



ARRL IARU HF World Championship 2019 Full Results

By Bob Raymond, WA1Z (bobraymondwa1z@gmail.com)

Now in its 34th year, activity in the IARU HF World Championship continues to be stronger than ever with over 4,000 logs submitted for the 8th consecutive year.

While this mid-year classic has earned its spot as one of the major worldwide contests of the year, the IARU HF World Championship is a bit of an outlier on the calendar. July can be a challenging month for HF propagation along east-west paths in the Northern Hemisphere the higher you go in the HF spectrum. The maximum-usable-frequency (MUF) is usually much lower along these paths than what we experience in the winter months. However, one saving grace is that July is a prime month for Sporadic-E propagation in the Northern Hemisphere. This propagation mode can happen at any time of the solar cycle and has the potential to bolster 15- and 10-meter contest numbers. This makes IARU HF special in its own way, keeping thousands of likeminded radiosport enthusiasts coming back to participate in this great contest, often proving that propagation isn't always as bad as it seems.

W/VE Highlights

Sporadic-E openings occurred on 10 meters between North America and Europe this year and were welcomed by those who were situated geographically to detect them. The path to Europe extended to parts of Texas where Dave, K5GN (operating from W5KU), was able to make about a dozen QSOs across the Atlantic on his way to finishing first in the Midwest Region's Mixed Mode, High Power standings.

Just to Dave's east, folks along the Gulf of Mexico had been dealing with Barry, a days-old, flood-producing tropical storm that turned into a Category 1 hurricane on Saturday as it made landfall in Louisiana. "QRN was miserable 20m - 160m with Barry churning up through Louisiana," Dave reported on [3830scores.com](https://www.3830scores.com), "thank goodness for Es - it made 15 and 10 interesting where the noise was inside the first hop."

As his luck of location would have it, Dave finished with the highest number of 10 meter QSO points in the United States for a non-Headquarters or Special station, working 3-point QSOs with stations on the eastern seaboard as quickly as propagation allowed.



Single Operator, CW Only, High Power World Champion, Phil, KT3Y, at the controls of KP2M (photo courtesy of KT3Y)

Dave's skip zone fortune was of little consequence to those on the Gulf Coast dealing with the flooding, wind and power outages. However, Louisiana resident Vic, N8OO, managed to stay on the air operating on generator power in an impressive 24-hour effort. He finished in second place in the Unlimited, Mixed Mode, High Power category behind, Victor, VA2WA.

Sporadic-E did not reach out much beyond Texas to the dismay of the Midwest Region's CW Only, High Power leader, Steve, N2IC, who reported on [3830scores.com](https://www.3830scores.com), "very little Sporadic-E, resulting in poor 10 and 15 meter numbers. It was all 20 meters," he continued, "almost all USA/VE, with a little Europe during mid-afternoon."

Indeed, 20 meters remains the go-to band during much of the contest period for many around the globe. On the other bands where openings are marginal or short, sometimes you only have a few minutes to capitalize on an opening to a certain part of the world. Being ready for those fleeting moments is critical in a 24-hour contest when you may have one shot to capture them. As sunset neared his QTH in British Columbia, David, VE7DZO, moved to 40 meters and was treated to “a good number of Europeans ... which I was not expecting,” according to his post on 3830scores.com. There is very little common path of darkness between David’s QTH at 54-degrees latitude and Europe. In July, by the time sunset reaches his QTH, the sun has risen in most of Europe. While 40-meter propagation can be sustained for a couple hours on each side of the day-night terminator, David’s timely move resulted in several multipliers in a 15-minute opportunity.

In the West Coast Region, the name of the game is capitalizing on 3-point QSOs with stations in the densely populated East Coast of North America and 5-point contacts to East Asia. No better example of such an effort can be found in the log of Mixed Mode, High Power, West Coast regional champion NO6T, operated by Axel, KI6RRN. Operating from the fine station of WA6TQT, Axel finished with the most QSOs of any Single Operator (including Unlimited) in the United States and Canada with 2,778. An impressive 708 QSOs were completed outside of North America, including nearly 200 to Europe, which anyone from Zone 6 will tell you can be tough work.

Long distance contacts, such as nabbing European 5-pointers from the West Coast, require an exercise in persistence as pointed out by the region’s CW Only, High Power leader Mike, N7MH (operating from W6YX). Mike heard European stations on 20 meters earlier in the day, but reported on 3830scores.com, “just after sunset 20 was filled with loud Europeans and I managed to work all of the HQ stations that were not hearing me earlier.”

Certainly, many things have to go right in order for a two-way contact to be completed. Often we can hear a station that cannot hear us – sometimes referred to as “one-way propagation.” At a minimum, both stations need sufficient antenna gain at both ends of the circuit to complete a QSO. Propagation characteristics also have the potential to change within the same opening between two points allowing contacts that were not quite possible one moment to be possible at a later time. Sometimes, you just have to wait until stations turn their antennas in your direction!

When it all comes together, amazing contacts can be made without big amplifiers and tall arrays. CW QRP enthusiast Paul, W6MZ, described in his soapbox report when conditions peaked on 20 meters during his local evening hours (0130-0430Z) he worked “Spain, England, Sweden, and Russia from California with only 4 watts and a 2-element Yagi up 45 feet.”

Jim, K8MR, even took some of his Florida QSO Party mobile antennas with him while visiting family on Cape Cod, Massachusetts, and managed to work well over 100 DX stations with “Hamsticks” on top of his Toyota Prius.



Paul, VE5/WB9QAF, operating CW QRP from his cabin at Reindeer Lake, Saskatchewan. (photo courtesy of WB9QAF)

It was an all-Canada affair at the top of the Mixed Mode standings this year. In a close race for first place in Mixed Mode, High Power, John, VE3EJ, beat out Rich, NN3W (operating at N3HBX), and Phil, VE3AT. When you’re in a close competition, every QSO and multiplier can be critical to stay in the hunt. In his 3830scores.com post, Rich reminds us that asking stations to QSY to other open bands for multiplier credit is a great technique to boost the score. Rich took an opportunity to ask some stations in South America to try 160 meters and it worked. “[I] didn’t think I’d have the gumption to do that in July!” he says. Passing stations to other bands is an important strategy in a 24-hour contest. You have one chance to get it right! There is no second day to pick up missed multipliers.

The charge from the Great White North continued with Unlimited, Mixed Mode, High Power honors going to Victor, VA2WA, and Mixed Mode, Low Power won by Gilles, VA2EW. Doug, VA3DF, finished second in the Unlimited, Mixed Mode, Low Power category behind Scott, NE9U.

Scott did a Single Operator Two Radio (SO2R) operation from his three-dipole station in Wisconsin. “The fantastic conditions on 10 and 15 the guys to east and south reported never made it to Western Wisconsin I guess....not so great on 20 until later in the afternoon,” he says on his 3830scores.com post, “[b]ut this was my best score out of the three IARUs I’ve participated in.”

A big part of Scott’s success was not letting his modest station convince him he could not call CQ himself. Scott focused on North American QSOs at the start while waiting for Europeans to turn their attention towards North America later in his afternoon. His persistent scouring of 15 and 10 meters on the second radio paid off with steady hourly rates throughout the afternoon peppered with an occasional European QSO, including three on 10 meters. In the end, Scott finished with 1,281 well-deserved QSOs including over 150 European QSOs across all the bands. While 47 percent of Scott’s multipliers came from the Americas, 41 percent came from Europe and Africa, which is a great percentage from a difficult part of the country to work DX!

An unexpected line of thunderstorms through Vermont shortened Ed’s, N1UR, operation by a few hours, but he was still able to come out on top in the Phone Only, High Power category (including second place in the World just 9,824 points behind YW1K). “The only real surprise was the zero [Japanese stations] not only in the log but heard,” Ed says in his 3830scores.com post, “no UAØ, BY, JA, etc., heard on any band.” While New England stations do benefit greatly from proximity to Europe, good conditions to much of Asia are not always a given. Much of the short path from the East Coast to Asia runs through the Arctic region, requiring low absorption to get signals across.

Another close race occurred in CW Only, High Power between Greg, W1KM, and Vlad, VE3JM. Massachusetts and Ontario are just far enough away geographically that each of them focused on different propagation opportunities to keep themselves close in the standings. Greg took advantage of his coastal location to maximize his 160- through 40-meter numbers, garnering more QSO points and multipliers while Vlad, in Zone 4, took advantage of favorable skip on 15 meters to Zone 8. Greg and Vlad caught European openings on the 15- and 10-meter bands that resulted in almost an identical number of European QSOs, 136 to 137. The 1900-2100Z opening was workable on 10 meters for Greg while Vlad was able to work an equal number of Europeans at the same time on 15 meters. Just 65,000 points separate these fine operators in the final tally with Greg edging out Vlad for the win.

Contesting for any significant length of time is hard work that requires patience and endurance that tests us all, but we all have to remember to have a little fun, too. The Multioperator team at Tom’s, K8AZ, worked hard and partied hard putting in a fantastic first place effort while still managing to have a grand ol’ time with their “annual grilled steak dinner, traditionally served at 2359z Saturday, the halfway-point,” as described by Tom in his 3830scores.com post.

Even after all the pre-contest planning, “Old Man Murphy” is never too far behind. Perseverance against this unwelcomed guest is as much an important aspect of a successful contest effort as any other skill. Eventually, something will go wrong.

George, W1EBI, planned to make this year’s IARU HF his last big contest before taking his eleven dipoles down and moving into a condo. Not long before the contest, George discovered that not only did his amplifier develop an issue, but his logging computer had failed as well! Ever determined, George got to work figuring out alternatives to get his station back on the air for one more cruise. “I still had a Kenwood TL-922 that I used before getting the Ameritron AL-82,” he reports, “so with no more room on the desk, I ‘borrowed’ a big hunk of Formica that used to be a baking accessory in the kitchen, put it on top of the Ameritron, and managed to lift the Kenwood amp on top. A few minutes of moving cables around and I was back on the air with a kilowatt on all bands...Murphy Denied!”



George, W1EBI, taking both a selfie and a “hero shot” of his trusty Kenwood TL-922, which saved his last contesting effort before moving to a new QTH. George put in nine hours, made 217K points, and reports having “a whole lot of fun.” (photo courtesy of W1EBI)

World Highlights

If the objective is to finish at the top of the World standings in a DX contest, there are certain sweet spots on the planet where an experienced contester can rack up incredible QSO rates and plenty of multipliers. We often see overall winners operating from islands such as Cyprus or the Atlantic African islands of Madeira, Canary or Cape Verde. From these locations, every contact to Europe and North America is worth 5 points. What makes these islands even more appealing is their relatively close location to the European continent where propagation on the low bands tends to be favorable, resulting in high QSO point totals. Jozef, OM3GI, took one of his frequent trips to Madeira Island to take top honors in Single Operator, Mixed Mode, High Power operating as CT9ABO, finishing with a significant lead over second place finisher, Andrey, RW7K. Following the same theme, the team at EF8R in the Canary Islands ran away with the Multoperator Single Transmitter World title nearly doubling the score from last year's winning team at RM9A who finished in second place this year just ahead of Team RL3A.

The Phone Only, High Power categories were won this year by a pair of South Americans in two close races. Julio, YV1KK, led a pack that spanned three continents with N1UR, FY5FY, and 5B4WN (operating as C4W) giving chase, all with final scores within 50,000 points! On the Unlimited side, Sergio, PP5JR (operating as PT5J), and Carlos, EA1WS (operating as EF1W), went toe-to-toe across the Atlantic for worldwide honors. While their performances to parts of the world outside of Europe and North America were quite similar, Sergio focused on working North America across all of the bands, resulting in additional multipliers, while Carlos attempted to run up the QSO count by working the high volume of 3-point QSOs available in the European zones to his east.

Nine Ukrainian stations, UR2Y, UR5FEO, UT4LW, UT5EO, UW1M, UW5Y, UW7LL, UY7RR, and UZ3A finished among the top three in their respective Single Operator categories. In the Mixed Mode, Low Power category Slava, US2YW (operating as UW5Y) edged-out fellow countryman, Yarik, UW7LL, for the top spot in the World. Yarik, whose QTH is about 400 miles east of Slava, finished ahead in both QSOs and multipliers with a greater emphasis on contacts to Europe, finding more HQ multipliers overall, and a few extra Asian multipliers on the low bands. Slava benefited from more QSOs with North America, earning just enough QSO points to overcome the lower multiplier total.

With Murphy expelled from W1EBI's shack, he moved on to Tunisia to cause headaches for the overall African high scorer, Ash, 3V8SS, who had to run "25 [watts] due to [a] power supply issue" in the first hour of the contest. Once resolved, Ash rallied to finish in third place Mixed Mode, Low Power.



Carol, KP4MD, operating her "Holiday Style DXpedition" on the beach in Puerto Rico with an Elecraft KX3 and KXPA100 amplifier using a Buddistick™ balcony antenna. She set a personal best 353 QSOs and 110k points, working as far as VK on 40M; and ZL and KH2 on 20M (photo courtesy of KP4MD)

After an extremely close race with R3ZZ, RG6G, and UW1M last year in CW Only, High Power, Phil, KT3Y (operating as KP2M), changed his strategy this year in a successful campaign for first place in the world from the U.S. Virgin Islands. "[In 2018,] I ended up 3rd place SOHPCW by 0.8% so I decided to focus more on mults this year. I went to topband early (0150z) and worked many EU HQ mults. An hour later they faded away. I was also lucky to catch the brief 10M opening." Victor, UW1M, is the only other one of the four that joined in the chase with Phil this year and finished a close second.

QRP entries are most popular in Europe with many devotees taking advantage of the fact that most participants in IARU HF hail from there. For many years, Marcin, HB9EGA, has been a mainstay in the IARU HF QRP standings. Each year, he receives permission from a local farmer to set up camp on a field to erect a temporary contest station. As chronicled in his blog (<http://hb9ega.blogspot.com>), temporary stations can be a great way to experiment with different antennas from year-to-year. After adding a Spiderbeam tribander for 20 through 10 meters to his antenna roster a few years ago, one of Marcin's improvements this year was the addition of a 5/8-wave vertical for 20 meters. This antenna played an unusual role in Marcin's quest to win his category. As sunset approached the farm, Marcin discovered that the vertical was outperforming the

Spiderbeam, which seemed unusual. A visual check of the beam revealed that a spreader holding the wire elements had collapsed. Marcin's decision to stop and repair the antenna, a task that took about 2 hours while darkness settled, proved to be the right decision. He got the antenna back up to its full 15-meter height in time to be able to work into the Americas on 20 meters. In the end, Marcin's effort was rewarded by finishing first place in the Mixed Mode, QRP, World category.

Some ITU Zones encompass sparsely populated regions that are rarely active. Mikhail, RW1AI (operating as RIØBC), put in a part-time effort from Severnaya Zemlya, a Russian Arctic Archipelago in Zone 22, a zone that has not been activated in 12 years. From a region at 79-degrees North latitude that experiences 24-hour daylight in July, Mikhail spent his limited time almost exclusively on 20 meters with just four 40-meter contacts to Europe. Although most of his contacts were within Europe and Asia, he also succeeded in giving out the rare zone to thirteen North American stations, including VE3JM in Ontario, K1ZZ in Connecticut and WW4LL's remote station in Maine.

The national societies from France and Germany continue their Headquarter Societies rivalry with TMØHQ (REF, France) repeating last year's victory with DAØHQ (DARC, Germany) finishing second.

NU1AW (IARU) operations were a New England affair, shared this year between the stations of Dave, K1TTT in western Massachusetts and Matt, KC1XX, in southern New Hampshire. With both stations sporting some of the largest HF antenna arrays in the Northeast, each QTH took charge of a mode on each band starting with KC1XX assigned to 160-meter CW while K1TTT took 160 Phone. The stations alternated modes up to 10 meters. This allowed both groups to operate every band and to take advantage of no in-band QRM which worked out quite nicely.

W1AW (ARRL) operations were hosted by the Comstock Memorial Station team, W7RN, in Nevada with a mixture of operators that were either present at the station or connecting remotely.

Headquarters and IARU Special Stations



Spiderbeam used by HB9EGA in his portable Phone Only, QRP effort (photo courtesy of HB9EGA)

Special IARU Stations	
IARU Headquarters Stations (# indicates multiple callsigns with different digits were used)	
Call	Score
TMØHQ	23,129,114
DAØHQ	18,751,986
OL9HQ	17,230,271
IOØHQ	17,195,076
GR2HQ	16,658,376
S5ØHQ	16,025,672
SNØHQ	15,984,168
9AØHQ	14,913,108
LYØHQ	13,306,860
YTØHQ	11,799,399
YRØHQ	11,413,800
SE9HQ	11,269,009
LZØHQ	10,040,744
OEØHQ	9,563,624
OPØHQ	9,530,523
NU1AW	8,674,050
HB9HQ	7,729,605
R9HQ	7,647,178
OZ1HQ	7,249,871
YL4HQ	6,597,450
PA6HQ	3,863,808
Z3ØHQ	3,658,341
8NØHQ	3,455,650
OH2HQ	3,385,440
LUØHQ	2,534,035
BØHQ	2,037,328
LN2HQ	1,958,094
CR5HQ	1,743,248
ER7HQ	1,376,090
W1AW	1,370,565
E2HQ	1,213,900
EF4HQ	1,182,455
PJ2HQ	1,163,700
VP9HQ	1,128,420
CB1HQ	1,114,800
EIØHQ	1,068,480
CX1AA	782,132
A47HQ	777,650
T4ØHQ	699,985
TC3HQ	611,160
LX8HQ	608,420
UN1HQ	450,260
VR2HK	277,514
Z6ØA	253,616
DXØHQ	199,422
OA4O	141,000
HLØHQ	140,022
V31HQ	124,320
ZL6HQ	122,786
AT1HQ	116,730
EM5HQ	95,787
BVØHQ	95,404
YM1KM	150

IARU Administrative Council Stations	
G5W	2,298,785
K1ZZ	2,403,393
LA2RR	1,612,416
VE6SH	86,152
IARU R1	
F4GKR/P	761,971
DJ3HW	486,096
IV3KKW	109,710
IARU R2	
YV5AM	1,415,458
KK1Z	1,170,606
VE3YV	25,428
IARU R3	
JA1CJP	129,846
YB0AZ	80,104
9M4CMA	168

Thanks to the World Wide Radio Operators Foundation (WWROF, www.wwrof.org) for providing the log-scoring for the HQ station competition.



Nick, K1NZ, operating SSB on 10 meters from K1TTT during NU1AW operations. (photo courtesy of N2HX)

Golden Logs

No contest effort is complete without a focus on accuracy. A total of 110 stations with at least 100 QSOs submitted logs with no errors, meaning all contacts were logged with the correct callsign and exchange information.

Top 25 Golden Logs for 2019		
Call	QSOs	Score
K1DJ	764	370,062
LY3CY	733	304,456
UA3QAM	555	259,017
K2MK	546	108,924
OK7T	527	204,909

SP6DVP	470	142,494
N3ER	440	166,584
K3PP	422	209,000
K6MM	417	66,180
Z39A	402	70,656
VE1RSM	400	157,000
DA0DX	357	72,618
UT3WX	339	55,656
RT3U	337	142,128
E72U	330	83,250
UC0A	322	94,032
VE3FH	316	57,584
DL5ST	306	64,460
EW6F	298	34,112
JO7KMB	288	49,678
UX2IJ	269	69,368
AE0EE	256	46,096
UR5E	255	73,839
RW3AI	252	64,660
ON6LR	245	56,875

New Friends

Many first timers mentioned their new adventures in Soapbox and 3830scores.com reports. Here are a few:

Marcel, PC4L, obtained his Novice license in 2017 and has recently upgraded to a full license. He made 200 Phone contacts while operating low power and has set a new goal for himself next year, “250 minimum.”

Peter, AE6PL, took the opportunity to use IARU HF to try CW for the first time, saying, “I’m definitely hooked ... my heart was pounding along with my fist and my nervous hand was shaking like a Vibroplex® bug.”

Bryce, KRØCKT, worked around a 2-hour storm to participate in his first HF contest and finished fourth place in W/VE Phone Only High Power!

Alexander, IUØLRV, had been licensed just over 6 months when he decided to give IARU HF a try after giving several other contests a try over the winter and spring and reports, “I can tell you that IARU HF Championship 2019 Contest was the one that impressed me the most and it made me very happy.”

Where is Everybody?

As we have seen from some of the different strategies used by operators from around the world, understanding how propagation plays from your neck of the woods will give you the best chance to do well in any contest. But like any other sport, knowing the playing field is the first step in a successful campaign.

Historically, most of the activity in IARU HF has come from Europe. Figures 1 and 2 summarize where most contacts and most multipliers can be found, geographically. But great propagation to Europe or the eastern shores of North America is not shared by everyone. Propagation, unfortunately, is an uneven gift from nature; we must make the best with what we are given. To paraphrase an old saying in American politics, *all contesting is local*; the measure of any one effort should be compared against local peers, other radiosport enthusiasts that operate stations nearby.

With that in mind, congratulations to all the top scores from all over the world!

Zone	Continent(s)	Log Entries
28	Europe	1,309
8	North America	576
29	Europe	542
27	Europe	283
45	Asia	238
6	North America	196
7	North America	184
37	Europe / Africa	129
18	Europe	125
30	Asia	85
44	Asia	63
54	Asia / Oceania	62
4	North America	58
15	South America	56
39	Asia	50
11	North America	34
14	South America	34
31	Asia	25
12	South America	22
50	Oceania	18
49	Asia	17
32	Asia	17
36	Africa	16
13	South America	15
2	North America	15
59	Oceania	15

Figure 1 - Top 25 average number of yearly log entries by non-HQ or Special stations for the last five years by zone.

Continent	Zones ¹	HQ/Special Stations ²	Total
Europe	8	33	41
Asia	15	13	28
North America	11	9	20
Oceania	11	4	15
South America	5	7	12
Africa	5	2	7

Figure 2 - Average number of multipliers available yearly from each continent for the last five years. ¹ Zones across multiple continents credited to continent with the most log entries, ² AC and Region mults can be available from multiple continents

2019 Mode Categories

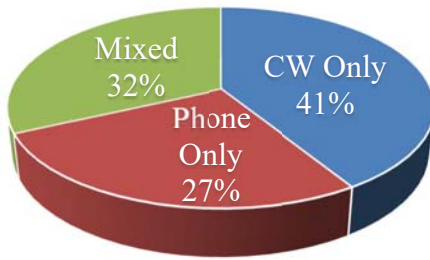


Figure 3 – CW remains the predominant mode. Mixed mode entries also tend to focus more on CW.

2019 Power Categories

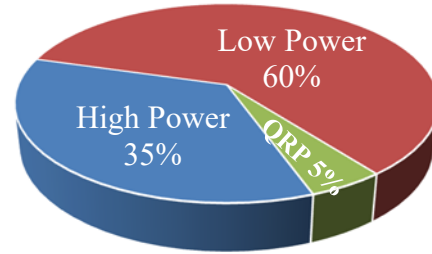


Figure 4 – Low Power continues to reign, so listen hard for the weaker ones!



Above is a secret weapon Greg, W1KM, used in his Single-Op CW High Power victory in 2019. To the untrained eye, this looks like an 80-meter four square, but if you look closely at the top of two of the verticals, Greg reveals the true secret of his success on the salt marsh shores of southern Massachusetts: half of the array is “osprey top-loaded”! (W1KM photo)

Top Ten Scores							
United States and Canada		World		United States and Canada		World	
Single Operator				Single Operator Unlimited			
Mixed-Mode, High Power				Mixed-Mode, High Power			
VE3EJ	2,284,035	CT9ABO (OM3GI, op)	4,881,184	VA2WA	2,542,473	HA3NU	3,255,408
NN3W (@N3HBX)	1,963,280	RW7K	3,912,399	N8OO	1,669,269	LY7Z	3,098,073
VE3AT	1,947,668	ES5RR (ES2RR, op)	3,245,047	VE5MX	1,503,675	VA2WA	2,542,473
K5GN	1,857,288	UPØL (UN9LW, op)	2,901,816	NR3X (N4YDU, op)	1,471,259	TI7W (N3KS, op)	2,307,825
NO6T (KI6RRN, op)	1,779,844	EI7M (GD4XUM, op)	2,696,085	K3WW	1,278,288	9A3XV	2,064,778
VE3DZ	1,775,227	IR1G (IZ1LBG, op)	2,635,214	K7RL	1,195,922	YL6W (YL2GD, op)	1,935,054
K5ZD	1,695,309	9A5Y (9A7DX, op)	2,605,913	N3QE	1,071,150	SO4M (SP5UAF, op)	1,716,534
K6XX	1,307,580	OM3BH	2,574,558	W1GD	1,015,992	RA6CA	1,711,640
K4AB	1,178,013	DJ5MW	2,496,780	K5CM (W5CW, op)	856,254	G4R (YO4RDW, op)	1,707,552
K3PA	1,035,090	RM9I	2,387,154	W3PU (KO8SCA, op)	800,976	UT5C (UX7CQ, op)	1,683,799
Mixed-Mode, Low Power				Mixed-Mode, Low Power			
VA2EW	1,284,666	UW5Y (US2YW, op)	1,692,041	NE9U	536,056	UZ3A (UX1AA, op)	1,738,659
KD4D	929,940	UW7LL	1,666,320	VA3DF	395,305	HG1A (HA1ZN, op)	1,344,772
W9PA (N9NB, op)	534,280	3V8SS (KF5EYY, op)	1,357,689	N5DO	279,020	PC3T	1,191,380
KU1CW	448,404	VA2EW	1,284,666	W9AV	263,176	9A1AA	1,166,418
KU2M	406,077	LY4L	1,211,760	AA4LS	136,128	UR6EA	1,076,865
VE3TG	197,613	R8CT	1,102,230	AC5O	114,635	OL5Y	1,031,680
N8II	149,688	LZ1GU	994,560	W4EE	92,819	RL6M	1,019,165
WA2JQK	123,702	UA4FER	962,795	K1VU (N1EN, op)	81,760	RU9AC	768,740
KM4HI	82,716	KD4D	929,940	KM4SII	81,508	UW8SM	767,096
W1MJ	81,600	UA2K (UA2FB, op)	868,323	VA3FF	81,445	RV9UP	753,232
Mixed-Mode, QRP				Mixed-Mode, QRP			
KJ4YM	792	MM3AWD	564,120	K8ZT	47,250	DK3WE	720,434
N7JI	533	LY5G	308,812			EE3X (EA3KX, op)	409,479
		DF5RF	157,080			PE2K	78,027
		HG6C (HA6IAM, op)	149,668			JG1LFR	56,525
		HA5BA	149,375			K8ZT	47,250
		UT5EOX	88,038			7L3PFH	19,604
		UX8IX	80,379			CM3EFM	4,896
		DK9BM	39,832			3G3O (XQ3OP, op)	3,072
		SP5PDA (SP5XSL, op)	38,098			DL8MF	656
		EA6/DK5ON	30,889			DM7C	66
Phone Only, High Power				Phone Only, High Power			
N1UR	1,032,624	YW1K (YV1KK, op)	1,042,448	KØBBC/VY2	762,908	PT5J (PP5JR, op)	1,138,205

W7WA	851,422	N1UR	1,032,624	W3LL	584,502	EF1W (EA1WS, op)	1,123,575
NA3D	378,696	FY5FY	1,001,222	N8BI	339,146	ED8W	1,030,682
KRØCKT	172,339	C4W (5B4WN, op)	996,224	WV4P	166,160	HC5DBT	801,528
W6AFA	140,067	W7WA	851,422	W3ICM	94,842	4Z7Z (4X1DX, op)	798,903
KD7RF	124,899	EA3CI	788,535	K4HDW	74,284	KØBBC/VY2	762,908
W5GFI	98,687	CR6K (CT1CJJ, op)	770,835	KC4NX	69,069	IR4K (IZ4JUK, op)	738,304
KE8FT	68,680	US5D (UT7DX, op)	752,854	K4BBH	40,542	PJ4DX	658,392
VA3ZNQ	57,904	OL8K (OK1GTH, op)	670,424	K1KP	40,432	RW3XZ	618,186
W4BBT	44,240	RM8A	551,754	N7GCO	36,120	S54ZZ	607,168
Phone Only, Low Power				Phone Only, Low Power			
K6JO	200,376	HA3DX (HA4XH, op)	766,475	K2ADA	123,732	HGØR (HAØNAR, op)	772,164
N7MZW	34,419	ES6RW	664,196	WZ8T	59,954	UR2Y (USØYW, op)	592,176
VA3TPS	34,220	IW1FRU	612,892	KA2KON	55,650	IK4LZH	585,984
W8PDH	33,128	EI7T (ON4EI, op)	601,191	WT8WV	32,984	EC5AN	569,245
AB1EP	26,076	PA2TMS	390,051	KM4IAJ	22,680	YO7SR	317,275
NE1D	24,612	UA3BL	263,520	K4ZMW	19,926	RA9AU	271,660
VE1SQ	24,072	OH6ECM	242,268	KI5MM	13,908	DL4VAI	259,578
KN4EWI	19,796	RC7KY	240,240	K4LDC	12,243	RZ3Z	251,868
N1XL	15,930	OE1HHB	222,824	KA4FVE	11,395	F4VSE	234,252
KR4NO	15,776	K6JO	200,376	KD2JOE	9,905	TMØ7A	169,024
Phone Only, QRP				Phone Only, QRP			
K5YM	6,270	HB9EGA	59,964			HG6R	132,404
WØJMW	1,683	SP9TKW	48,200			LZ1DM	54,320
VA3MYC	1,581	SP4LVK	38,522			9A4AA	31,680
AD6OE	1,190	UA3OQ	35,802				
KEØRJE	360	A61BK	31,949				
VA3KXS	189	HA1TI	24,108				
WA8ZIP	161	UR7TV	17,500				
WD4IYE	80	PAØAWH	12,670				
KK7VL	52	UA4ASE/6	7,654				
WØHGW	3	K5YM	6,270				
CW Only, High Power				CW Only, High Power			
W1KM	2,080,806	KP2M (KT3Y, op)	2,580,048	AA3B	2,729,188	P3X (UT5UDX, op)	4,255,180
VE3JM	2,016,214	UW1M (UR5MW, op)	2,323,620	K9CT	1,541,375	SN7Q (SP7GIQ, op)	3,097,926
K1KI	1,842,932	R2DA	2,115,012	AB3CX	1,394,172	P44W (W2GD, op)	3,063,725
N2IC	1,507,099	UR7GO	2,081,510	AD5A	1,213,315	EA6FO (EC3TW, op)	2,732,136
W9RE	1,429,924	W1KM	2,080,806	N3AD	1,104,873	AA3B	2,729,188
VE9AA	1,338,960	VE3JM	2,016,214	NT6Q (N5ZO, op)	985,704	RT9A	2,553,985

WXØB (AD5Q, op)	1,332,000	K1KI	1,842,932	N5RZ	797,886	UT4U (UT5UJO, op)	2,299,098
N4AF	1,187,970	N2IC	1,507,099	VE3CX	738,375	LY5E	2,262,960
W6YX (N7MH, op)	1,111,360	HG5D (HA8QZ, op)	1,488,095	N4BP	647,192	YT6W	1,982,690
N3BB	1,083,664	W9RE	1,429,924	K6DAJ (@N6RO)	645,653	RL5A	1,811,244
CW Only, Low Power				CW Only, Low Power			
KE5JSY (IZ3EYZ, op)	655,155	UT5EO	1,389,406	W3KB	456,057	UT4LW	1,482,800
K4BAI	469,522	HA1SN	1,202,630	K9OM	428,672	RU6K	1,470,574
W1NN	468,860	8P5A (W2SC, op)	1,018,236	VE3MGY	336,160	5B/RN3QO	1,428,526
W12E	399,249	UA5F	832,656	K6WSC	186,147	RC9A	1,419,704
K7SV	358,827	WP3C	793,203	AB9YC	175,275	SN7O (SP7IVO, op)	1,302,234
WA1FCN	335,445	RX9AF	709,956	VE1RSM	157,000	SP4JCQ	1,063,132
N8AA	329,749	RW2F (RA2FA, op)	675,521	W4PM	124,215	S53A	1,058,200
KØAD	293,170	KE5JSY (IZ3EYZ, op)	655,155	VE3MA	112,668	R7MM	1,031,955
W1QK	280,876	RU9I	494,680	K2MK	108,924	4O3A (E77W, op)	898,367
WB4TDH	227,250	YL5W (YL2GN, op)	482,160	K7TQ	85,960	RA3AN	820,328
CW Only, QRP				CW Only, QRP			
K8CN	91,546	DJ2RG	328,692	K1KK (HK1A, op)	44,730	RM5F	457,272
NE5TH	31,564	UY7RR	287,810	W1WBB	11,973	OK6K (OK5IM, op)	172,989
KEØTT	28,704	UR5FEO	192,696	KU4A	11,628	HG3C (HA3HX, op)	157,680
NU4B	16,377	R5PW	189,420	KK7A	1,536	EU8F	144,329
W4QO	14,016	LZ5QZ	136,017	W4ER	1,122	ON3DI	140,580
W5LA	9,396	US5VX	131,968			IK2GWH	129,336
AA1K	5,040	S53AR	100,625			UT3EK	116,350
W6MZ	4,186	DM2DZM	98,600			SMØLPO	104,448
WR4I	3,528	K8CN	91,546			LY3G	54,153
W8DXU	3,120	UZ7F	89,816			OK2AP	53,760
Multioperator, Single Transmitter, High Power							
K8AZ	1,769,888	EF8R	8,941,053				
K1IR	1,624,110	RM9A	4,647,495				
VE3UTT	1,504,140	RL3A	4,521,984				
WW4LL	1,428,820	UP2L	4,487,733				
NV9L	1,030,688	IR4M	3,875,095				
KT7E	849,028	IR4X	3,667,350				
W2Z	691,775	HG6N	2,858,128				
W4AQL	609,492	EM2Q	2,457,216				
NØAX	593,700	OHØC	2,279,760				
VE9ML	589,680	RK3T	1,504,808				

Regional Leaders

HP: Over 150W; LP: 150W or less; QRP: 5W or less; SO: Single Operator; MS: Multi-Single; MIX: Mixed-Mode

West Coast Region Pacific, Northwestern, and Southwestern ARRL Divisions; Alberta; British Columbia, and NT RAC Sections			Midwest Region Dakota, Midwest, Rocky Mountain and West Gulf ARRL Divisions; Manitoba and Saskatchewan RAC Sections			Central Region Central and Great Lakes ARRL Divisions; Greater Toronto Area, Ontario East, Ontario North, and Ontario South RAC Section			Southeast Region Delta, Roanoke, and Southeastern ARRL Divisions			Northeast Region New England, Hudson and Atlantic ARRL Divisions; Maritime and Quebec RAC Sections		
Call	Score	Cat	Call	Score	Cat	Call	Score	Cat	Call	Score	Cat	Call	Score	Cat
Single Operator														
NO6T (K16RRN,op)	1,779,844	MIX-HP	K5GN	1,857,288	MIX-HP	VE3EJ	2,284,035	MIX-HP	K4AB	1,178,013	MIX-HP	NN3W (@N3HBX)	1,963,280	MIX-HP
K6XX	1,307,580	MIX-HP	K3PA	1,035,090	MIX-HP	VE3AT	1,947,668	MIX-HP	KØEJ	862,040	MIX-HP	K5ZD	1,695,309	MIX-HP
VE7UF (VE7JH, op)	780,710	MIX-HP	NG7M	77,436	MIX-HP	VE3DZ	1,775,227	MIX-HP	N4PN	633,749	MIX-HP	K3ZO	697,026	MIX-HP
W6TK	285,492	MIX-HP	WØETT	73,186	MIX-HP	K9ZO (WT2P, op)	720,945	MIX-HP	KU8E	431,680	MIX-HP	N3XF	124,832	MIX-HP
W6FB	77,175	MIX-HP	WA5DSS	31,086	MIX-HP	WB8AKW	75,760	MIX-HP	N4NO	200,982	MIX-HP	KM2L	61,710	MIX-HP
KU1CW	448,404	MIX-LP	AEØEE	46,096	MIX-LP	W9PA (N9NB, op)	534,280	MIX-LP	N8II	149,688	MIX-LP	VA2EW	1,284,666	MIX-LP
W6RKC	47,250	MIX-LP	KØKR	44,184	MIX-LP	VE3TG	197,613	MIX-LP	KM4HI	82,716	MIX-LP	KD4D	929,940	MIX-LP
AI6V	24,360	MIX-LP	KA8HDE	40,376	MIX-LP	VE3WRL	78,556	MIX-LP	AAØO	65,424	MIX-LP	KU2M	406,077	MIX-LP
KE6GLA	10,465	MIX-LP	N9HDE	36,472	MIX-LP	K4YJ	78,375	MIX-LP	N2JF	22,500	MIX-LP	WA2JQK	123,702	MIX-LP
VE6JF	9,196	MIX-LP	WØYJT	34,713	MIX-LP	W8MET	74,108	MIX-LP	N4ARO	21,120	MIX-LP	W1MJ	81,600	MIX-LP
N7JI	533	MIX-QRP							KJ4YM	792	MIX-QRP			
W7WA	851,422	PH-HP	W5GFI	98,687	PH-HP	VA3ZNQ	57,904	PH-HP	W4BBT	44,240	PH-HP	N1UR	1,032,624	PH-HP
KRØCKT	172,339	PH-HP	KØVG	4,495	PH-HP	AA8DC	37,128	PH-HP	KM3U	38,115	PH-HP	NA3D	378,696	PH-HP
W6AFA	140,067	PH-HP	K5TBA	4,059	PH-HP	W9NZ	35,855	PH-HP	WB4HRL	32,782	PH-HP	KK1L	37,092	PH-HP
KD7RF	124,899	PH-HP	K5AVY	1,696	PH-HP	N4ZY	23,058	PH-HP	KU4FX	20,237	PH-HP	W2KU	8,304	PH-HP
KE8FT	68,680	PH-HP	K5TYR (WM5Q, op)	630	PH-HP	WB9ONU	10,455	PH-HP	K4HWS	19,152	PH-HP	KD2NE	7,194	PH-HP
K6JO	200,376	PH-LP	N7MZW	34,419	PH-LP	VA3TPS	34,220	PH-LP	KN4EWI	19,796	PH-LP	AB1EP	26,076	PH-LP
NF7E	15,004	PH-LP	KM5JV	12,645	PH-LP	W8PDH	33,128	PH-LP	N1XL	15,930	PH-LP	NE1D	24,612	PH-LP
WB6CZG	7,854	PH-LP	AEØTT	10,990	PH-LP	WB9DAR	15,455	PH-LP	KR4NO	15,776	PH-LP	VE1SQ	24,072	PH-LP
K6MUG	5,510	PH-LP	NW5Q	9,633	PH-LP	VE3RVZ	14,850	PH-LP	KM4ZQE	14,400	PH-LP	N2MTG	14,307	PH-LP
NX7W (N7FLT, op)	3,528	PH-LP	W7KAM	8,460	PH-LP	KV4ZY	12,402	PH-LP	K4SHW	12,240	PH-LP	N3XZ	13,255	PH-LP
AD6OE	1,190	PH-QRP	K5YM	6,270	PH-QRP	VA3MYC	1,581	PH-QRP						
KK7VL	52	PH-QRP	WØJMW	1,683	PH-QRP	VA3KXS	189	PH-QRP						
			KEØRJE	360	PH-QRP	WA8ZIP	161	PH-QRP						
			WØHGW	3	PH-QRP	WD4IYE	80	PH-QRP						

W6YX (N7MH, op)	1,111,360	CW-HP	N2IC	1,507,099	CW-HP	VE3JM	2,016,214	CW-HP	N4AF	1,187,970	CW-HP	W1KM	2,080,806	CW-HP
N6TV	858,888	CW-HP	WXØB (AD5Q, op)	1,332,000	CW-HP	W9RE	1,429,924	CW-HP	K3JT	443,784	CW-HP	K1KI	1,842,932	CW-HP
N6AA	617,760	CW-HP	N3BB	1,083,664	CW-HP	NA8V	1,061,632	CW-HP	N2YO	212,534	CW-HP	VE9AA	1,338,960	CW-HP
K7RAT (N6TR, op)	410,168	CW-HP	WØUA	1,005,890	CW-HP	N8BJQ	466,900	CW-HP	WQ5L	172,874	CW-HP	K1IMI (N4CW, op)	484,484	CW-HP
VE7DZO	395,400	CW-HP	WDØT	570,354	CW-HP	K8MP	289,192	CW-HP	AA4EA	141,732	CW-HP	VA1MM	334,866	CW-HP
WN6K	110,880	CW-LP	KE5JSY (IZ3EYZ, op)	655,155	CW-LP	W1NN	468,860	CW-LP	K4BAI	469,522	CW-LP	WI2E	399,249	CW-LP
K7HBN	54,020	CW-LP	KØAD	293,170	CW-LP	N8AA	329,749	CW-LP	K7SV	358,827	CW-LP	W1QK	280,876	CW-LP
VA6WWW	41,268	CW-LP	NN5T	180,544	CW-LP	VE3TM	190,183	CW-LP	WA1FCN	335,445	CW-LP	K2ZR	146,740	CW-LP
W6ZL	26,092	CW-LP	W5RYA	151,715	CW-LP	KV8Q	128,610	CW-LP	WB4TDH	227,250	CW-LP	N1QY	136,080	CW-LP
K7AZT	14,858	CW-LP	KG5U	136,152	CW-LP	W8TM	110,134	CW-LP	K4OAQ	88,956	CW-LP	W2IY	105,448	CW-LP
W6MZ	4,186	CW-QRP	NE5TH	31,564	CW-QRP	W8DXU	3,120	CW-QRP	NU4B	16,377	CW-QRP	K8CN	91,546	CW-QRP
N6HI	1,360	CW-QRP	KEØTT	28,704	CW-QRP	K8RJW	927	CW-QRP	W4QO	14,016	CW-QRP	WA2NYY	1,482	CW-QRP
N6HCN	784	CW-QRP	VE5/WB9QAF	780	CW-QRP				W5LA	9,396	CW-QRP	K1SX	13,536	CW-QRP
K2GMY	636	CW-QRP	KIØG	80	CW-QRP				AA1K	5,040	CW-QRP	VE9HF	9,022	CW-QRP
VE7AHT	385	CW-QRP							WR4I	3,528	CW-QRP	K6NR	4,356	CW-QRP
Single Operator Unlimited														
K7RL	1,195,922	MIX-HP	VE5MX	1,503,675	MIX-HP	VE3RZ	580,920	MIX-HP	N8OO	1,669,269	MIX-HP	VA2WA	2,542,473	MIX-HP
W9KKN	574,704	MIX-HP	K5CM (W5CW, op)	856,254	MIX-HP	ND9G	403,550	MIX-HP	NR3X N4YDU, op)	1,471,259	MIX-HP	K3WW	1,278,288	MIX-HP
NC6K	346,647	MIX-HP	N5JR	337,848	MIX-HP	N2BJ	233,820	MIX-HP	WO4O	438,986	MIX-HP	N3QE	1,071,150	MIX-HP
N9NA	161,073	MIX-HP	KØKX	180,721	MIX-HP	VE3TW	129,708	MIX-HP	N3UA	116,034	MIX-HP	W1GD	1,015,992	MIX-HP
N6IE	114,900	MIX-HP	K8LS	156,450	MIX-HP	VE3MM	72,268	MIX-HP	WA4JUK	73,134	MIX-HP	W3PU (KØ8SCA, op)	800,976	MIX-HP
K6GHA	79,876	MIX-LP	N5DO	279,020	MIX-LP	NE9U	536,056	MIX-LP	AA4LS	136,128	MIX-LP	K1VU (N1EN, op)	81,760	MIX-LP
N7UJJ	22,776	MIX-LP	KE5LQ	11,439	MIX-LP	VA3DF	395,305	MIX-LP	AC5O	114,635	MIX-LP	AA1SU	28,762	MIX-LP
AE6PL	5,106	MIX-LP	NT5TT	2,618	MIX-LP	W9AV	263,176	MIX-LP	W4EE	92,819	MIX-LP	VE2CJR	24,924	MIX-LP
AG6JA	1,972	MIX-LP	NA5J	2,496	MIX-LP	VA3FF	81,445	MIX-LP	KM4SII	81,508	MIX-LP	W3FIZ	13,631	MIX-LP
VE7BGP	984	MIX-LP	WØJWR	936	MIX-LP	K8GT	76,095	MIX-LP	WA4IPU	39,785	MIX-LP	WA1DRQ	12,358	MIX-LP
						K8ZT	47,250	MIX-QRP						
N7GCO	36,120	PH-HP	WXØZ	4,864	PH-HP	N8BI	339,146	PH-HP	WV4P	166,160	PH-HP	KØBBC/VY2	762,908	PH-HP
			K9TWW	546	PH-HP	VA3WW	6,300	PH-HP	K4HDW	74,284	PH-HP	W3LL	584,502	PH-HP
						KC9WAV	3,726	PH-HP	KC4NX	69,069	PH-HP	W3ICM	94,842	PH-HP
						VE3HED	2,736	PH-HP	K4BBH	40,542	PH-HP	K1KP	40,432	PH-HP
						KC9BG	2,124	PH-HP	KM4VTE	26,962	PH-HP	N2MUN	17,424	PH-HP

WZ8T	59,954	PH-LP	KI5MM	13,908	PH-LP	WS6K	3,300	PH-LP	K2ADA	123,732	PH-LP	KA2KON	55,650	PH-LP
WA7YXY	5,012	PH-LP				NR9K	2,349	PH-LP	WT8WV	32,984	PH-LP	KD2JOE	9,905	PH-LP
W6RQ	1,472	PH-LP				VE3EZB	2,166	PH-LP	KM4IAJ	22,680	PH-LP	W2JV	7,955	PH-LP
KB7HDX	1,410	PH-LP							K4ZMW	19,926	PH-LP	N3YPJ	5,421	PH-LP
KI6SCT	234	PH-LP							K4LDC	12,243	PH-LP	VE9WRS	4,396	PH-LP
NT6Q (N5ZO, op)	985,704	CW-HP	AD5A	1,213,315	CW-HP	K9CT	1,541,375	CW-HP	N4BP	647,192	CW-HP	AA3B	2,729,188	CW-HP
K6DAJ (@N6RO)	645,653	CW-HP	N5RZ	797,886	CW-HP	VE3CX	738,375	CW-HP	W4NZ	640,840	CW-HP	AB3CX	1,394,172	CW-HP
K6MMM (KE1B, op)	104,550	CW-HP	NØAV	325,254	CW-HP	VE3NZ	529,065	CW-HP	K3JE	517,960	CW-HP	N3AD	1,104,873	CW-HP
KC7EFP	103,050	CW-HP	WØVX	141,327	CW-HP	VE3NE	386,230	CW-HP	K2SX	445,354	CW-HP	K4RUM	622,870	CW-HP
W6RW	92,160	CW-HP	WBØN	105,570	CW-HP	N9CO	370,944	CW-HP	N1LN	385,320	CW-HP	N3RS	588,093	CW-HP
K6WSC	186,147	CW-LP	KØVBU	80,580	CW-LP	K9OM	428,672	CW-LP	W4PM	124,215	CW-LP	W3KB	456,057	CW-LP
K7TQ	85,960	CW-LP	AD1C	55,877	CW-LP	VE3MGY	336,160	CW-LP	K2MK	108,924	CW-LP	VE1RSM	157,000	CW-LP
K7JQ	38,456	CW-LP	KØMPH	20,102	CW-LP	AB9YC	175,275	CW-LP	N4UW	78,624	CW-LP	N3ZA	30,976	CW-LP
KN7K	21,552	CW-LP	NQ5M	12,274	CW-LP	VE3MA	112,668	CW-LP	AA4NP	56,304	CW-LP	WA3MD	25,830	CW-LP
KE7RW	8,085	CW-LP	K7ULS	3,933	CW-LP	WA9LEY	36,380	CW-LP	N4TP (W4LT, op)	47,894	CW-LP	AC3BU	20,352	CW-LP
KK7A	1,536	CW-QRP				KU4A	11,628	CW-QRP	K1KK (HK1A, op)	44,730	CW-QRP	W1WBB	11,973	CW-QRP
									W4ER	1,122	CW-QRP			
Multioperator Single Transmitter														
KT7E	849,028	MSHP	NØAX	593,700	MSHP	K8AZ	1,769,888	MSHP	W4AQL	609,492	MSHP	K1IR	1,624,110	MSHP
K7RI	318,530	MSHP	WØECC	329,324	MSHP	VE3UTT	1,504,140	MSHP	N4IQ	422,433	MSHP	WW4LL	1,428,820	MSHP
K7BTW	311,880	MSHP	NØKE	21,888	MSHP	NV9L	1,030,688	MSHP	K4OV	397,075	MSHP	W2Z	691,775	MSHP
NX6T	295,254	MSHP	WA5LHM	21,600	MSHP	K8AJS	260,414	MSHP	WØNA	265,727	MSHP	VE9ML	589,680	MSHP
VA7DZ	92,748	MSHP	NM5M	8,556	MSHP	K9GX	108,819	MSHP	W4UAL	40,651	MSHP	W3ZGD	329,160	MSHP