

Results of the 2004 CQ WW DX 160 Meter Contests

By DAVID L. THOMPSON,* K4JRB

The CQ WW 160 Meter CW and SSB Contests have grown from sleepy little contests on a lightly used band (some of us could not even use the band before 1970) to the 2004 running with a record 2106 logs received! The CW section alone had 1330 entries plus 30 check logs, which equals the number of logs received by the ARRL CW Sweepstakes. The number of CW logs jumped nearly 20 percent from last year's record. SSB logs increased from 519 to a record 722 this year.

While a record number of logs were received, contestants found conditions mixed. Some found great conditions, while Jeff VY2ZM/K1ZM, said 2004 was poor from his Prince Edward Island super station. Steve, VK6VZ, traveled from Western Australia to help operate VY2ZM, and while conditions were not good, he did manage to work more Europeans in an hour than he did in an entire contest from VK6.

Individual scoring records were set, and we are still a couple of years away from the sunspot minimum when conditions will peak. UU7J worked 89 DXCC entities, and over 150 different entities were available on either mode (*entities* are what countries are now called). Expect to see DXCC worked over a weekend and some European or African station to reach all 50 states soon.

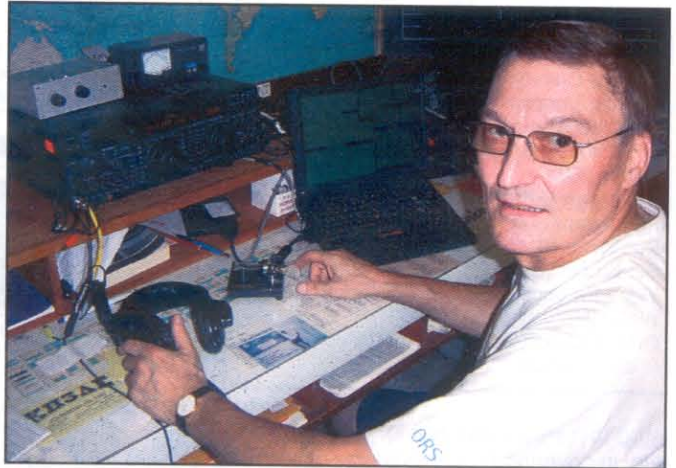
The SSB section is a relative newcomer to the CQ 160 contest fold. It was started in 1981 by then 160 Contest Director Don McClenon, N4IN (SK) thanks to demand for an SSB section. There have been some astounding scores on SSB over the years, and a couple of times the highest score in both sections combined was on SSB. However, with a limited band outside North America, scores usually don't match up with CW. What will improve the contest is for all IARU countries to get together and ask their governments for a worldwide band from 1800 to 1900 kHz. Then the IARU/ARRL gentleman's band plans can be implemented. Here in North America it is not unusual for stations to operate up to 1950 kHz. The CQ contest is still the only worldwide 160-meter SSB contest. Let's get the band fixed so we all can be happy!

Please note that the station operators of Multi-Op stations and the Guest Operators box have been moved to the web. Go to <www.cq-amateur-radio.com>, to the Contests section, to the 2004 Expanded CQ WW 160 Meter Contest results.

CW

OH2PM operating EA8BH nearly broke 2 million points for the highest score ever made in the contests. He beat the existing high score by well over 400K. D4B and PJ2S also made over 1 million points on CW single operator. The late W4AN topped USA entries from the W8JI super station, and frequent competitor VE3EJ was top Canadian with a fine score. S53R at A61AJ beat the old Asia record and also nearly broke 1 million points. Some North American contestants were surprised at his signal strength compared to the Europeans on the band. D4B (op. 4L5A) went low power and also broke the existing low power record by a wide 500K margin. He almost tripled the score of his nearest competitor. This year's hardest working awards go to Paul, N4PN, and Bob, W4MYA, for making the USA top 10 on both modes. A round of new finals for both!

New this year is the RZ3AA Russia plaque won by UA6LV. OM7DX won world high CW QRP, and Don, K8MFO, topped the USA QRP entries plus placed third world. All of top QRP entries scored well compared to many low power entries. G4RCG/HI8 was



Pertti, OH2PM, broke the CW world all-time single-op record from EA8BH.

runner up to D4B in low power, and K1PX again was the USA low power winner. Good antennas and patience are required to make the low power and QRP lists.

Laki and crew operated VP5/VE3NE to the world high multi-operator position. The CW multi-op race was very close, with four stations scoring just over 1 million points. A scant few QSOs or a multiplier or two were all that separated first from fourth place. VY2ZM with nearly 773K was the top Canadian multi, and the W2GD crew keyed their way to high USA.

Thirty-four CW single-operator stations made more than 1000 QSOs. EA8BH (op. OH2PM) made the most with 1540, followed closely by W8JI (W4AN) with 1495. SO2R worked the most DXCC with 82, and DXCC again was dominated by Europe. W8JI (67) and W4ZV (61) were the top North Americans. Making a big DX score depends on working USA and Canadian multipliers. EA8BH and D4B were the most efficient, logging 51. KH7X logged 50 from Hawaii, and CT1FJK led Europe with 40. Forty-one multi-operator stations made over 1000 QSOs. The gang at MD4K almost broke WB9Z's QSO (1775) record with 1760. W2GD (1224) led the USA. UU7J worked the most DXCC with 89. It took 79 to make the top 10. On this side of the ocean, VY2ZM (66) and W2GD (62) led the way. VP5/VE3NE worked the most states and provinces with 55. 9A5Y and F6IRA led Europe with 40, and I5JVA was close behind with 39. Look for the European USA/VE count to increase in the next few years.

Close CW single-operator races occurred in Utah, Kansas, Lithuania, the Netherlands, Poland, Portugal, Romania, Sweden, and the Ukraine. The margin of victory in Kansas was 498 points, and in the Netherlands, Lou, PAØLOU, won by 868 points.

For the CW multi-ops, Pennsylvania was a tight race among three veterans, with W3GH the winner. Croatia, the Netherlands, and Slovakia produced close races. The tightest race was between OM7M and OM8A in Slovakia. The difference was 169 points.

SSB

W7EJ made some improvements and led all SSB single operators this year. His neighbor, D4B, came in second with another fine effort. Jeff, VY2ZM, went solo and found SSB better this time, topping

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PLAQUE WINNERS AND DONORS

SINGLE OPERATOR CW

WORLD BY W4ZV (DJ8WL Memorial): Winner Martti Laine, EA8BH (OH2PM Operator)
USA BY K4TEA: Winner Charles T. Rauch Jr. W8JI (W4AN Operator)
CANADA BY K8FC: John Sluymmer, VE3EJ
ZONE 3 BY N5IA: Winner Ken Keeler, N6RO
ZONE 4 BY K4WA: Winner James F. S. Eppwright, K5RX
ZONE 5 BY N4PN: Winner Jon Zaimes, AA1K
AFRICA BY WS9V: Winner Alexander Teimurazov, D4B (4L5A Operator)
ASIA BY K4SX: Winner Ali Al-Futtaim, A61AJ (S53R Operator)
EUROPE BY K9DX: Winner Krzysztof Sobon, SN7Q (SP7GIQ)
RUSSIA BY RZ3AA: Winner Vlad Lesnichy, UA6LV
OCEANIA BY K9DX: Winner Pacific Contest Club, KH7X (Operator KH6ND)
SOUTH AMERICA BY W4NU (W4UUH Memorial): Winner Steve Knell, PJ2S (G0CCK)
JAPAN BY W4ZV (JA1XAF Memorial): Winner Masaki Okano, JH4UYB
NORTH AMERICA BY CQ (N4IN Memorial): Winner Herbert Schoenbohm, KV4FZ

PHONE

WORLD BY N4NX: Winner James P. Sullivan, CN2R (W7EJ)
USA BY K4JRB: Winner Jerry Rosalius, WB9Z
CANADA BY W0ETC: Winner Jeffrey T. Briggs, VY2ZM (K1ZM)
ZONE 3 BY N4TMW: Winner LaMar Ray, WA7LT
ZONE 4 BY N4XMX: Winner James F. S. Eppwright, K5RX
ZONE 5 BY K1PX: Winner Robert S. Morris, W4MYA
AFRICA BY WB4ZNH: Winner Alexander Teimurazov, D4B (4L5A)
ASIA BY NT4TT/AH2BE: Winner Valentin Benzar, C4M
EUROPE BY WS9V: Winner Rolandas Jokubauskas, LY4A (LY2FY)
OCEANIA BY D4B/4L5A: Winner No Entry.
SOUTH AMERICA BY D4B/4L5A: Winner John Crovelli, P40W (W2GD)
NORTH AMERICA BY CQ (K2EEK Memorial): Winner Alexander Aimette, V47KP (W2OX)

MULTI-OPERATOR CW

WORLD BY N4RJ: Winner Lajos Laki, VP5/VE3NE
USA BY W8UVZ and K8GG: Winner John Crovelli, W2GD
ZONE 3 BY 4X4NJ: Winner Jim Wilson, N7JW

SSB

WORLD BY SOUTHEASTERN DX CLUB: Winner Bud Foster, VP5B (K4ISV)
USA BY WB9Z: Winner South Jersey DX Association, N2CW
ZONE 3 BY 4X4NJ: Winner Jacks Peak Amateur Radio Association, N7GP

Canada and placing third world high. Jerry, WB9Z, assumed his usual place at the head of the USA entries, followed closely by Bob, W4MYA. VE3MGY (ex-VY2MGY/VE3) again topped the QRP entries by a wide margin. Newcomer UR4MBI placed second in QRP from QRP U (the Ukraine). KP4KE operated by DK8ZB ran away with low power. He made the overall top 10 as well. N0FW again made a fine effort and led the USA entries. HI3TEJ placed third plus gave out a good multiplier.

Nine different SSB single operator stations made over 1000 QSOs. WB9Z with 1542 was the leader. W4MYA (1333) and VY2ZM (1237) were second and third, respectively. LY4A (op. LY2FY) worked 73 DXCC entities to lead everyone on SSB. CN2R and D4B were close behind with 70. On this side, VY2ZM (57) was the Canadian leader, with W4MYA topping the USA with 40. Close by, KP4KE worked 55 states and provinces ahead of P40W and KV4FZ with 53. DX leaders were D4B (47) and CN2R (44). Top European was again CT1FJK with 30.

K4ISV and the crew at VP5B led the SSB multi-operators, beating past trophy winners UU7J and XE1RCS. Vic at XE1RCS says this was their best year, and in Europe their call lit up the packet spots. Also making the top 10 world-high multi-operator list were Canadian leader VE3DC and the South

Jersey gang at N2CW with the high USA score. UU7J led the QSO count with 1396. More than 11 multi-operator stations make over 1000 points. UU7J also made the highest DXCC count at 78, with N2CW leading the USA with 42. The top 10 was all Europe except for VP5B and XE1RCS. XE1RCS, being nearby, worked a DX high 56 states and provinces, followed closely by VP5B (55). Multipliers were harder to get in Europe, with EI7M (29) and DL6FBL (28) leading the way. Expect to see these numbers rise over the next few years.

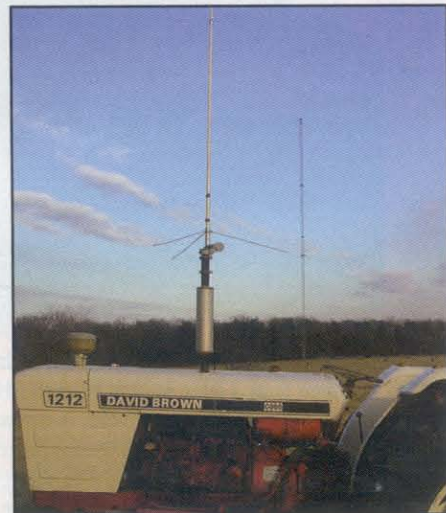
Close SSB single-operator races occurred in New York, North Carolina, Wisconsin, Bulgaria, Italy, and the Ukraine. Actually, Wisconsin was a three-station race, with K9UW winning by a mere 685 points. The only SSB multi-operator race that was close was in Kentucky.

Clubs

Last year's runner up, the Bavarian Contest Club (BCC) geared up the troops and blew away the competition with a record 12.5 million club score. This is the first club score over 10 million. The Potomac Valley Radio Club (PVRC) held second place with a score of 8.36 million. The Frankford Radio Club was not far behind in third with 7.57 million. The Slovenian Contest Club and Contest



Steve, NR4M at CW multi-operator station NR4M in Virginia.



The tractor-mounted antenna for packet CW multi station NR4M.

Club Ontario took fourth and fifth places, with Contest Club Ontario just beating out the Yankee Clipper Contest Club. It took a score of over 3 million to make the top 10, and 25 clubs scored over 1 million points.

Want to get your club on the list? Why not get your gang out in 2005? Remember that DXpeditions by club members count for the club score, and this has been leveraged well in the past. Only clubs with three or more entries are included.

Logging Notes

The contest robot at kkn.net expects a Cabrillo log. In 2004 we only checked the summary, but in 2005 we will check the first QSO line. About 70 logs were found not to be fully Cabrillo, which really slows down the log-checking process. Please make sure your logging program or converter produces good Cabrillo, and please do not try to home-brew your own. Any log that is electronically produced *must* be sent via diskette or e-mail. In 2004 three Cabrillo printed logs and a number of traditional printed logs were received with no electronic backup. We need every electronic log to assure that the scores are correct and the cross-check is accurate. We will convert old logs if need be to get the results we all want. Logs received in the mail that are comput-

er-generated must have a diskette included or they will be rejected as a check log! Hand-written logs will still be accepted.

Some of the scores you see here may be lower, and getting a better cross-check sample is the reason. We also now can more easily identify uniques that are really busted call-sand remove them. Please take the time to make sure everything is correct. We also ran into a problem on portable calls. We do not care what the station sends; just make sure you log it as sent! Log it as sent or lose it!

One final point: We use the claimed score in the Cabrillo summary as a benchmark and to display the claimed scores. Leaving it blank is a mistake. Thanks to Eddie, W6/G0AZT, Jim, AD1C, and others for their help in making the results as accurate as possible.

Certificates and Plaques

Every so often the rules for plaques and certificates are changed to meet conditions. Only one plaque per section is awarded per entrant. The runner-up gets a plaque for country or continent. No plaque is awarded for a score of less than 30K. Minimums for low power and QRP certificates are 5K for low power and 1K for QRP. Exceptions are made by CQ 160 Contest Committee decision (Japan Low Power, for instance). The CQ 160 Contest Committee or the Contest Director may decide to not award a certificate if the effort is not shown (usually a very low score). A runner-up in a state, province, or country may be awarded a second-place certificate if there are eight or more entries and the score is 100K or more. Please have patience, as volunteers handle all plaques and certificates.

The 2005 Contests

The dates for the 2005 CQ WW 160 Meter Contests are set for CW January 29-30 and SSB February 26-27. The contests run from 0000Z the first date to 2359Z the second date. Logs for the 2005 contests may be submitted as hand logs to CQ via snail mail or in Cabrillo format via e-mail to the addresses shown below. You may also submit electronic logs on diskette (3.5 inch, please).

We must hold everyone to our required log-submission deadlines of February 28, 2005 for CW or March 31, 2005 for SSB. The exception is if both logs are submitted together, and then the date is March 31, 2005. If you submit both logs at the same time, please use two separate e-mails, not two attachments to one e-mail. Snail-mail logs must bear a postmark no later than the deadline for consideration.

Send logs to CQ 160 Meter Contest, 25 Newbridge Rd., Hicksville, NY 11801, or via e-mail. This year CW logs go to <160cw@kkn.net> and SSB Logs go to <160ssb@kkn.net>. Remember to put your call in the subject area of the e-mail. Mark snail-mail logs as either CW or SSB. Good luck in the 2005 contests!

73, Dave, K4JRB

CW QRM W/VE

First DX on 160 ever was KV4FZ ... AI5T. QSO rate improved when the antenna was correctly hooked up ...

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K1BV. Never tried contesting before. What a rush ... **KM1N.** Beverage antenna began giving louder signals than my inverted-L. I knew the ice storm had done me in ... **N2FY.** PC glitch forced us back to hand logging. Boy, what a chore ... **W1OP.** 160 operators still have great courtesies ... **W4OGG.** RST exchange is useless ... **W5XW.** Thanks to D4B for a new DXCC entity and CQ zone on Top band ... **WB4DNL.** Took 20 calls to work my buddy at PR0F ... **W5EUQ.** Activity on 160 reminded me of 40 meter CW in the late 1950s ... **W5CN.** A thrill to work old friends ... **K8XF.** Everyone was so polite and helpful ... It's "5NN CA TU" and away ... **KAGUMQ.** Worked every station I called except for an EA with 5 watts ... **W9PNE.** Limited time on due to the flu ... **WA9TZE.** Boy, it's hard to copy with strong power line noise ... **WB9NFL.** Not sure which was worse, the absorption on the band or the vegemite Steve. VK6VZ, brought from Australia. Actually, the vegemite just looked bad ... **VY2ZM.** More than 300 Europeans in the log ... **AA1K.** Rented a cabin in the Central Arizona mountains ... **AB7E.** Worked an EI on one call with 5 watts ... **AD8P.** Worked Alaska for my last state ... **K1DFT.** Antenna was a "Broomstick" mounted at 10 feet on a neighbor's fence ... **K1RQ.** Band was long both nights. Highlight was working A61AJ ... **K2FU.** N6KB sent "HI" which needed to be KH6 for logging ... **K3DL.** Ran just 950 mw from an Index Labs transceiver ... **K4PQC.** Lost several QSOs to a PC problem ... **K4RO.** The new contest times gives an unfair advantage to the East Coast with three evening openings to Europe. Start the contest at 2200Z again ... **K5ZD (Sorry, but CQ wanted all contests to be uniform in starting and ending times—K4JRB).** Worked fewer JA's than two years ago. No Europe heard here but did work EA8 and D4 ... **K6NR.** Mostly a one night affair as high winds made the balloon-supported vertical almost horizontal ... **K6SE.** Contest conflicted with the ARRL January VHF Contest ... **K7AWB.**

Great contest but where was Alaska? ... **K7OA.** Thanks to the people who called but I could not copy this time. Next year I will have a low receiving antenna ... **K7RE.** I did something I have never done before—fell asleep at the rig. Slept 3-1/2 hours ... **K8FC.** Hard to hold a frequency with 100 watts ... **KA7T.** Thanks to W3LPL for letting me use his station and W9GE for the use of his new ORION ... **KD4D.** Fabulous contest. Gets better every year ... **KT1V.** I operated from N0NI ... **N0AC.** Only could get in 11 hours ... **N0FW.** This was by far my best performance in the CQ 160. I have operated it from the first years as W4YWX and now N4PN ... **N4PN.** Europe was in early Saturday evening ... **N4UH.** Started 4 hours late. Conditions good, QRN lousy ... **N6CT.** Lost the amp one hour into the contest. Took another hour to get a replacement ... **N7KA.** Saturday was better for working Europe ... **N8BJQ.** Conditions were better than one year ago. My first hour rate was 135 Q's ... **N8II.** Band was in great shape here ... **NC7X.** Covenant restrictions make 160 contest operation especially challenging ... **NO2D.** First contest operation from the new NR4M QTH ... **NR4M.** We fixed the noise problem and were pleased to hear the DX ... **NZ1U.** Award for patience to A45XR ... **VE3PN.** Just got on to help with a few QSOs ... **VE3WZ.** Tough sledding on a small lot with S9 noise ... **VE7JKZ.** Great contest and conditions. I could get addicted to this ... **W1JQ.** Getting old, contest getting tougher, but still great fun ... **W3BGN.** My first use of a contest logger ... **W5TVW.** Ran QRP to a 6V6 homebrew transmitter. Used a variac to maintain 5 watts output ... **W7DRA.** This is the first time we scored more than 300K from Battle Creek (Michigan) ... **W8UVZ**

CW QRM DX

Work contests for fun and new counters ... **DL0VLA (op. DL1JFM).** DL limit is 75 watts so how do some run 1KW? ... **DL6RO.** My longest antenna is for 80. It's hard work with such an antenna and low power ... **EA4DUT.** No USA worked yet ... **HL5UOG.** We had a strong electrical storm that made reception difficult ... **KH6GP.** Had to force feed my R7000 vertical on 160 ... **OH2OM.** I was called by PR0F for a new one on Top band ... **PA8LOU.** No auroa, no QRN, just no good propagation ... **UA9FAR.** More serious vacation than contest operation ... **C6AYB (op. K3BU).** Had rig problems so had to QRT, but back next year ... **CO8ZZ.** New 2-element vertical is a dream ... **CT1FJK.** First multi with the new vertical ... **DJ6TK.** Operated from the old Armed Forces Network site in Munich ... **DJ5IW.** It is possible to work the contest from downtown Paris with a 25 meter antenna ... **F6GOX.** I did not make the second night and my dreams went out ... **FM5GU.** Only managed a few hours due to the XYL's birthday ... **G3SVL.** The second day was running Europe with 100 watts between loud W's ... **G4RCG/HI9.** Thanks again to Carlo's family ... **I5JVA (op. IK2QEI).** A lot of fun even with my low dipole ... **IK2PFL.** Score not so good this year



Steve, VK6VZ, operating multi-op station VY2ZM during the CW contest.

... **JA0ZRY.** Good to be back in the CQ 160 ... **JA5DQH.** At sunset in Japan, N7JW was 599+. But no Europeans heard this year ... **JE1SPY.** Great contest again plus I had strong competition ... **JH4UYB.** Fun contest but my transmit vertical was not a very good receiving antenna. Back next year with a receiving antenna as well ... **LATAK.** We had a good first day with 600 QSOs but lost the antenna the last night. Oh well, back next year ... **LX7I.** Just a part-time effort this year ... **LY3BA.** This is one of the best contests each year ... **M3C (op. G8VQR).** Good fun with a puny HF6VX vertical ... **MM0ACC.** Band was crowded in Europe. Had high SWR that limited power to 70 watts ... **OLBA (op. OK1CZ).** First contest from this QTH. Inverted-V at only 13 meters high ... **OLBR.** Very unsportsmanlike behavior from several stations ... **ON4WW.** The 1000 foot Beverage worked great ... **PJ2S (op. G8CKP).** Lost the linear in the contest. Worked first KH6 from PY0F ... **PR0F (op. W5SJ).** We need a better antenna for Top band. May put up a 3-element wire beam fixed on USA ... **RU1A.** Most QSOs and best score ... **S57M.** Just made a 160 meter trapped inverted-V. Good way to test it ... **TK5MH.**

SSB QRM W/V

Minimum antenna system = marginal performance ... **K1EY.** Participants were well behaved this year ... **K1HAP.** Great band conditions for QRP ... **K3TW.** Worked W4MYA for my first 160 contact ever ... **KB1CIW.** Most 160 QSOs I have ever made ... **N1ZN.** When I worked WL7YN I thought I had finally worked Alaska for the 50th state for 160 WAS. Then found he was portable nearby ... **N2FY.** I passed my Extra exam on Friday. Many contacts congratulated me ... **W1MKY.** Finally worked Kansas on 160 ... **W2JUV.** Most DXCC worked on 160 ... **W4SVO.** I was amazed at how well my QRP SSB worked. Almost as well as my CW operation ... **W4TMR.** Worked K9IDQ for about 5 minutes before logging the contact ... **WB4UIC.** Excited to find out my TS2000 performs well in a contest ... **WI2Q.** Hope to get up a better DX



Max, KH6ZM, operated from CW multi-op station KH6GP in Hawaii. (Photo by KH6B)

antenna next time ... **AF1T.** It's great to feel the heat and smell the tubes in my TS830S ... **KB0ARZ.** Working VP5B with almost no power and no antenna ... **KK0Q.** Wish the contest was in early February ... **N8XA/QRP.** Working FM5 and bettering my personal best number of contacts ... **W8KNO.** Great time as always but where were KH6 and DC? Next year a DXpedition to either North Dakota or DC ... **WA9TZE.** This is the last year for a paper log but how do you cure RFI? ... **WB9N0.** Worked all day Saturday getting the antenna in the trees and it worked great ... **VA7MJR.** All QSOs were made above 1843 kHz in keeping with the ARRL 160 meter band plan ... **AA1K.** Was able to operate about 13 hours ... **K0GAS.** No one can hear me on SSB ... **K1EP.** It was a real kick when EA9IE called me for a new DXCC counter on 160. KL7J also called but I could not pull him out ... **K5RX.**

Good conditions in the Midwest, but not much Europe and no Pacific. Enjoyed my voice keyer ... **K9FO.** Only one Beverage and it gets line noise. Back next year with

TOP 10 SCORES

SINGLE OPERATOR

USA CW		USA SSB	
W8JI	753,867	WB9Z	351,916
AA1K	622,440	W4MYA	333,036
W4MYA	554,400	W3GH	241,632
W4ZV	551,538	K5RX	236,124
N4PN	430,128	ND8DX	216,999
N2NT	414,960	N4PN	214,808
K4ZW	405,432	W3BGN	209,856
KD4D	404,328	N0FW	196,710
NO2R	383,968	N3HBX	193,725
K4JA	379,268	W3TS	161,226

VE (TOP 5)

CW	SSB
VE3EJ	890,370
VE3AT	407,744
VE3DZ	236,850
VE3QAA	205,854
VE3PN	204,930

QRP (TOP 5)

CW	SSB
OM7DX	63,945
YU1RA	32,727
K8MFO	30,250
OK1FKD	29,304
DF3KV	24,432

DX CW

EA8BH	1,936,746	DN2R	1,028,508
D4B	1,293,732	D4B	904,812
PJ2S	1,099,122	LY4A	550,314
A61AJ	978,439	P40W	548,454
SN7Q	852,452	V47KP	391,206
SO2R	811,832	OK1RI	351,272
OK1RF	779,520	DJ4PT	326,655
YU1EXY	777,920	SY8A	314,175
HA8DU	754,844	KP4KE	311,505
S50A	708,864	ON4WW	309,048

LOW POWER (TOP 5)

D4B	1,293,732	KP4KE	311,505
G4RCG/HI9	452,720	N0FW	196,710
C6AYB	415,800	HI3TEJ	134,550
OK1CF	266,070	K1PX	133,196
DL1YD	244,013	UT3SA	115,805

W/V LOW POWER TOP 3

K1PX	189,125	N0FW	163,370
K1HTV	180,937		

MULTI-OPERATOR

CW (WW)		SSB (WW)	
VP5/VE3NE	1,037,790	VP5B	678,855
9A5Y	1,033,818	UU7J	548,152
MD4K	1,010,004	XE1RCS	527,616
9A1A	1,008,546	DL6LBL	466,970
HG3DX	935,532	4L0G	443,712
I5JVA	928,116	T77C	442,716
OM7M	916,864	EI7M	423,808
OM8A	916,695	VE3DC	281,123
UU7J	898,876	N2CW	260,736
LX5A	874,956	HG1S	260,390

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4 or 5 Beverages ... **K9SG**. 160 SSB QRP is a lot of fun but one heckheva challenge ... **KR1ST**. Running at the high end of the band paid off. I had quite a pileup on 160 kHz ... **KS7T** (Montana—ed). Only operated 10 minutes at the end but handed out some points ... **N1XS**. The contest team was comprised of ten first-time contesters and three experienced operators. We all had a great time ... **N2CW**. Still not much DX. One jammer would play back CQs and QSOs over and over ... **N3HBX**. Good conditions. Wish I had gone to my Florida Island QTH to operate. Only have an inverted-V high in a pine tree here in

Georgia ... **N4PN**. Stations were solid from 1830 to 1955 kHz ... **N4UH**. Band was great but not as good as the CW weekend ... **N4XXM**. Limited effort as still recovering from my FS5UQ trip ... **N8II**. Suffering from laryngitis really slowed me down ... **NX9T**. Several stations had a hard time with the call. VE2 is Quebec not Ontario ... **VE2FAB**. Operated a few pleasant hours ... **VE3BNO**. Propagation was mostly north/ south. However, we did work a few Europeans ... **VE3DC**. New QTH and antennas seems to be playing much better than expected ... **VE3MGY**. SSB is an adventure ... **VY2ZM**. Very good conditions as the

band was packed ... **W1CTN**. Should have looked above 1.9 MHz before Saturday night ... **W7NHN**.

SSB QRM DX

My first time in the 160 contest ... **CU3AN**. I just called S9 or S9+ stations when their frequency was clear ... **DJ3GE/QRP**. My first contest from EI as I am from Poland (ex-SP9JZT) ... **EI9JN**. My best result yet with 20 watts and long wire ... **ES5RIM**. Hard work on SSB with low power but be back next time ... **RX3QDF**. SM5Z is my contest call ... **SM5BPJ**. My first contest and it was fun ... **SV1GRD**. My first QRP effort ... **UR4MBI**. First time contesting from the Bahamas ... **C6AWB**. Great conditions to North America the first night ... **CN2R**. Had a lot of problems during the contest and was not able to operate the entire time. Congratulations to Jim, **CN2R** ... **D4B** (op. **4L5A**). 25 watts to an end fed wire only 6 meters up ... **DF2LH**. Need to get more country multipliers next year ... **E17M**. Could only operate one night. Still dreaming of a two night score ... **FM5GU**. The high point was the opening to Central America and the low point was not being able to spend more time on the band ... **G3VAO**. Was only planning to be QRV a few minutes. Came back at 2300 Saturday and stayed until 0700 Sunday ... **GW4BLE**. Used two dipoles this year ... **HB9CXZ**. There seems to be a lot of fine operators on the band ... **LA7AK**. Had two minutes to spare so switched on the rig in time to work RW2F for a new one ... **LB1LF**. First try on 160 SSB. Could only use 10 watts ... **M3RCV**. Happy to give a few points to BCC (as if they needed them—Hi) ... **OE2VEL**. You know you are wanted when the QSO rate meter hits over 300 Q/hour ... **OE5OHO**. Switching callsigns helps keep up a good rate and the operator motivated ... **OE5XVL**. Absolutely no propagation to the USA ... **OH0NL** (op. **OH2BYS**). Better conditions than I expected ... **OK1RI**. My first 160 contest. I need Beverages ... **OZ1ADL**. A nice contest with a lot of stations. Just would like to work some North America ... **PA0IJM**. Had to go to the hospital. Back next year ... **PA4GCV**. WB9Z was the only USA worked this year ... **PY3CEJ**. I am Asiatic Russia not Ukraine ... **RL9F**. My best 160 meter score ever ... **S57DX**. Increased the height of our inverted-L over a salt water lagoon ... **V31MD**. Good opening to Europe on Saturday ... **XE1RCS**.

(Continued on page 104)

CLUB SCORES

(Minimum of 3 three entries required for listing)

CLUB	SCORE	VRHNIKA CONTESTERS (SLOVENIA)	659,907
BAVARIAN CONTEST CLUB	12,527,339	CENTRAL ARIZONA DX ASSO	612,852
POTOMAC VALLEY RADIO CLUB	8,362,639	MINNESOTA WIRELESS ASSO	545,198
FRANKFORD RADIO CLUB	7,576,579	TIKIRRIKI CONTEST CLUB (ITALY)	515,451
SLOVENIAN CONTEST CLUB	5,050,412	LYNX DX GROUP (SPAIN)	502,436
CONTEST CLUB ONTARIO	4,667,163	DARC (GERMANY)	485,612
YANKEE CLIPPER CONTEST CLUB	4,664,530	SCOTISH-RUSSIAN ARS	477,327
RHEIN RHUR DX ASSOCIATION	4,141,991	GRAND MESA CONTESTERS	469,283
CONTEST CLUB FINLAND	3,816,010	CACTUS RADIO CLUB	455,776
HA DX CLUB	3,309,940	SW OHIO DX ASSOCIATION	434,324
SOC OF MIDWEST CONTESTERS	3,054,397	URE (SPAIN)	369,546
ATCC (REP OF GEORGIA)	2,616,298	HUDSON VALLEY CONTEST DX CLUB	361,793
SOUTHEAST CONTEST CLUB	2,520,567	SPOKANE DX ASSOCIATION	343,787
SP DX CLUB	2,466,924	OKLAHOMA DX ASSOCIATION	343,727
CHILTERN DX CLUB (UK)	2,462,716	SOUTHERN CALIF CONTEST CLUB	330,368
TENNESSEE CONTEST GROUP	2,229,967	LATVIAN CONTEST CLUB	280,967
KTU RADIO CLUB (LITHUANIA)	1,913,338	BR. COLUMBIA DX CLUB	271,745
PORDENONE GANGSTERS	1,798,381	MEDINA 2 METER GROUP	270,999
URAL CONTEST GROUP	1,623,649	CT/RI CONTEST GROUP	270,896
FLORIDA CONTEST GROUP	1,612,926	CAROLINA DX ASSOCIATION	262,966
NORTH TEXAS CONTEST CLUB	1,486,052	KIEV CONTEST GROUP	255,405
BANAT DX GROUP	1,482,536	SOUTHEASTERN DX CLUB	218,838
MAD RIVER RADIO CLUB	1,398,089	KENTUCKY CONTEST GROUP	204,576
CROATIAN CONTEST CLUB	1,159,855	TEXAS DX SOCIETY	193,130
RUSSIAN CONTEST CLUB	1,073,943	NO ARIZONA DX ASSOCIATION	169,451
KANSAS CITY DX CLUB	1,027,548	CENTRAL SIBERIA DX CLUB	154,851
NORTHERN CALIFORNIA CONTEST CLUB	968,520	GREEN VALLEY ARS	146,633
YO DX CLUB	938,305	FOX CONTEST CLUB (SERBIA)	145,173
BELARUS CONTEST CLUB	842,324	MOSCOW CONTEST CLUB	121,066
UKRAIANIAN CONTEST CLUB	838,574	VERON (NETHERLANDS)	115,610
UA2 CONTEST CLUB	804,260	VLADIMIR RADIO CLUB	92,759
CENTRAL TEXAS CONTEST/DX CLUB	780,726	WESTERN WASHINGTON DX CLUB	89,317
UFT (FRANCE)	757,577	WEST PARK RADIO OPERATORS	68,440
CONTEST CLUB KRASNODARSKOGO (KXXX)	713,405	RADIO AMATOR (UKRAINE)	54,177
WORLD WIDE YOUNG CONTESTERS	680,558	BERGEN AMATEUR RADIO ASSOCIATION	23,120

2004 CQ WW DX 160 Meter Contests (Continued from page 30)

Number groups after calls denote score, total QSOs, W/E multiplier, countries worked. Total multiplier is the addition of the W/E and countries. Multi-op scores follow single-op listings. An asterisk (*) denotes low power. State, province, and country certificate winners are listed in bold.

2004 CW RESULTS

SINGLE OPERATOR

NORTH AMERICA

UNITED STATES

CONNECTICUT

K1PX*	189,125	849	55	30
N4XR	156,692	588	51	35
K1YW	153,510	610	53	33
W1JQ*	33,715	235	38	17
K1K1	32,542	165	38	15
W2JU*	18,690	196	41	1
K1BV*	10,880	150	29	3

MASSACHUSETTS

K5ZD	201,912	486	51	43
W1FJ	138,375	534	53	32
K5MA	117,506	414	47	35
W1KIM	74,304	241	34	30
W1GZ*	19,448	193	38	6
K1EP*	13,948	111	27	2
W1TW/GRP	8,676	106	32	4
N1RL*	7,749	80	35	6
N3KCJ*	5,184	84	35	2
W1TO*	1,548	33	16	2

MAINE

K1JB	84,594	390	45	24
K1CP	62,580	246	40	24
AC10	24,310	176	43	12
N1GPG	18,565	174	44	3
W1CEK/GRP	7,744	106	30	2

NEW HAMPSHIRE

K1VH	377,624	919	53	51
W1ECT	68,548	469	47	27
W1AZ*	44,064	288	38	16
NE1B	32,736	172	49	17
N1W1*	4,728	82	23	1
KMIN*	1,476	35	18	0

RHODE ISLAND

K1DFT	59,296	297	43	25
K5JL*	30,312	230	39	13
W1YRC	20,486	139	39	22
AJ1M*	1,674	42	17	1

NEW JERSEY

N2NT	414,960	1052	55	50
N2ZD	383,968	972	54	50
N0ER	125,169	521	50	31
W4ZV/YA	110,058	480	50	28
W2VC*	85,865	298	51	26
N2NYC	39,528	232	42	19
N03N	32,190	214	46	12
N2MR	18,619	213	41	0
W1G0*	15,129	134	30	1
W200	14,112	137	34	8
K2YLH*	10,980	128	33	3
W2LE	4,292	68	27	2
W2CVM*	2,500	24	2	2
W2JEK/GRP	2,540	56	20	0
NJ2OM*	1,569	46	15	0
W5K1*	456	19	12	0
N2GT*	108	9	6	0

NEW YORK

H1EU	157,590	585	51	39
K2FU	127,045	584	54	31
N2CU*	97,056	566	54	18
K2ONP	54,272	314	46	18
W0ST	54,136	259	45	22
NA2M	44,720	226	42	33
K2SX	43,616	271	41	17
W2MU*	41,654	293	46	13
NS2P*	17,201	170	41	3
K2YR*	14,800	149	36	3
W2B2B*	10,428	99	39	5
N2LZ*	7,029	91	36	1
K2TV*	7,223	103	27	4
WB2DVU*	6,150	105	24	1
N2B1*	5,751	90	27	0
W2NRA*	5,478	46	24	9
K2ZHE*	2,780	65	20	1
W2CKM*	2,395	51	20	1
N2CK*	2,163	50	21	0

DISTRICT OF COLUMBIA

W3D0	37,418	314	47	6
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DELAWARE

AA1K	622,440	1383	56	58
N8NA*	38,688	232	46	16

MARYLAND

KD4D	404,328	1102	55	47
K1HTV*	180,537	756	54	35
N3DM	175,063	687	37	37
K3UJ	162,536	637	54	34
K2PLF	139,887	523	49	32
K3ZO	80,332	326	43	31
N3AM	75,670	403	50	20
K3TW*	31,111	252	44	9
K2YWE*	22,635	225	40	7
N3ZHE*	22,368	192	41	5
W6NRL*	14,841	102	39	12
N63K/GRP	14,625	171	33	4
W3K3H*	13,320	161	33	4
W3AKY*	10,990	142	34	1
AK3E*	133	8	6	1

PENNSYLVANIA

W3BGN	324,462	945	54	48
W3EC	289,680	973	55	47
W3TS	241,605	911	55	36
K3ATO	109,956	558	52	25
K3SV	76,146	330	45	29
W3TDF	73,901	498	47	20
K3SWZ*	51,870	318	48	17
N3NR	38,860	254	45	13
W3PT*	21,120	167	35	13

W3RJ	20,475	156	31	14
W3S3*	19,649	169	43	6
K3JGJ	18,544	92	47	14
N3K3*	18,446	175	42	4
K3PH	14,826	140	35	7
W3UHP*	14,274	185	38	7
AD8L*	12,321	145	34	3
W3AG*	9,348	90	34	7
N3KN	8,840	104	28	25
AA3TL	6,206	98	28	1
K3NL	3,144	54	21	3
K83CFV*	1,496	44	17	0

ALABAMA

KA1DWX	62,025	311	49	26
K4VU*	54,900	400	50	11
W4NT1*	29,750	266	44	6
K4W1*	27,390	199	45	10
K4HL*	25,830	262	42	4
K4I4L*	21,471	171	37	14

FLORIDA

N4PN	430,128	1193	59	57
N4TB	186,852	668	52	40
K5KJ	149,600	621	52	33
N4WV	136,610	336	52	43
K9CM	83,372	356	47	29
W4S0*	72,927	370	49	24
W4AA*	69,277	342	35	10
AD4Z	64,970	309	48	26
N4BP	50,816	297	48	16
N4UY	46,060	147	34	36
K4GKD*	39,715	228	45	20
K8XF*	32,724	260	45	9
W4SAA*	28,350	229	42	12
K4JAJ*	22,207	131	34	19
W70F	15,840	142	35	10
N4QV*	14,994	88	34	17
N4EK*	9,361	101	29	8
W4XL*	9,282	93	35	7
KN4Y*	7,490	98	34	1
W5EU*	3,584	39	18	10
K1RQ*	2,727	46	25	2
W8IM*	2,472	50	23	1
AC0M	1,978	30	17	6
N4CU*	630	19	13	1

GEORGIA

W8J1	753,867	1495	56	67
K4EA	269,568	771	55	49
N04H	222,177	794	54	39
K4BAI	164,027	705	54	35
W4AAT	137,170	447	48	38
N4NX	135,720	532	54	36
K4BE*	36,192	256	44	18
W40WV*	35,112	269	47	9
N4GG	34,736	299	44	8
W4W4	28,832	240	44	1
K40GG*	27,378	170	37	17
K40Y*	23,595	177	45	10
N4W0*	13,616	136	40	7
K4GA*	13,065	133	36	2
N4XMX	6,422	76	36	2
N8J*	6,200	94	30	1
K4PQC/GRP	3,072	60	24	0
WB6BWZ/GRP	2,562	58	21	0

KENTUCKY

K4FXM*	73,856	506	49	15
KM4FO*	28,428	287	43	3
KM4CH/GRP	16,598	174	41	2
K4SAC/GRP	10,320	120	39	10

NORTH CAROLINA

W4ZV	551,538	1237	56	61
K4XD	260,300	802	54	36
K4SV	137,025	482	51	38
K4D3*	61,842	378	48	46
W44DOU*	57,070	363	49	16
W4TMR/GRP	32,454	278	47	7
NX9T	17,108	156	42	6
NA4H	14,878	146	37	6
W4MY*	13,068	127	41	3
WB4MGS*	12,558	128	36	6
K4GHS*	9,800	123	31	4
W2DZO*	9,472	119	35	2
N4CW	7,050	100	26	4
N4MTO*	3,864	71	20	1
K4QPL*	3,108	50	27	3
AE4EC*	2,205	45	19	2
N4HX1*	1,862	49	19	0

SOUTH CAROLINA

K4CWN*	148,770	650	55	32
N2FY	67,470	278	50	28
K4DLJ*	62,169	319	46	23

TENNESSEE

N4IR	139,590	791	53	23
K4AMC	84,352	568	49	15
NA4K	84,152	550	52	15
K4RO	75,190	404	52	21
N4TN*	52,836	309	48	20
W4DAN*	51,678	431	47	7
W6UB	41,202	235	43	20
W4NZ*	37,464	297	46	10
K1GU	32,720	201	45	15
N4YH*	23,435	252	41	2
K6EJ*	16,875	166	43	2
K4BEV*	16,380	166	41	1
K4BX*	13,065	157	39	0
W4HZD*	12,831	157	38	1
W4M4*	12,519	145	36	2
K4B3*	10,064	135	33	1
KE40AR*	9,082	110	36	2
W4AGLH*	7,872	87	39	2
W40GG	7,390	123	35	1
N4JM*	2,175	42	25	0
W4TYU*	741	24	13	0

VIRGINIA

K4MYA	554,400	1314	56	56
W4M2	405,432	1129	57	51
K4JA	379,268	991	57	49
W4Y4	162,320	779	51	26
W40AQ	137,445	708	50	27
K4QNS	93,288	407	49	20
N3JB	84,744	476	50	22
W4APGM/GRP	68,315	446	47	20
W3P8*	66,960	487	52	8
N4MM	63,072	268	46	27

N4DJ	53,667	309	46	21
W3FJ	39,180	242	41	19
W2YE	28,325			

VE7FO*	1,510	32	10	0	OE3I	AUSTRIA	428,925	1078	16	59	GOMTN G0DCX/QR G3SVL*	39,560	198	2	38	DK0ES*	8,602	89	0	22	SP4TBM/QR S01VAE*	20,889	128	0	33				
VE7JKZ	270	126	14	1		OET1KW	20,010	137	0	29		G3YMC/QR G3JZ*	19,620	138	0		30	DJ2IE*	8,424	81		0	24	S01VAE*	17,777	127	0	29	
VA7CAB*	87	7	3	0			EUGEU EU1AZ EW3LN	BELARUS	310,104	793			10	62	G4IYI G3SJJ G4DRS		18,907		98	2		35	DL0SHZ*		8,376	80	0	24	SP5GH
C6AYB*	415,800	885	53	35	E6V6M*			277,062	864	5	56		G4IYI G3SJJ G4DRS	18,144		103	0		36	DH4S80*	8,316	91			0	21	SP8DEQ/QR SPTAWG*	7,568	
8P6EX*	6,665	37	17	14		E6V6M*		106,624	414	1	48	G4IYI G3SJJ G4DRS		14,310		106	0	37	DM5TI*		7,008	48		0	30	SP7EAW*		2,940	
V31YN	153,180	363	48	26			E6V6M*	76,320	356	0	40			G4IYI G3SJJ G4DRS	1,431	108	0	21			DL90T*	5,020	52	0	20			SP10TG*	1,980
CO2JD/QR CO8ZZ*	66,468	220	40	8	E6V6M*			10,638	80	0	27		G4IYI G3SJJ G4DRS		9,145	61	0	30		DJ7MGQ DJ9UW*		5,019	52	0	21		SP4Z*		1,846
CO8LY*	57,524	262	43	8		E6V6M*		432,408	967	26	61	G4IYI G3SJJ G4DRS			7,950	55	0	30	DK2Z*			2,565	39	0	15	PORTUGAL			487,926
CO2CI*	28,767	134	40	3			E6V6M*	383,332	682	33	51			G4IYI G3SJJ G4DRS	12,558	91	0	27			DL2LAR	2,704	44	0	13			CT1FJK CT1TLT	478,296
D0MINICAN REPUBLIC	452,720	583	51	29	E6V6M*			319,650	779	16	59		G4IYI G3SJJ G4DRS		128,565	558	0	45		DK2Z*		2,289	23	0	21		ROMANIA		187,334
G4RCG/H9*	34,320	140	31	13		E6V6M*		208,412	524	18	65	G4IYI G3SJJ G4DRS			99,593	405	0	47	SV1RP SVXZ/QR SV8CS			295,490	864	11	54	Y05BRZ*			193,354
JAGWFM/H8	34,320	140	31	13			E6V6M*	194,712	661	3	54			G4IYI G3SJJ G4DRS	60,352	251	1	45			SV1DPI*	35,376	135	1	47			Y05PBF	181,608
FMSGU	367,540	723	54	40	E6V6M*			100,935	430	0	45		G4IYI G3SJJ G4DRS		49,248	193	0	48		HUNGARY		8,424	61	1	26		Y02IS*		174,363
XE1V	65,137	245	46	7		E6V6M*		98,340	442	0	44	G4IYI G3SJJ G4DRS			30,040	141	0	40	HA8DU			754,844	1183	30	77	Y03ND*			78,750
XE2AX	20,330	106	35	4			E6V6M*	45,490	189	0	45			G4IYI G3SJJ G4DRS	23,380	130	0	42			HA8BE	409,716	974	24	68			Y03PJ*	61,815
XE1MM	7,668	57	22	5	E6V6M*			24,614	156	0	31		G4IYI G3SJJ G4DRS		22,962	101	0	35		HA1CW*		204,840	675	11	49		Y03RH*		38,850
XE2MX*	2,775	37	15	0		E6V6M*		4,978	50	0	17	G4IYI G3SJJ G4DRS			175	7	0	5	HA8NU			145,591	408	14	53	Y03TG*			34,020
US VIRGIN ISLANDS	532,860	807	54	53			E6V6M*	2,448	30	0	19			G4IYI G3SJJ G4DRS	312,732	667	28	56			HA3OU*	135,216	497	2	52			Y03UW*	17,889
KV4FZ	532,860	807	54	53	E6V6M*			2,352	30	0	16		G4IYI G3SJJ G4DRS		221,437	435	31	48		HA8GK/QR HA1WD/QR		12,589	68	0	27		Y04ATW/QR		17,889
E88BH	1,936,746	1540	51	75		E6V6M*		98,406	288	18	45	G4IYI G3SJJ G4DRS			125,457	424	10	47	EI/OK1TN EI6IZ			5,058	58	0	18	Y02GL*			8,704
E88JF*	33,880	86	6	34			E6V6M*	58,406	288	18	45			G4IYI G3SJJ G4DRS	98,406	288	18	45			Y02GL*	3,344	43	0	16			Y06ADW*	7,960
E88JF*	33,880	86	6	34	E6V6M*			58,406	288	18	45		G4IYI G3SJJ G4DRS		98,406	288	18	45		Y02GL*		3,344	43	0	16		Y06ADW*		7,960
D4B*	1,293,732	1073	51	70		E6V6M*		58,406	288	18	45	G4IYI G3SJJ G4DRS			98,406	288	18	45	Y02GL*			3,344	43	0	16	Y06ADW*			7,960
Y8BG	62,604	201	0	27			E6V6M*	58,406	288	18	45			G4IYI G3SJJ G4DRS	98,406	288	18	45			Y02GL*	3,344	43	0	16			Y06ADW*	7,960
UA9CLB	472,890	771	1	65	E6V6M*			58,406	288	18	45		G4IYI G3SJJ G4DRS		98,406	288	18	45		Y02GL*		3,344	43	0	16		Y06ADW*		7,960
UA9FAR*	229,320	441	0	56		E6V6M*		58,406	288	18	45	G4IYI G3SJJ G4DRS			98,406	288	18	45	Y02GL*			3,344	43	0	16	Y06ADW*			7,960
UA9GAM*	209,002	657	0	62			E6V6M*	58,406	288	18	45			G4IYI G3SJJ G4DRS	98,406	288	18	45			Y02GL*	3,344	43	0	16			Y06ADW*	7,960
UA9GAM*	209,002	657	0	62	E6V6M*			58,406	288	18	45		G4IYI G3SJJ G4DRS		98,406	288	18	45		Y02GL*		3,344	43	0	16		Y06ADW*		7,960
UA9GAM*	209,002	657	0	62		E6V6M*		58,406	288	18	45	G4IYI G3SJJ G4DRS			98,406	288	18	45	Y02GL*			3,344	43	0	16	Y06ADW*			7,960
UA9GAM*	209,002	657	0	62			E6V6M*	58,406	288	18	45			G4IYI G3SJJ G4DRS	98,406	288	18	45			Y02GL*	3,344	43	0	16			Y06ADW*	7,960
UA9GAM*	209,002	657	0	62	E6V6M*			58,406	288	18	45		G4IYI G3SJJ G4DRS		98,406	288	18	45		Y02GL*		3,344	43	0	16		Y06ADW*		7,960
UA9GAM*	209,002	657	0	62		E6V6M*		58,406	288	18	45	G4IYI G3SJJ G4DRS			98,406	288	18	45	Y02GL*			3,344	43	0	16	Y06ADW*			7,960
UA9GAM*	209,002	657	0	62			E6V6M*	58,406	288	18	45			G4IYI G3SJJ G4DRS	98,406	288	18	45			Y02GL*	3,344	43	0	16			Y06ADW*	7,960
UA9GAM*	209,002	657	0	62	E6V6M*			58,406	288	18	45		G4IYI G3SJJ G4DRS		98,406	288	18	45		Y02GL*		3,344	43	0	16		Y06ADW*		7,960
UA9GAM*	209,002	657	0	62		E6V6M*		58,406	288	18	45	G4IYI G3SJJ G4DRS			98,406	288	18	45	Y02GL*			3,344	43	0	16	Y06ADW*			7,960
UA9GAM*	209,002	657	0	62			E6V6M*	58,406	288	18	45			G4IYI G3SJJ G4DRS	98,406	288	18	45			Y02GL*	3,344	43	0	16			Y06ADW*	7,960
UA9GAM*	209,002	657	0	62	E6V6M*			58,406	288	18	45		G4IYI G3SJJ G4DRS		98,406	288	18	45		Y02GL*		3,344	43	0	16		Y06ADW*		7,960
UA9GAM*	209,002	657	0	62		E6V6M*		58,406	288	18	45	G4IYI G3SJJ G4DRS			98,406	288	18	45	Y02GL*			3,344	43	0	16	Y06ADW*			7,960
UA9GAM*	209,002	657	0	62			E6V6M*	58,406	288	18	45			G4IYI G3SJJ G4DRS	98,406	288	18	45			Y02GL*	3,344	43	0	16			Y06ADW*	7,960
UA9GAM*	209,002	657	0	62	E6V6M*			58,406	288	18	45		G4IYI G3SJJ G4DRS		98,406	288	18	45		Y02GL*		3,344	43	0	16		Y06ADW*		7,960
UA9GAM*	209,002	657	0	62		E6V6M*		58,406	288	18	45	G4IYI G3SJJ G4DRS			98,406	288	18	45	Y02GL*			3,344	43	0	16	Y06ADW*			7,960
UA9GAM*	209,002	657	0	62			E6V6M*	58,406	288	18	45			G4IYI G3SJJ G4DRS	98,406	288	18	45			Y02GL*	3,344	43	0	16			Y06ADW*	7,960
UA9GAM*	209,002	657	0	62	E6V6M*			58,406	288	18	45		G4IYI G3SJJ G4DRS		98,406	288	18	45		Y02GL*		3,344	43	0	16		Y06ADW*		7,960
UA9GAM*	209,002	657	0	62		E6V6M*		58,406	288	18	45	G4IYI G3SJJ G4DRS			98,406	288	18	45	Y02GL*			3,344	43	0	16	Y06ADW*			7,960
UA9GAM*	209,002	657	0	62			E6V6M*	58,406	288	18	45			G4IYI G3SJJ G4DRS	98,406	288	18	45			Y02GL*	3,344	43	0	16			Y06ADW*	7,960
UA9GAM*	209,002	657	0	62	E6V6M*			58,406	288	18	45		G4IYI G3SJJ G4DRS		98,406	288	18	45		Y02GL*		3,344	43	0	16		Y06ADW*		7,960
UA9GAM*	209,002	657	0	62		E6V6M*		58,406	288	18	45	G4IYI G3SJJ G4DRS			98,406	288	18	45	Y02GL*			3,344	43	0	16	Y06ADW*			7,960
UA9GAM*	209,002	657	0	62			E6V6M*	58,406	288	18	45			G4IYI G3SJJ G4DRS	98,406	288	18	45			Y02GL*	3,344	43	0	16			Y06ADW*	7,960
UA9GAM*	209,002	657	0	62	E6V6M*			58,406	288	18	45		G4IYI G3SJJ G4DRS		98,406	288	18	45		Y02GL*		3,344	43	0	16		Y06ADW*		7,960
UA9GAM*	209,002																												

SPAIN E14DAV 360,226 732 31 51 E45FD 301,760 629 19 54 E4BQ 209,742 433 32 46 (Op: OHXX)			DISTRICT OF COLUMBIA 4U1WB 468 26 9 0			ALBERTA VE6JY 385 11 7 0			PCSM 224,770 595 18 52 PI4CC 39,522 180 6 36 PI4ALK 26,928 161 0 34 PI9RSR 21,624 126 0 34			W1G0 12,408 102 33 11 N2ED 12,190 101 37 9 K2YLH* 9,600 128 28 4 WV2ZOW* 4,410 93 21 0 K2SZ* 4,185 67 25 2 W120* 3,750 69 25 0 K2MN* 1,411 37 17 0		
E47RM* 131,577 383 17 44 E42LUP 105,964 318 23 36 E47NW* 56,160 210 1 51 E44NP* 42,862 241 22 44 E42CMY* 42,274 181 6 40 E44DRV* 35,235 148 9 36 E44KA* 10,472 74 3 25 E428NU* 5,400 57 0 20 E41DDU* 3,654 33 0 21 E45DCL* 1,956 25 0 16 E44UT* 1,170 20 0 13 E45AAJ* 350 10 0 7			MARYLAND W3EKT 50,468 296 45 29 W3UL 40,658 226 44 14			BRITISH COLUMBIA VE7SV 195,492 589 51 15			POLAND SP4PBI 288,178 775 7 64 SP2YNC 217,920 704 7 53 SNBF 194,370 683 4 53 SP3KHF 138,913 518 0 53 SN3U 91,862 401 2 44 K3BIMA 72,576 342 1 41 SP9KRT 34,200 173 0 40			K3DDV 47,846 449 42 5 W42JQ* 44,022 324 45 13 NA2P 40,858 254 43 19 N2MTG* 22,181 245 37 1 N1EU 21,217 158 33 16 N4ZM 12,555 157 33 2 N2BZP* 11,276 131 30 6 K2YR* 10,080 108 31 5 W2JUV* 6,136 103 26 0 W2CXM* 2,196 49 18 0 (W09S)		
SWEDEN SM6CEN 233,926 724 5 57 757V* 226,142 756 7 48 SM7GIB 167,712 686 0 51 SM6BGA 50,061 240 3 38 SM5CCE 45,305 217 0 41 SM6WOB 44,280 247 0 36 SM7BJW* 26,697 162 0 33 SM6IDD* 15,109 106 0 29 SM6BUV* 11,281 78 0 29 SM1TDE 11,144 81 0 28			PENNSYLVANIA W3GH 270,712 794 55 49 K3WW 260,352 846 56 40 N3RS 256,985 692 53 50 W8FJ 182,890 537 54 42 N3Q 179,910 923 53 37 N3Q 137,112 509 50 37 W3VF 123,710 452 54 35 AA3B 81,174 263 49 34 K3NM 36,465 275 43 12 W3KWH 33,046 122 36 26 K3CP 22,032 192 41 7 K3NZ 14,663 116 28 15 W3FVT 14,040 161 36 3 N3ZA 13,095 107 35 10			TURKS & CAICOS VP5/VE3NE 1,037,790 1460 55 62			ROMANIA YR2I 487,858 1000 24 62			NEW YORK RU1A 714,168 1198 29 80 RK6BN 645,015 1053 26 79 RK4JWR 412,427 866 10 73 RL3A 389,592 1028 0 72 UA3DPX 22,590 97 0 30 RA3AJ 164,820 553 5 55 R21QZZ 134,995 566 0 49		
SWITZERLAND H9ARF* 171,100 563 8 51 H9BCIP 60,624 117 21 51 H9HQX/DRP 4,988 60 0 17			ALABAMA KS4YT 28,304 185 42 16			JAPAN JA3YBK 43,600 147 12 28 JE1ZWT 20,039 118 7 22 JA0ZRY 1,430 24 5 5			RUSSIA ASIA UA9AT 450,944 755 1 63 RT9W 392,645 703 0 59 RW9C 314,302 585 0 58 RK9CWB 262,440 484 0 60 UA0AGI 22,590 97 0 30 RU9CWG 13,846 61 0 32			RUSSIA RU1A 714,168 1198 29 80 RK6BN 645,015 1053 26 79 RK4JWR 412,427 866 10 73 RL3A 389,592 1028 0 72 UA3DPX 22,590 97 0 30 RA3AJ 164,820 553 5 55 R21QZZ 134,995 566 0 49		
UKRAINE UY5ZZ 217,164 591 5 64 UX5NQ* 209,850 835 2 48 UT5DL* 205,372 621 7 57 UX0IB 157,685 555 1 54 UR5MD 124,378 375 5 30 UR2M 124,124 473 2 50 UY0IX* 114,600 450 0 50 UR6J* 113,456 388 4 52 UT1FA* 113,152 426 4 48 UY0ZG 107,305 385 3 58 US2WU* 106,344 364 2 54 US8ZZ 96,465 310 8 51 UX81X/DRP 77,486 355 1 42 ENTU 74,307 309 0 47 (Op: UXTUA)			FLORIDA WS4Y 159,068 576 53 38 N8PR 41,262 145 42 27			JORDAN JY9QJ 362,390 604 5 57			EUROPE AUSTRIA OE2VEL 63,918 223 3 50			SPAIN E1WX 390,280 826 30 51 EA4DAT 33,120 159 9 34		
USA W4ATL 14,250 156 32 8 N6MZ/4 13,761 48 2 31			GEORGIA W4ATL 14,250 156 32 8 N6MZ/4 13,761 48 2 31			EUROPE AUSTRIA OE2VEL 63,918 223 3 50			SPAIN E1WX 390,280 826 30 51 EA4DAT 33,120 159 9 34					
USA W4ATL 14,250 156 32 8 N6MZ/4 13,761 48 2 31			GEORGIA W4ATL 14,250 156 32 8 N6MZ/4 13,761 48 2 31			EUROPE AUSTRIA OE2VEL 63,918 223 3 50			SPAIN E1WX 390,280 826 30 51 EA4DAT 33,120 159 9 34					
USA W4ATL 14,250 156 32 8 N6MZ/4 13,761 48 2 31			GEORGIA W4ATL 14,250 156 32 8 N6MZ/4 13,761 48 2 31			EUROPE AUSTRIA OE2VEL 63,918 223 3 50			SPAIN E1WX 390,280 826 30 51 EA4DAT 33,120 159 9 34					

W0YR	68,628	513	42	15
K4JA	54,306	344	44	19
K4ZW	39,088	285	43	13
N4DWK*	28,188	213	41	13
N4BCC*	23,144	236	39	5
W3BP	20,202	214	31	8
K4RDU	17,116	169	38	10
N4MM*	16,807	135	39	10
K840LM*	11,653	119	38	4
AD4TJ	11,220	141	30	5
W4M3T*	9,858	150	30	1
KJ4FP*	8,086	106	26	6
W2YE	5,363	66	25	6
K4EU*	4,300	77	24	1
K4EJ*	4,140	84	23	0
K4GM*	3,772	76	21	2
W4IM*	1,750	58	14	0
N4JED*	168	12	7	0

LOUISIANA				
N45Q*	848	25	15	1
MISSISSIPPI				
N15F*	9,386	113	36	2
N5PA	6,895	85	29	6
W5THT	1,596	25	16	5

NEW MEXICO				
N6ZZ	18,612	176	40	7
OKLAHOMA				
W5TM	124,392	765	55	18
(Op: W5AO)				

TEXAS				
K5RX	236,124	1209	57	27
W5PR	140,866	772	54	24
K5NZ	39,353	285	50	9
N0RQ	13,455	122	36	9
W5MPX*	9,374	93	38	5
K5BG	8,460	106	34	2
K5OEG*	7,995	86	36	5
N5VK	4,805	60	30	1
K5SF*	1,672	35	22	0
W5DBK*	80	8	5	0

CALIFORNIA				
K6TQ	55,005	430	50	7
K6KDK	33,400	298	47	3
N6AA*	26,028	203	45	9
K67Q*	22,308	189	46	2
K6SE	22,110	157	43	12
N6NF*	21,291	204	44	3
N6RO	18,081	195	39	2
W6RKC	11,562	120	38	3
W6HG	6,200	88	29	2
W6JK*	4,788	78	27	1
A6EE*	2,750	52	24	1
W6VGI	2,679	63	17	2
W6ISO	2,438	47	21	2
K6EOR*	2,100	64	14	1
K6LRN	1,218	39	13	1
KU6T*	768	29	11	1
W6UE*	637	20	21	2
(Op: N6AN)				
K6IPV	620	28	9	1
W6RTW*	150	11	6	0

ARIZONA				
NF7E	41,325	326	49	8
KJ7WY	39,176	288	49	10
W7YS	5,984	82	32	2
KA7TDH	5,280	82	29	1

IDAHO				
K0TO	33,456	314	45	3
KE7RT*	19,355	172	45	4

MONTANA				
K57T	39,368	319	51	5
K7BG	8,316	101	33	3

NEVADA				
K7ACZ*	2,920	67	19	1
N7ON*	649	25	10	1

OREGON				
W7OR*	13,767	160	37	2
W3CP*	4,200	69	26	2

UTAH				
KF7IQ	374	17	11	0

WASHINGTON				
W47LT	85,748	586	52	12
K7RL	44,874	359	47	7
W7WKR*	26,352	249	46	2
W7NIN	25,760	243	40	6
K7UIR	14,924	161	39	2
N7LOX	12,122	143	37	1
K7AWB*	5,916	78	34	0
W9PL	5,460	79	29	0
W7SAW*	3,915	62	27	0
KA7GEK*	1,224	33	17	0
W6AWD*	390	18	10	0

WYOMING				
W4Z1ZL	69,502	524	51	8
K07X*	2,139	42	23	0
W4UIC*	290	13	10	0

MICHIGAN				
W8MJ	85,743	605	54	9
N8OL	66,000	501	52	8
N8LJ	51,840	381	52	8
W8JWN	24,751	205	48	5
K8YTO	6,405	74	33	2
K8GT*	4,806	80	27	1
K8YVK*	4,669	70	28	1
N8FM*	1,035	30	15	0

OHIO				
N8DX	216,999	1170	58	23
N8FW*	196,710	987	56	27
K8FR*	50,814	426	48	6
K8NVR*	50,085	429	45	8
W8DD*	26,864	258	39	7
N8OH*	22,800	245	35	5
N8W*	21,267	173	43	8
W8KNO*	18,396	201	39	3
W8TNO	11,045	90	37	10
K8BL*	10,992	99	34	9

K8MR*	10,272	141	31	1
N8XX/DRP	5,796	99	28	0
AF8C*	3,266	62	23	0
K8UDV*	2,714	53	23	0
W8EH*	1,008	25	18	0

WEST VIRGINIA				
W5GFR	149,682	825	56	22
N8II	107,184	695	46	20
K2UOP	104,453	675	52	15
N4SEA	29,583	219	47	10

ILLINOIS				
W89Z	351,916	1542	59	38
N2BJ	62,370	321	50	5
N9FJ*	50,112	386	51	7
K9IDQ	40,260	324	47	8
K9FY	38,760	283	51	9
A89H	38,070	311	47	7
K9MMS*	20,962	199	42	5
W9LYN*	14,749	152	40	3
K9QVB*	12,432	127	37	5

MISSOURI				
K0JPL	58,496	405	53	11

KANSAS				
W0NO	139,230	900	57	13
K0RH*	96,192	686	53	11
N0AG*	40,068	344	47	7
AA0MZ*	23,479	199	47	6

MINNESOTA				
K0TT	87,904	572	55	12
KT0R	66,906	473	53	10
KS0T*	30,912	239	50	6
N0AT*	27,694	179	49	12
K0KX*	17,664	169	45	6
K4IU	15,910	164	40	3
WA2MNO*	13,684	139	42	2
K0AD*	10,290	106	40	2
N0AT*	3,024	50	26	1
W0HW*	2,700	48	24	1
K0VQ	2,626	43	25	1
N0KBD*	1,980	36	21	1

MISSOURI				
K0JPL	58,496	405	53	11

VE3BHI*	5,635	52	23	0
VE3RCN*	4,980	54	20	0
VA3SWG*	2,584	29	19	0

SASKATCHEWAN				
VA5DX	204,930	612	55	14
ALBERTA				
VE6SF	32,095	139	40	9
VA6MM	3,400	43	17	0

BRITISH COLUMBIA				
VE7FO*	8,740	98	48	1
VA7MJR*	288	15	4	0
BERMUDA				
VP9GE*	31,390	142	32	11

COSTA RICA				
T12KAC*	8,580	49	21	12

CAPE VERDE ISLANDS				
D4B	904,012	778	47	70
(Op: 4L5A)				
EGYPT				
SU9AM*	5,700	30	0	19

MOROCCO				
CN2R	1,028,508	906	44	70
(Op: W7EJ)				
ASIA				
ASIATIC RUSSIA				
RA9MJ	97,211	307	0	41
RL9F	70,004	168	0	44
UA9SPY*	20,940	75	0	30
RW9QA*	12,351	73	0	23
RA0ALM	756	10	0	9

CYPRUS				
C4M	139,850	286	1	49
KYRGYSTAN				
EX8AA	1,755	22	0	19

EUROPE				
ALAND ISLANDS				
OH0NL	151,449	506	2	55
(Op: OH2BYS)				
AUSTRIA				
OE9MON	63,710	270	4	42
OE8YDQ	18,360	101	1	35
OE8CQ	17,424	104	1	32
OE1TKW*	825	15	0	11
AZORES				
CUSAN*	1,300	17	1	12

BELARUS				
EU1AZ	61,576	275	0	43
EW2BX*	28,186	166	0	34
EW600*	9,288	76	0	24
BELGIUM				
ON4WW	309,048	749	16	63
DR4N*	62,006	289	1	42
(Op: ON4ACA)				
BOSNIA				
T94LW*	20,864	126	0	32

BULGARIA				
LZ2DF*	24,228	134	0	36
LZ1AQ	20,202	105	0	37
LZ2UZ*	12,025	95	0	25
CROATIA				
9A7ZZ	64,413	243	0	43
9A3RE*	12,780	84	1	29

CZECH REPUBLIC				
OK1RI	351,272	872	20	56
OK1TP	100,008	380	9	45
OK2PMS*	61,416	316	1	40
OK2AB*	55,224	303	0	39
OK1FC*	40,520	210	0	49
OK2BEN*	36,408	184	1	40
OK2BOL*	34,040	177	1	39
OK1KZ*	26,144	150	1	37
OK1MJA*	19,550	123	1	33
OK1FDY	19,180	116	0	35
OK2BZM*	10,272	97	0	24
OK1F/DRP	10,088	86	0	26
OK1DQY*	1,794	30	0	17

DENMARK				
OZ1DD	286,348	814	6	62
OZ1HXQ	144,760	512	5	50
OZ4D	22,050	118	0	37
ENGLAND				
G6M	101,847	415	3	48
G3VAO*	72,346	220	11	50
G3SVL	62,220	242	4	47
M3RCV*	2,768	37	0	16

ESTONIA				
ESSRIM*	1,920	24	0	16
FINLAND				
OH2PM	91,603	382	1	46
OH6MIO*	30,873	146	0	41
OH5NE	28,980	162	0	35
OH2BO	26,866	139	1	37
OH2KI	378	10	0	7
OH1BOI*	51	4	0	3

FRANCE				
F5BBD	102,548	297	12	50
F5JFU	20,459	90	4	37
F6GOX	14,840	84	1	34
GERMANY				
DJ4PT	326,855	805	19	66
DJ6WL	163,410	559	11	54
DF2ZP	149,296	551	10	52
OK2OY	97,405	393	3	52
DF3KV*	78,210	327	4	51
DL5KUT	63,752	274	3	49
DJ5MW	54,135	292	4	41
DL5ND5*	51,216	281	5	39
DJ9LW*	43,017	284	0	39
DJ5TK*	33,442	160	3	43
DB8NI*	26,985	188	0	35
DM2AWM*	25,236	168	1	35
DL3LAB	24,486	186	0	33
DJ5HW	20,922	158	1	32
DH8AF*	19,032	105	1	38
DL8SHZ*	18,278	114	0	37
(Op: DL1ASR)				
DL2RMC*	17,136	115	1	33
DL4WA*	16,980	139	0	30
DJ2YE*	15,648	113	0	32
DL4NN*	14,670	120	0	30
DJ3LE*	14,477	116	0	31
DG6RBD*	12,840	100	0	30
DF8AA*	11,718	83	0	31
DK0FY*	1			

