87	HA5A	3.5			148,482	1478	27	86	
VE3KZ	*	440	49	2	4	K5KG/4	A	3,657,400	2015	156	524	K00B	*	200,600	238	91	274	OK2FD	A	3,109,848	2073	170	579	HA5A	3.5			148,482	1478	27	86	
K01DDV	*	312	24	3	10	W4MYA	*	2,802,800	1601	156	508	W0VD	*	168,942	308	82	150	OK2JZ	*	481,510	847	91	267	HA5A	3.5			148,482	1478	27	86	
G4CWD	*	306	29	3	15	K3KO/4	A	1,981,776	1134	424	494	N0HJZ	*	157,550	229	81	193	OK1DXW	*	182,413	379	71	182	HA5A	3.5			148,482	1478	27	86	
N2AA	*	84	8	3	3	K1PT/4	A	1,935,738	1304	135	434	K0BX	*	126,600	242	53	147	OK1KT	2B	89,748	319	37	77	HA5A	3.5			148,482	1478	27	86	
						(OP: KR2O)		1,606,928	1115	123	413	AC10W	*	82,270	187	65	125	OK1MD	2B	332,486	991	36	118	HA5A	3.5			148,482	1478	27	86	
								1,288,876	917	125	417	K00LT	*	70,135	182	56	113	OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								1,022,417	840	117	334	W0AMT	*	52,650	150	55	95	OK1DG	7	379,134	1314	36	117	HA5A	3.5			148,482	1478	27	86	
								1,005,242	980	102	311	K4HJ0	*	49,319	127	53	96	OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								803,815	678	112	319	W0RK	*	43,440	129	39	81	OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								633,465	776	86	229	AA0BA	*	9,315	50	30	39	OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								486,420	457	103	299	KV0Q	7	249,920	639	36	124	OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								334,803	453	84	237							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								306,719	405	78	223							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								270,692	439	73	163							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								209,475	311	96	189							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								191,436	346	87	214							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								176,715	318	65	166							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								141,330	277	54	166							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								126,550	236	93	188							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								104,696	268	56	128							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								91,590	165	69	146							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								32,130	98	37	89							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								16,116	82	22	57							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								6,084	47	31	47							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								5,445	78	36	63							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								326,120	850	33	122							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								271,035	712	30	129							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								562,870	1295	37	133							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								2,310,384	1179	184	578							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								1,145,430	969	135	360							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								700,756	643	101	305							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								474,580	502	118	339							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								425,785	498	102	259							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								400,488	472	99	229							OK2AP	*	45,360	234	28	80	HA5A	3.5			148,482	1478	27	86	
								32,760	101	45	85							OK2AP	*	45,360	234	28	80	HA5A								



