Top Band Contest Draws Record Crowd

Gary Breed, K9AY k9ay@k9ay.com

No sunspots? Who cares! Top Band was wall-to-wall with signals as the 2008 ARRL 160 Meter Contest began at 2200z on December 5. If you thought the band seemed unusually crowded, you were correct—a record 1281 logs were submitted for this event. While the solar cycle minimum generally benefits lower frequency bands, there are no guarantees for any given weekend. Fortunately, this contest saw band conditions that were good enough to hold the interest of newcomers and old timers alike.

The ARRL 160 Meter Contest always includes many good stories about hams who either don't have permanent 160 meter antennas, or who find ways to get better antennas for the weekend. In the 2008 contest, no effort was more enthusiastic than that of Tomas Magyla, VK2CCC. Tomas scouted out a remote location three hours' drive out of Sydney, and with the help of some Aussie "locals" (see photo) got his antenna installed just before sunset. Here's more of his story:

"I have never operated from such a high and open location on 160m... Was tempted to work QRP but decided to go in the 100W category to enjoy the pileups. Switched on IC-7000 and, literally, nothing heard, just VK3EGN who was flying a kite antenna 120m high (if I copied correctly); a huge signal at my place. Unfortunately just a few traces of W4 at about the noise floor which was quite shocking (it is summer time here in VK). Decided that a beverage to US would not hurt. Fiddling in the bush when it's dark is not the best idea in VK, especially knowing that VK is at the top of the most dangerous snakes and spiders chart. Anyway, got a short beverage connected which helped a little bit.

"About 2 hrs after the sunset K9DX and WØSD were coming at about 579 here, however to my big surprise they could not copy my callsign, just a half of it (VK2C??). The first QSO (and the last) was with KH6LC — under normal condx I used to work him with QRP without any problems. Kept listening for a little while but there were no improvement to signals from US. A few more stations appeared on the band that were reasonably loud — JA3, RAØ, HS, DU, but not W/VE. "



VK2CCC put in a lot of effort for his portable low power operation. The result? Just one contest QSO. At least he had some interesting helpers while installing the antennas!



The tall towers explain why Tomas, VK2CCC was so interested in operating from this remote location!

We're sorry that Tomas' adventure ended with poor conditions toward North America and only one QSO in the contest log, but he is undaunted and will surely do it again! This is just one of many stories about special efforts to get on the air for this contest—each of them showing how hams are inspired to get on the air and do the best they can. More are included in this writeup, but first, on to the results.

Multi-Operator

In this single-band contest, a "multi-op" entry can be one operator with spotting assistance, a few friends sharing the operating load at one of their stations, or a whole team of operators and equipment. The top four spots have representatives of all three styles. The top spot was captured by the KC1XX gang in New Hampshire. Operating from Matt Strelow's big station where the antenna systems are always being improved and refined, they made 1753 QSOs and collected 131 multipliers. Their comment? "Nice to see activity so high!"

The second place WE3C team from the Eastern Pennsylvania Section included three operators who found the same number of multipliers, but fewer QSOs, than the leaders. Out in Illinois, another big team at WB9Z captured third place, making the most QSOs of any multi-op entry and achieving a "personal best" result for that station. In fourth place is Charles Fulp, K3WW, showing his experience in the style of one operator plus spotting assistance.

As you can see in the Top Ten listing, this was a highly competitive category, with the remaining six stations having scores within an 11 percent spread.

Single Operator, High Power

"After some good results for DX on 160 in the weeks leading up to the CQWW contests and in the actual contests, I decided to try the ARRL 160 Contest for the first time in many years. The last time I did a full-time effort in the ARRL 160M Contest seems to have been 1974, my senior year in college, when I ran a sloper from the window of my 18th-floor dorm room..." reminisced Doug Grant, K1DG, whose renewed enthusiasm for Top Band resulted in the top spot in the High Power category. Doug operated from his Long Island, Maine vacation home, where proximity to salt water and a clear path toward Europe certainly helped his score. He also noted the high activity, "When I left my running frequency to tune the band, I managed about 75 QSOs and some new multipliers in 45 minutes—with QSOs up to 1878! Clear frequencies were hard to find and hold with the wall-to-wall activity."

The remainder of the High Power top finishers are a real "Who's Who" of 160 meter operators. This group exemplifies the value of experience on this unique band, aided by some extraordinary efforts in assembling effective stations. The east coast took the first three positions, with Peter Briggs, K3ZM and Krassy Petrov, K1LZ finishing second and third from Virginia and Eastern Massachusetts, respectively,. Fourth place finisher John Battin, K9DX in Illinois is the furthest west of the Top Ten group, and his 1,822 QSOs easily topped all competitors in this category.

Single Operator, Low Power

Working DX is a bit more difficult with low power and QRP, so the number of QSOs and ARRL/RAC multipliers have a bigger effect on scoring in these categories, compared to high power. With the stronger emphasis on domestic QSOs, these categories usually have a wide geographical spread among the top finishers. In the Low Power category, every station on the Top Ten is from a different section, reaching from north in Vermont to Texas in the south, from as far west as Montana to Virginia in the east.

At the top of this category is Julius Fazekas, N2WN in Tennessee. He notes that contesting is certainly fun, but there is more to it. "I play in quite a few contests of all sizes and while contesting is fun and I enjoy tweaking the station to do a bit better. What really makes a difference, for me, is the relationship I have with others who play in the same events and categories. The relationships forged due to that common point are what really makes it all worthwhile." Like many ham radio enthusiasts, Julius uses e-mail to enhance his on-air experience, trading notes on operating and antennas (or just staying in touch) with new and old friends.

Greg Clark, K9IG and Lajos "Lali" Laki, VE3NE captured the second and third place spots from Indiana and Ontario, while Gene Shea, KB7Q earned a fourth place finish from Montana. The remaining six places (and QTHs) include WA4PGM (VA), KØDI (NE), N1UR (VT), K1EP (EMA), WØUO (NTX) and ACØW (MN). Quite a noteworthy range of locations!

Single Operator, QRP

At the top of the QRP category is Glenn Johnson, WØGJ in Minnesota, followed by Mike Tessmer, K9NW, operating from Indiana. N8BB in Michigan, W3TS in Eastern PA and NØUR in Minnesota finish up the top five places. Although a central location seems to be an advantage for QRP competition, there were excellent performances in the western sections, with David Cuthbert, WX7G taking sixth place with his portable operation at the Great Salt Lake in Utah, followed closely by Gary Hembree, N7IR of Arizona in the seventh position.

Club Competition

Contest clubs are import sources of both encouragement and assistance. On 160 meters, technical suggestions and operating hints from fellow hams can really make a difference in the success of members who are new to the band, or have limited space for antennas.

In the 2008 contest, four clubs had enough entries to qualify for the Unlimited category. Two big eastern clubs topped this year's results, with the Yankee Clipper Contest Club capturing the gavel with members amassing more 7.7 million points. The Potomac Valley Radio Club earned the second spot, with the Society of Midwest Contesters finishing third, but showing the highest participation (76 entries). In the fourth spot is the Minnesota Wireless Association, adding to the activity level with 57 entries.

In the Medium category, the Frankford Radio Club's 32 entries totalled 3.8 million points to reach the top position. Reaching the second spot is the active and enthusiastic Contest Club Ontario, while the Tennessee Contest Group made it into the third position. The Mad River Radio Club, Northern California Contest Club, Florida Contest Group and the relatively new Alabama Contest Group all managed to reach at least 1 million total points.

At the top of the Local category was the Central Virginia Contest Club, with eight entries and more than a million total points. The Mother Lode DX/Contest Club (6 entries) and the Northern Rockies DX Association (4 entries) got their members involved, too!

Stories From The Antenna-Challenged Trenches

Doing "Whatever it Takes" for a Better Signal in the ARRL 160 Meter Contest

Because of the long wavelength (546 feet/166 meters), many active hams do not have full-size antennas for 160 meters, and some have no "permanent" antenna at all for this band. Every year, many antenna-challenged hams make an extra effort for this contest, displaying a wide range of enthusiasm, creativity, and sheer will! Here are a few of their stories, starting with two that had to be the most frustrating of them all:

From Igor, UA9CDC for the 8Q7DV DXpedition — "My story is pretty simple. We had to take all the antenna down by the 6th of December at 8Q7DV. That left us with the option to work for 2-3 hours in the beginning of ARRL 160 contest. We had two crazy ops getting up early at 4 o'clock in the morning and listening carefully. I must admit, conditions were very poor. Still we heard about 8-10 US stations being readable, but calling them was useless. They were all answering either local US or strong EU. Calling CQ for another 10-15 minutes was also a miss. The result is nil QSO. That was the end of the contest for us."

Brad, KV5V wrote — "As for the KV5V and KE5C effort... Worked several weekends setting posts for an elevated vertical/inverted-Vee with elevated radials, but just couldn't get it finished in time. Even worked most of the daylight hours on Saturday. Finally gave up and tried to hang an old dipole, which became hopelessly twisted as the strands in the wire began to unravel. No luck. The band was alive, and EU was pounding in on the Beverage. What a shame we couldn't get things together in time.

While we admire the enthusiasm they show for the 160 Meter Contest, we all feel their pain. Perhaps the following stories will prove to be more uplifting, especially the ones about getting on the air from restricted neighborhoods!

From John, NØJK — "I live in a 'no outside' antenna subdivision, with no trees either to put up wires here in Wichita, KS. So, to hand out a few points in the 160M contest, I bought a 100 ft. length of 24 ga. wire from the local hardware store for \$4 on Friday afternoon and taped it along side our house. Tossed the end up over the garage. Maximum height about 15 feet above ground. Ran a FT-897 (no CW filter) at 50 watts and a MFJ tuner. It actually loaded up OK on 160 Meters. Though the antenna is way too low to be effective on the Top Band, I figured I might work a couple of the 'big guns' with this setup. As dusk approached I turned on the radio and could hear many stations CQing away. Figured it would be pointless to call any before it got dark, but... KØPY KS went into the log at 2239 followed by K9CT IL at 2241 utc. This thing actually works! By 0410 UTC I had over 100 stations in the log by 'Search & Pounce.'"

Dan, NØTK has a similar story — "My story is that the last QSO I made on Sunday morning, about 30 minutes before local sunrise, was with JA3YBK. My setup is not all that great. Antenna is an inverted L of sorts, 30 feet up along a push-up fiberglass mast, and 60 feet of drooping horizontal section loosely tied to a tree in the back yard. Radials with clip lead ends are spread across the back yard, the longest of which are 70 feet. 100w of transmit power from an IC7000. Receive is on the transmit antenna. The antenna goes up at sunset and comes down at sunrise to keep the neighbors happy. Another story is having K1ZZ come back to my first try at staying put and calling CQ. It's always good to work Dave as we both grew up in ham radio in CT in the 1960s."

Craig, ACØDS has yet another "stealth antenna" story — "HOA restrictions and my miniscule property prohibit any permanent antennas, so designing a stealth solution for each contest is part of the process (and fun) for me. I've used a small inverted L the past couple of years and this year tried to improve it. As luck would have it, the week before the contest here was cold and snowy which didn't make the outside work terribly enjoyable. But I put down a much more extensive, but still modest, radial system consisting of 16 on-ground radials. Shortest was about

20 ft and the longest 70 ft. A 40 ft. SpiderBeam mast was used as the main support and a 30 ft Jackite pole was the support for the end of the horizontal segment. The plan was to measure the impedance at the base and design an L network as in years past, but the measurement indicated a resonance tantalizingly close to the upper end of 160 meters. So I tacked on an additional 7 feet downward from the far end (inverted U) and, miracle-of-miracles, found the resonance at 1.835 with 1.8 to 1 SWR. At this point I felt that the stars might be aligned for my lowly (literally) inverted L. To minimize the impact to the neighbors I put this up at sunset each evening and took it down at dawn. Could do either in less than 10 minutes. On a whim I put up a rudimentary 3 meter diameter fixed orientation receiving loop on Friday afternoon. It received 90% of the stations that the inverted L did and was much easier on the ears. Had a great time during the contest, and good results for my modest station, more than doubling my previous best score. All that tramping around in the snow the previous few days was worth it."

Vitor PY2NY — "When I was preparing my station for CQWW CW Contest this year, at my 12m x 30m urban space and home at Jaboticabal, one of the alternatives would be taking the DX-A Alpha Delta Sloper for 160-80-40m and change it for a inverted Vee in 80m only, just because 160m is almost impossible here. PY2ZXU Thomas told me to stay with the sloper because one or two multipliers on that band could be important. Then came the ARRL 160m Contest!

"The most important piece to put me on the air for the ARRL 160m Contest was an antenna tuner totally built by a friend of mine PU2MAS, Marcinio. My old MFJ 962 was unable to be used and Marcinio took the watt-swr-meter from that rig to use in the new home made AT. And was a great feeling operating on 160m with 400w and get 14 answers!! I just did the contest in worst hours and with no more than 5 hours of total S&P activity, but these 14 contacts with my small station made me very happy, really!!" [Vitor, your story makes me happy, too, since I was one of those 14 contacts! —Gary, K9AY]



A helping hand from a friend really makes a difference! Vitor, PY2NY used this tuner built by Marcinio, PU2MAS to get on the air for the contest.

Dave Cuthbert, WX7G had a very interesting QRP portable setup — "After years of flailing away in the ARRL 160 Meter Contest with small antennas and less than ideal locations, I finally was presented with a prime topband QTH. Having recently moved to the Salt Lake, Utah area, and driving by the Great Salt Lake on my way to work five days a week, I kept thinking what a great ground the lake would make. So, armed with wire, balloons, a tank of helium and a new radio I parked on the road connecting Stansbury Island to the mainland and put up a 130-foot wire vertical. With very salty water for miles in most directions I found I didn't have to work too

hard to make contacts with 5 watts. This antenna and the great far-field ground was calculated to be 12 dB above my best antenna/QTH to date! The first night yielded 300 QSOs and was not unlike shooting fish in a barrel. The second night was a slog (but a fun slog) with 100 more stations added to the log. Operating from a car has its advantages; one being there is no comfortable bed calling one to sleep. Between the great antenna and my goal of approaching the score of N7IR, I managed to do two all-nighters."

Dave met his personal competitive goal, finishing one place ahead of Gary, N7IR. I'll bet Gary finds a way to improve his station next time!

Soapbox Samples

To underscore the combination of fun and challenge of the 160 meter band, here a few short quotes from Soapbox posts on the ARRL Web site and the "3830" reflector:

Bob, AD5VJ — "This was the best I have done in an ARRL 160 contest and enjoyed it more that I can say in words. The QSB made for some interesting contacts, some that I never thought I would make at all, but finally did."

Jason, N8XE — "What a way to start off the Christmas season: The ARRL 160M contest. This year it was c-c-cold and snowing at the QTH. A perfect setting for topband contesting. I did not get to operate as much as I would have liked because of Holiday activities, but when I did get to operate, it sure was fun! 160M is quickly becoming one of my favorite bands and any excuse to be on topband is a good one."

Jorge, CX6VM — "Friday night condx were excellent, with incredible low QRN. I set a goal of 100 QSOs. First night I finished with 75 QSOs. Next night condx also very good and it was incredible to reach 173 QSOs!"

Ed, K1EP — "Wow, great contest! Just finished putting up my new stealth antenna before the contest, trimming it on Friday."

Vincent, K1RM — "I've been contesting for 45 years and this is the first time I have operated in the 160 contest. Great fun! I will have to get some better receiving antennas to compete. Next project!"

Bill, K6WSC — "The 2008 ARRL 160 Meter Contest was my first time on 160. The center of my 82 foot long 160 meter loaded (shortened) horizontal dipole is only thirteen (13) feet above the ground. I worked 63 stations in 18 different ARRL sections. My 160 experience was surprisingly good. Thanks for the QSOs."

Jeff, N8II — "Wow, what great activity! ...but oh the QRM!"

John, KØTG for the WØAIH crew — "A new QSO record for us. Last year we had 1434 QSOs and this year we hit 1627! I did not know what to expect with the solar reports before the contest, but conditions were better than I expected."

John, N7ON — "Conditions (and score) down from last year, and higher noise. Still, 160m contests are always fun."

A Little Analysis

When conditions are only "fair" things get interesting. Many post-contest reports noted QSB, rising and falling noise levels, and propagation disappearing in certain directions for a while. For some, the first night was best, while others thought the second night provided the best conditions. It's all part of the unpredictability of the 160 meter band!

The top scores were just a little less than the 2007 contest, but many stations reported "personal best" scores. High activity certainly compensates for a drop in conditions, but there was still plenty of DX to be worked for those who persevered. My personal observation from the Midwest U.S. is that conditions were up-and-down to Europe — and when they were "up" signals were very good. Unfortunately, if an operator chose to look for DX during a "down" period, the band would seem nearly dead.

The consistent bad news was conditions toward the west from the U.S., including Asia and Oceania. The number stations worked in Japan, Pacific Ocean area, New Zealand and Australia was way down from recent years' contests. In this regard, the 2008 ARRL 160 Meter Contest simply had bad timing, since conditions were very good before the contest, and would be good again in following weeks.

But again, high activity keeps things fun! The first few hours of this contest are crazy — thousands of serious contesters, 160 meter afficionados, and various casual operators are packed into less than 100 kHz. This is enough action to satisfy the "video game" style contesters, and keep all the others on their toes. The conditions were certainly good enough to provide some DX for everyone, with good participation from Europe and some spirited efforts from Central America and the Caribbean, South America, Africa, Asia and the Pacific.

The Last Word

The 160 meter band remains a fascinating part of the amateur spectrum! It can be frustrating when conditions are poor or noise is high, and exhilarating when DX is plentiful and there is lots of activity. The 2008 ARRL 160 Meter Contest definitely generated lots of activity, with 507 Low Power entries, 448 High Power entries, 249 Multi-Operator entries and 77 QRP entries — a record number of logs were submitted. Also, more contestants made 1,000+ QSOs than in 2007, when conditions were generally better. Maybe best of all is that CW is clearly alive and well on the 160 meter band!

Top Ten

W3TS 66,856 NØUR 66,688 WX7G 54,924 N7IR 52,895 N1BUG 49,662 W4TMR 49,434 W7JI 47,192 Single Operator, Low Power 100,538 N2WN 213,072 K9IG 207,270 VE3NE 190,538 KB7Q 187,912 WA4PGM 177,644 KØDI 177,633 N1UR 168,432 K4EP 168,432 WØUO 159,375 ACØW 147,120 Single Operator, High Power 147,120 K1DG 573,780 K3ZM 565,370	W/VE			
K9NW 86,691 N8BB 73,584 W3TS 66,856 NØUR 66,688 WX7G 54,924 N7IR 52,895 N1BUG 49,662 W4TMR 49,434 W7JI 47,192 Single Operator, Low Power 1 N2WN 213,072 K9IG 207,270 VE3NE 190,538 KB7Q 187,912 WA4PGM 177,633 N1UR 168,432 K0DI 177,633 N1UR 168,432 WØUO 159,375 ACØW 147,120 Single Operator, High Power 147,120 Single Operator, High Power 147,120 K1DG 573,780 K3ZM 565,370 K1LZ 545,024 K9DX 526,320 VE3EJ 481,203 W4MYA 479,875	Single Operator, QRP			
N8BB 73,584 W3TS 66,856 NØUR 66,688 WX7G 54,924 N7IR 52,895 N1BUG 49,662 W4TMR 49,434 W7JI 47,192 Single Operator, Low Power 147,192 N2WN 213,072 K9IG 207,270 VE3NE 190,538 KB7Q 187,912 WA4PGM 177,644 KØDI 177,633 N1UR 168,432 K1EP 168,432 WØUO 159,375 ACØW 147,120 Single Operator, High Power 147,120 K1DG 573,780 K3ZM 565,370 K1LZ 545,024 K9DX 526,320 VE3EJ 481,203 W4MYA 479,875	WØGJ	97,881		
W3TS 66,856 NØUR 66,688 WX7G 54,924 N7IR 52,895 N1BUG 49,662 W4TMR 49,434 W7JI 47,192 Single Operator, Low Power 1 N2WN 213,072 K9IG 207,270 VE3NE 190,538 KB7Q 187,912 WA4PGM 177,633 N1UR 168,432 K1EP 168,432 WØUO 159,375 ACØW 147,120 Single Operator, High Power 147,120 K1DG 573,780 K3ZM 565,370 K1LZ 545,024 K9DX 526,320 VE3EJ 481,203 W4MYA 479,875	K9NW	86,691		
NØUR 66,688 WX7G 54,924 N7IR 52,895 N1BUG 49,662 W4TMR 49,434 W7JI 47,192 Single Operator, Low Power 1 N2WN 213,072 K9IG 207,270 VE3NE 190,538 KB7Q 187,912 WA4PGM 177,644 KØDI 177,633 N1UR 168,432 WØUO 159,375 ACØW 147,120 Single Operator, High Power K K1DG 573,780 K3ZM 565,370 K1LZ 545,024 K9DX 526,320 VE3EJ 481,203 W4MYA 479,875	N8BB	73,584		
WX7G 54,924 N7IR 52,895 N1BUG 49,662 W4TMR 49,434 W7JI 47,192 Single Operator, Low Power 177,02 N2WN 213,072 K9IG 207,270 VE3NE 190,538 KB7Q 187,912 WA4PGM 177,644 KØDI 177,633 N1UR 168,432 K1EP 168,432 WØUO 159,375 ACØW 147,120 Single Operator, High Power 147,120 K1DG 573,780 K3ZM 565,370 K1LZ 545,024 K9DX 526,320 VE3EJ 481,203 W4MYA 479,875	W3TS	66,856		
N7IR 52,895 N1BUG 49,662 W4TMR 49,434 W7JI 47,192 Single Operator, Low Power N2WN 213,072 K9IG 207,270 VE3NE 190,538 KB7Q 187,912 WA4PGM 177,644 KØDI 177,633 N1UR 168,432 K1EP 168,432 WØUO 159,375 ACØW 147,120 Single Operator, High Power 573,780 K1DG 573,780 K3ZM 565,370 K1LZ 545,024 K9DX 526,320 VE3EJ 481,203 W4MYA 479,875	NØUR	66,688		
N1BUG 49,662 W4TMR 49,434 W7JI 47,192 Single Operator, Low Power N2WN 213,072 K9IG 207,270 VE3NE 190,538 KB7Q 187,912 WA4PGM 177,644 KØDI 177,633 N1UR 168,432 WØUO 159,375 ACØW 147,120 Single Operator, High Power K1DG 573,780 K3ZM 565,370 K1LZ 545,024 K9DX 526,320 VE3EJ 481,203 W4MYA 479,875	WX7G	54,924		
W4TMR 49,434 W7JI 47,192 Single Operator, Low Power N2WN 213,072 K9IG 207,270 VE3NE 190,538 KB7Q 187,912 WA4PGM 177,644 KØDI 177,633 N1UR 168,432 K1EP 168,432 WØUO 159,375 ACØW 147,120 Single Operator, High Power K1DG 573,780 K3ZM 565,370 K1LZ 545,024 K9DX 526,320 VE3EJ 481,203 W4MYA 479,875	N7IR	52,895		
W7JI 47,192 Single Operator, Low Power N2WN 213,072 K9IG 207,270 VE3NE 190,538 KB7Q 187,912 WA4PGM 177,644 KØDI 177,633 N1UR 168,432 K1EP 168,432 WØUO 159,375 ACØW 147,120 Single Operator, High Power K1DG 573,780 K3ZM 565,370 K1LZ 545,024 K9DX 526,320 VE3EJ 481,203 W4MYA 479,875	N1BUG	49,662		
Single Operator, Low Power N2WN 213,072 K9IG 207,270 VE3NE 190,538 KB7Q 187,912 WA4PGM 177,644 KØDI 177,633 N1UR 168,432 K1EP 168,432 WØUO 159,375 ACØW 147,120 Single Operator, High Power 565,370 K1LZ 545,024 K9DX 526,320 VE3EJ 481,203 W4MYA 479,875	W4TMR	49,434		
N2WN 213,072 K9IG 207,270 VE3NE 190,538 KB7Q 187,912 WA4PGM 177,644 KØDI 177,633 N1UR 168,432 K1EP 168,432 WØUO 159,375 ACØW 147,120 Single Operator, High Power 565,370 K1LZ 545,024 K9DX 526,320 VE3EJ 481,203 W4MYA 479,875	W7JI	47,192		
K9IG 207,270 VE3NE 190,538 KB7Q 187,912 WA4PGM 177,644 KØDI 177,633 N1UR 168,432 K1EP 168,432 WØUO 159,375 ACØW 147,120 Single Operator, High Power 1000000000000000000000000000000000000	Single Operator, Low Power			
VE3NE 190,538 KB7Q 187,912 WA4PGM 177,644 KØDI 177,633 N1UR 168,432 K1EP 168,432 WØUO 159,375 ACØW 147,120 Single Operator, High Power 147,120 K1DG 573,780 K3ZM 565,370 K1LZ 545,024 K9DX 526,320 VE3EJ 481,203 W4MYA 479,875	N2WN	213,072		
KB7Q 187,912 WA4PGM 177,644 KØDI 177,633 N1UR 168,432 K1EP 168,432 WØUO 159,375 ACØW 147,120 Single Operator, High Power 147,120 K1DG 573,780 K3ZM 565,370 K1LZ 545,024 K9DX 526,320 VE3EJ 481,203 W4MYA 479,875	K9IG	207,270		
WA4PGM 177,644 KØDI 177,633 N1UR 168,432 K1EP 168,432 WØUO 159,375 ACØW 147,120 Single Operator, High Power 147,120 K1DG 573,780 K3ZM 565,370 K1LZ 545,024 K9DX 526,320 VE3EJ 481,203 W4MYA 479,875	VE3NE	190,538		
KØDI177,633N1UR168,432K1EP168,432WØUO159,375ACØW147,120Single Operator, High Power147,120K1DG573,780K3ZM565,370K1LZ545,024K9DX526,320VE3EJ481,203W4MYA479,875	KB7Q	187,912		
N1UR 168,432 K1EP 168,432 WØUO 159,375 ACØW 147,120 Single Operator, High Power 147,120 K1DG 573,780 K3ZM 565,370 K1LZ 545,024 K9DX 526,320 VE3EJ 481,203 W4MYA 479,875	WA4PGM	177,644		
K1EP 168,432 WØUO 159,375 ACØW 147,120 Single Operator, High Power 147,120 K1DG 573,780 K3ZM 565,370 K1LZ 545,024 K9DX 526,320 VE3EJ 481,203 W4MYA 479,875	KØDI	177,633		
WØUO159,375ACØW147,120Single Operator, High PowerK1DG573,780K3ZM565,370K1LZ545,024K9DX526,320VE3EJ481,203W4MYA479,875	N1UR	168,432		
ACØW147,120Single Operator, High PowerK1DG573,780K3ZM565,370K1LZ545,024K9DX526,320VE3EJ481,203W4MYA479,875	K1EP	168,432		
Single Operator, High Power K1DG 573,780 K3ZM 565,370 K1LZ 545,024 K9DX 526,320 VE3EJ 481,203 W4MYA 479,875	WØUO	159,375		
K1DG573,780K3ZM565,370K1LZ545,024K9DX526,320VE3EJ481,203W4MYA479,875	ACØW	147,120		
K3ZM565,370K1LZ545,024K9DX526,320VE3EJ481,203W4MYA479,875	Single Operator, High Power			
K1LZ545,024K9DX526,320VE3EJ481,203W4MYA479,875	K1DG	573,780		
K9DX526,320VE3EJ481,203W4MYA479,875	K3ZM	565,370		
VE3EJ 481,203 W4MYA 479,875	K1LZ	545,024		
W4MYA 479,875	K9DX	526,320		
	VE3EJ	481,203		
W1UE 479,125	W4MYA	479,875		
	W1UE	479,125		

1	
K1ZZ	436,158
VE3EY	407,480
K1LT	386,631
Multioperator	
KC1XX	570,112
WE3C	510,245
WB9Z	482,306
K3WW	461,264
NO2R	447,000
W2GD	443,300
K5ZG	442,062
N1LN	422,520
W2FU	421,776
N3KS	402,456
DX	
Single Operator, QRP	
ER2RM	24
JH4UYB	8
Single Operator, Low Power	
CU2AF	2,438
OLØA (OK1CZ, op)	1,394
EI4HQ	1.200
··×	1,360
DL2KQ	1,360
DL2KQ	1,080
DL2KQ JE1SPY	1,080 672
DL2KQ JE1SPY OK6Y (OK2PTZ, op)	1,080 672 660
DL2KQ JE1SPY OK6Y (OK2PTZ, op) EA2SW	1,080 672 660 576
DL2KQ JE1SPY OK6Y (OK2PTZ, op) EA2SW OK2EQ	1,080 672 660 576 432
DL2KQ JE1SPY OK6Y (OK2PTZ, op) EA2SW OK2EQ JM2RUV	1,080 672 660 576 432 286
DL2KQ JE1SPY OK6Y (OK2PTZ, op) EA2SW OK2EQ JM2RUV	1,080 672 660 576 432 286

ZF2AH	142,758
ON4UN	55,332
F6CWN (F6FGZ, op)	53,456
FM5CD	53,268
XE2S	50,310
PJ2DX (WØCG, op)	36,162
OM2VL	34,300
G3LET	33,500
G4AMT	26,100
Multioperator	
ТМ6М	39,500
E77DX	28,200
ON4WW	19,872
JA3YBK	7,552
RWØCWA	6,612
DK2FG	6,144
F4DNW	5,504
PI4TUE (PC5A, op)	2,944
RL3FT	2,346
F5UFX	1,302

	Score	Entries
Unlimited Category		
Yankee Clipper Contest Club	7,711,153	60
Potomac Valley Radio Club	6,154,139	73
Society of Midwest Contesters	5,003,334	76
Minnesota Wireless Assn	3,172,424	57

Affiliated Club Competition

Medium Category		
Frankford Radio Club	3,838,297	32
Contest Club Ontario	2,743,694	32
Tennessee Contest Group	2,091,975	33
Mad River Radio Club	1,730,265	20
Northern California Contest	1,588,103	48
Florida Contest Group	1,219,221	14
Alabama Contest Group	1,071,655	14
Rochester (NY) DX Assn	958,802	10
South East Contest Club	941,314	14
North Texas Contest Club	698,976	9
Western New York DX Assn	625,357	8
Hudson Valley Contesters and	524,705	10
Central Texas DX and Contest	490,400	5
Contest Club Du Quebec	489,003	9
Central Arizona DX Assn	414,698	11
Southern California Contest	324,476	12
Willamette Valley DX Club	285,564	4
Carolina DX Assn	284,217	4
North Coast Contesters	283,191	4
Kentucky Contest Group	239,673	4
Louisiana Contest Club	224,588	3
Utah DX Assn	171,850	3
Order of Boiled Owls of New	133,067	3
Oklahoma DX Assn	126,602	4
Western Washington DX Club	122,323	8
CTRI Contest Group	86,103	6
Allegheny Valley Radio Association	76,016	3
Local Category		
Central Virginia Contest Club	1,004,341	8
Mother Lode DX/Contest Club	367,830	6
Northern Rockies DX Association	351,809	4
Spokane DX Association	179,752	5

Low Country Contest Club	165,429	5
New Mexico Big River	141,487	4
Maritime Contest Club	134,220	7
Sterling Park ARC	123,942	3
Redmond Top Key Contest Club	123,800	3
West Park Radiops	106,263	4

Single Operator QRP				
Division	Call	Score		
Atlantic	W3TS	66,856		
Central	K9NW	86,691		
Dakota	WØGJ	97,881		
Delta	KW4JS	12,560		
Great Lakes	N8BB	73,584		
Hudson	KR2Q	23,130		
Midwest	W7JI	47,192		
New England	N1BUG	49,662		
Northwestern	KX7L	4,420		
Pacific	K6EI	16,092		
Roanoke	W4TMR	49,434		
Rocky Mountain	WX7G	54,924		
Southeastern	N4AX	16,611		
Southwestern	N7IR	52,895		
West Gulf	W5ESE	6,592		
Canada	VE7VV	17,300		
Single Operator	Low Power			
Division	Call	Score		
Atlantic	K2ZR	117,238		

Division Leaders By Category

K9IG	207,270
ACØW	147,120
N2WN	213,072
	142,236
	75,348
	177,633
K1EP	168,432
KB7Q	187,912
NT6K	105,612
WA4PGM	177,644
1	107,569
W4AA	100,464
W7RH	115,619
WØUO	159,375
VE3NE	190,538
High Power	
Call	Score
W3BGN	383,933
K9DX	526,320
WØSD (WØDB, op)	350,168
N5RR	325,038
K1LT	386,631
N2ED	113,100
NØTT	240,640
K1DG	573,780
N6TR	235,405
	1 (0, 100
W7RN (W6EU, op)	169,420
W7RN (W6EU, op) K3ZM	169,420 565,370
K3ZM	565,370
K3ZM WØUA	565,370 255,668
K3ZM WØUA K4TD	565,370 255,668 300,991
	ACØW N2WN K4FT K2UF KØDI K1EP KB7Q NT6K WA4PGM ACØDS W4AA W7RH WØUO VE3NE High Power Call W3BGN K9DX WØSD (WØDB, op) N5RR K1LT N2ED NØTT K1DG N6TR

Multioperator				
Division	Call	Score		
Atlantic	WE3C	510,245		
Central	WB9Z	482,306		
Dakota	KDØS	171,108		
Delta	K5FMC	189,371		
Great Lakes	K5ZG	442,062		
Hudson	NO2R	447,000		
Midwest	NØNI	348,140		
New England	KC1XX	570,112		
Northwestern	K7OX	129,444		
Pacific	N6RO	131,064		
Roanoke	N1LN	422,520		
Rocky Mountain	NI5T	166,240		
Southeastern	N4PN	266,832		
Southwestern	N7DD	166,584		
West Gulf	AD5VJ	28,446		
Canada	VY2/N3DXX	344,971		

Regional Scores

A = QRP, B = Single Op Low Power, C = Single Op High Power, D = Multioperator

Northeast Region (New England, Hudson and Atlantic Divisions; Maritime and Quebec Sections)				
	Score	QSO	Mult	Class
W3TS	66,856	554	61	A
N1BUG	49,662	386	62	A
AA1CA	40,915	419	49	A
K3TW	38,178	347	54	A

K2QO	28,567	273	53	A
N1UR	168,432	915	88	В
K1EP	168,432	907	88	В
N1IX	118,989	701	81	В
K2ZR	117,238	797	73	B
N3GJ	111,750	738	75	В
K1DG	573,780	1621	131	C
K1LZ	545,024	1584	128	С
W1UE	479,125	1434	125	С
K1ZZ	436,158	1464	123	С
W3BGN	383,933	1294	121	С
KC1XX	570,112	1753	131	D
WE3C	510,245	1567	131	D
K3WW	461,264	1528	127	D
di seconda d				
NO2R	447,000	1455	125	D
NO2R W2GD	447,000 443,300	1455 1577	125 124	
W2GD Southeast Region	443,300	1577	124	
W2GD	443,300	1577	124	
W2GD Southeast Region	443,300 putheastern	1577 n Divis	124 ions)	D Class
W2GD Southeast Region (Delta, Roanoke and So	443,300 Dutheastern Score	1577 n Divis QSO	124 ions) Mult	D Class A
W2GD Southeast Region (Delta, Roanoke and So W4TMR	443,300 outheastern Score 49,434	1577 n Divis QSO 373	124 ions) Mult 66	D Class A A
W2GD Southeast Region (Delta, Roanoke and So W4TMR K4ORD	443,300 Dutheastern Score 49,434 37,077	1577 n Divis QSO 373 360	124 ions) Mult 66 51	D Class A A A A
W2GD Southeast Region (Delta, Roanoke and So W4TMR K4ORD N4AX	443,300 outheastern Score 49,434 37,077 16,611	1577 n Divis QSO 373 360 175	124 ions) Mult 66 51 49	D Class A A A A
W2GD Southeast Region (Delta, Roanoke and So W4TMR K4ORD N4AX KW4JS	443,300 outheastern Score 49,434 37,077 16,611 12,560	1577 n Divis QSO 373 360 175 160	124 ions) Mult 66 51 49 40	D Class A A A A A
W2GD Southeast Region (Delta, Roanoke and So W4TMR K4ORD N4AX KW4JS	443,300 outheastern Score 49,434 37,077 16,611 12,560	1577 n Divis QSO 373 360 175 160	124 ions) Mult 66 51 49 40	D Class A A A A A A A
W2GD Southeast Region (Delta, Roanoke and So W4TMR K4ORD N4AX KW4JS WK4P	443,300 outheastern Score 49,434 37,077 16,611 12,560 12,423	1577 n Divis QSO 373 360 175 160 149	124 ions) Mult 66 51 49 40 41	D Class A A A A A A A
W2GD Southeast Region (Delta, Roanoke and So W4TMR K4ORD N4AX KW4JS WK4P N2WN	443,300 outheastern Score 49,434 37,077 16,611 12,560 12,423 213,072	1577 n Divis QSO 373 360 175 160 149 1120	124 ions) Mult 666 511 49 40 41	D Class A A A A A A B B B
W2GD Southeast Region (Delta, Roanoke and So W4TMR K4ORD N4AX KW4JS WK4P N2WN WA4PGM	443,300 outheaster Score 49,434 37,077 16,611 12,560 12,423 213,072 177,644	1577 Divis QSO 373 360 175 160 149 1120 977	124 ions) Mult 66 51 49 40 41 41 92 89	D Class A A A A A A B B B B
W2GD Southeast Region (Delta, Roanoke and So W4TMR K4ORD N4AX KW4JS WK4P N2WN WA4PGM WO4O	443,300 outheastern Score 49,434 37,077 16,611 12,560 12,423 213,072 177,644 111,160	1577 Divis QSO 373 360 175 160 149 1120 977 792	124 ions) Mult 666 51 49 40 41 41 92 89 70	D Class A A A A A A B B B B B B

K3ZM	565,370	1692	130	C
W4MYA	479,875	1632	125	С
N5RR	325,038	1434	109	С
K4TD	300,991	1321	107	С
WX4G	262,182	1099	111	С
N1LN	422,520	1589	120	D
AA4NC	315,280	1321	112	D
N4PN	266,832	1256	102	D
W4DR	206,664	802	109	D
N3UA	199,842	707	114	D
Central Region				
(Central and Great Lak	es Divisio	ns; On	tario S	ection)
	Score	QSO	Mult	Class
K9NW	86,691	606	71	A
N8BB	73,584	660	56	A
W8VE	17,808	213	42	A
W9LO	15,826	197	41	A
VE3WZ	14,490	176	42	A
K9IG	207,270	1137	90	В
VE3NE	190,538	978	94	В
KF9D	143,528	927	77	В
K4FT	142,236	865	81	В
NE9U	141,588	865	81	В
K9DX	526,320	1822	129	С
VE3EJ	481,203	1590	127	С
VE3EY	407,480	1478	122	С
K1LT	386,631	1455	119	С
К9АҮ	329,616	1456	108	С
<u>.</u>				
WB9Z	482,306	1832	121	D
K5ZG	442,062	1651	123	D
	1	1	1	

K8CC	344,877	1482	111	D		
WØAIH	338,232	1609	102	D		
W9IU	265,776	1324	98	D		
Midwest Region (Dakota, Midwest, Rocky Mountain and West Gulf Divisions; Manitoba and Saskatchewan Sections)						
	Score	QSO	Mult	Class		
WØGJ	97,881	627	79	A		
NØUR	66,688	523	64	A		
WX7G	54,924	400	69	A		
W7JI	47,192	356	68	A		
KIØII	18,810	179	55	A		
	4	4055				
KØDI	177,633	1093	81	B		
WØUO	159,375	926		В		
ACØW	147,120	915		В		
NC7W	140,371	916		В		
N5OE	120,633	758	79	B		
K5NA	373,520	1542	112	C		
NR5M (NM5M, op)	361,600	1469	1	C		
WØSD (WØDB, op)	350,168	1631	104	-		
KØSR	270,908	1417	94	I		
WØUA	255,668	1313	92	С		
NØNI	348,140	1622	103	D		
WØNO	310,373	1483	101	D		
KDØS	171,108	1019	84	D		
NI5T	166,240	1013	80	D		
KØRC	157,358	953	82	D		
West Coast Region (Pacific, Northwestern and Southwestern Divisions; Alberta, British Columbia and NWT Sections)						
	Score	QSO	Mult	Class		
N7IR	52,895	367	71	A		

17,300	174	50	А
16,092	226	36	А
12,996	184	36	А
9,120	117	40	А
187,912	1125	83	В
115,619	665	83	В
105,612	660	78	В
87,549	556	77	В
83,148	511	78	В
235,405	1235	89	С
169,420	946	86	С
148,764	848	84	С
137,615	799	85	С
130,745	787	79	С
166,584	916	88	D
131,064	714	86	D
129,444	754	84	D
115,784	696	82	D
112,000	549	80	D
	16,092 12,996 9,120 187,912 115,619 105,612 87,549 83,148 235,405 169,420 148,764 137,615 130,745 130,745 130,745	16,09222612,9961849,1201179,120117187,9121125115,619665105,61266087,54955683,148511235,4051235169,420946148,764848137,615799130,745787166,584916131,064714129,444754115,784696	16,0922263612,996184369,120117409,12011740187,912112583115,61966583105,6126607887,5495567783,14851178235,405123589169,42094686148,76484884137,61579985130,74578779166,58491688131,06471486129,44475484115,78469682