



IARU HF World Championship

2023 Full Results

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

“Love the summer propagation - always a fun break from the other DX contests - the nighttime prop is fun on the high bands!” – Dave, KM3T

The 2023 IARU HF World Championship exceeded 5,000 log entries for the fourth time in its history with 5,587 submissions. The total is just 95 logs short of the all-time record set in 2020.

Around the globe, a total of fifty-six ITU zones, sixty IARU Headquarters stations, and all four IARU Administrative Council and Region representatives were active, providing plenty of multiplier opportunities for the IARU HF faithful.

Adding to the fun was the ninth World Radiosport Team Championship (WRTC) in Emilia-Romagna, Italy. WRTC has operated concurrently within the IARU HF World Championship almost every four years since 1996. Nearly five dozen teams were on the air from northern Italy operating Multioperator, Two Transmitter, Low Power. Many operators noted in their 3830scores.com posts that among their operating objectives was to seek out and work WRTC teams as much as possible.

Propagation

Propagation was generally favorable during the contest. A small X-Class solar flare occurred during the week leading up to the contest. There were prognostications of an Earth-facing coronal hole impacting conditions over the weekend. The general consensus in post-contest reports is that conditions were still a bit depressed when the contest started at 1200Z on Saturday, but improved steadily on the high bands over the day.

In California, Bob, N6TV, reported in his 3830scores.com post that “high band conditions were really good at night; with even a [Nepalese] station booming in on 15 [meters].”

Bob added that, when conditions are good, knowing where to point the antenna can be a difficult decision.

“I wish I had the ability to point antennas in two different directions, as the bands were often open to both Europe and Japan at the same time, and they are about 90 degrees apart here, as a beam heading.”



Bill, N7VM, wore his 2014 WRTC volunteer shirt for good luck – and it worked! His Single Operator, CW Only, Low Power effort was good enough for fifth place W/VE and a new Southwestern Division record. Photo courtesy N7VM.

On 10 meters, openings between North America and Europe were spotty. The best openings occurred between the Eastern Seaboard and ITU Zones 27 and 28 during the 1200 and 1700Z hours. A small group of stations from ITU Zone 7 and across Eastern Canada were able to work Europe, particularly in the 1700Z hour.

By the time night fell across Europe, 20 and 15 meters opened well to North America. Many stations, including the low power WRTC participants, reported staying busy on 20 meters. With conditions so good on 20 meters during the nighttime hours, many stations decided to forgo major effort on the low bands, saving their ears from thunderous summertime static.

While during some hours it probably took a fair amount of antenna gain and power, log data show North American stations in ITU Zone 8 experienced openings on 15 meters to somewhere in Europe in each of the 24 hours. New England stations enjoyed most of the advantage, but Jack, N4RV, made contacts with several southern European stations, including some WRTC stations, from his QTH in Virginia in the early morning hour of 0700Z (3 AM local).

Folks in ITU Zone 7 and the Canadian ITU Zones did not enjoy continuous overnight propagation to Europe on 15

meters. However, stations across ITU Zone 6 in the Western USA almost did. ITU Zone 6 is a large zone, spanning all of Call Areas 6 and 7 in the USA. The openings were not widespread, but a path was open to somewhere in Europe for nearly the entire contest. The only hour with unconfirmed QSOs between ITU Zone 6 and Europe is 1200Z.

The path to East Asia from ITU Zone 8 on 15 meters stayed open well into the 0500Z hour (1 AM local) with several stations along the Eastern Seaboard working into ITU Zones 44 and 45.

One of the toughest paths from Europe is to ITU Zone 61 in the Pacific Ocean, which is home to Hawaii. WRTC stations combined to log over seventy contacts with Thomas, NH6Y; Kent, KH6CJJ; Jim, N6TJ (operating as KH7M); and the ARRL Headquarters operation, W1AW/KH6, from QTHs of Alex, KH6YY, and Lloyd, KH6LC – an indicator of good polar path conditions during the contest.

“Great [20 meter] opening to Europe on Saturday evening plus some on 15. [Europe] is difficult from Hawaii and this contest is EU-centric, so that was very nice.” – Kent, KH6CJJ

The low bands suffered mightily with the usual seasonal static and low activity due in part to strong high band conditions during the hours of darkness. Propagation on 80 meters from North America to Europe was mostly an East Coast affair with some stations in ITU Zone 7 working a handful of contacts overnight.

Single Operator

After setting the world record in the Single Operator Unlimited, Mixed Mode, High Power category last year, Jack, R2AA (operating as P3N from Cyprus), turned off the DX cluster connection and ran away with the top spot in the World Single Operator, Mixed Mode, High Power category.

It was much more competitive in the W/VE Mixed Mode, High Power category as Bob, KQ2M, in Connecticut; Ron, VE3AT, in Ontario; and Pat, N9RV, in Montana faced off in a close three-way race. These three gentlemen live too far apart to make a direct comparison of their efforts, but a person interested in gaining insight into mounting a competitive effort from different parts of the North American continent would be well served by reviewing these logs (along with the worthy efforts undertaken at NR3X, K4ZW, and N2NT). Public logs can be found at the [ARRL Contest Website](#).

Each contender finished first in their region using their understanding of the propagation opportunities from their respective locations to maximize their score.

Contributing to their close race is the IARU HF’s use of a weighted QSO point matrix to award contacts: one point for each QSO in your own ITU Zone, three points for contacts on the same continent in a different zone, and five points for intercontinental contacts. While not perfect, more stations have opportunities to work high population areas in the world for extra points than in other worldwide contests.

The highest concentration of activity in IARU HF is on the European continent (3,034 out of the 5,587 log entries this year were from Europe). As a result, many participants focus on making as many European contacts as possible to generate a high score. As shown in the table below, Bob’s location in Connecticut played a role in his European QSO totals compared to Ron’s and Pat’s; the farther west you are, the more difficult it is to work Europe, generally.

Raw QSO totals to Europe for the Top Three Mixed Mode, High Power Entries	
ITU Zones: 17, 18, 19, 20, 27, 28, 29, 30 (UA only), 37 (CT, EA and EA6 only)	
Station	QSOs
KQ2M	2371
VE3AT	1879
N9RV	1518

Stations in the western half of North America have an even greater challenge working Europe on the low bands during the summertime. Atmospheric noise (QRN) aside, there is not a lot of common darkness between the two locations. For example, at N9RV’s sunset, sunrise is halfway across Europe! Western stations need other high QSO point opportunities to be able to compete with stations on the East Coast.

Bob and Ron recognized that 20 meters remained open to Europe throughout the night from 0300Z through 0900Z.

“Saturday night 80 and 160 [meters] were almost useless between the high [QRN] levels and weak signals - even 40 [meters] would not produce [after 0200z] although the band was open. It sounded like everyone went to 20 and 15 [meters] and stayed there!” – Bob, KQ2M

Meanwhile, Pat took advantage of being far enough west to work the comparatively higher population areas in ITU Zones 7 and 8, earning three points per contact, and working 385 five-point contacts with Japanese stations using a more favorable path from Montana than Ron and

Bob had available. Despite his disadvantage to Europe, Pat made the best of his situation in ITU Zone 6, finishing with more QSOs and more points per QSO than his two rivals to the east.

QSO totals for the Top Three Mixed Mode, High Power Entries (after log checking)			
Station	QSO Points	QSOs	Points per QSO
N9RV	11404	3304	3.45
KQ2M	9015	3064	2.94
VE3AT	8467	3131	2.70

But QSO points are only half the battle. In the end, both Bob and Ron were able to overcome Pat's impressive QSO points by finding eleven more multipliers to overcome the QSO point deficit. Bob finished first, Ron second, and Pat closely behind in third place, just 60k points shy of Ron's score.

Ed, N1UR, finished first place in the W/VE Phone Only, High Power category, which was also good enough for second place worldwide behind Pavel, RA3OA.

Roger, EA3M (operating as EF6T), set a new European record in the CW Only, High Power category operating from the EA6FO QTH in the Balearic Islands. Martin, CT3KN, finished in second place worldwide with the top African Single Operator score. Vlad, VE3JM, put a new antenna switching system to the test and beat Greg, W1KM, for W/VE CW Only, High Power honors.

In the Worldwide Mixed Mode, Low Power category, Martin, OL5Y, edged-out Sandor, HG5C, for first place. There was a "Battle of the Virginias" in the W/VE Mixed Mode, Low Power category between Jeff, N8II (West Virginia), and Ted, N9NB (Virginia), each submitting part time efforts just shy of 12 hours. Just 23,860 points separated their scores.

The closest head-to-head race goes to Nuno, CT2HOV, and Tom, PA2TMS (operating as PGØØT) in the Worldwide Phone Only, Low Power category. While Tom had more contacts and multipliers, Nuno took advantage of operating mostly on the high bands with a higher QSO point average, finishing in first place a mere 204 points ahead of Tom.

Alexander, 4X4AK, ran away with the Worldwide CW Only, Low Power title this year repeating his victory in the same category in 2021. Lar, K7SV, also won first place in the W/VE CW Only, Low Power category for the third time in four years.

The QRP categories are normally dominated by European entries given the breadth of activity on the continent. Perennial Top Ten finisher, Klára, HA5BA, led the Worldwide Mixed Mode, QRP category. Rein, ES6RW, likes to mix it up each year, usually choosing a different Phone Only category. This year, he selected Phone Only, QRP and captured top honors. Laszlo, HA6NL, also took a break from his usual low power activities to take the top spot in the CW Only, QRP category.

Jesus, LU5FC (operating as LW1F), had the best Single Operator score in South America operating in the Mixed Mode, Low Power category. Jim, N6TJ (operating as KH7M), had the best Single Operator score in Oceania operating Mixed Mode, High Power, followed by top Australian Single Operator, Allan, VK2GR, who submitted a CW Only, High Power log.

New Single Operator Continental Records			
MIX: Mixed Mode; CW: CW Only; PH: Phone Only; HP: Over 150W; LP: 150W or less; QRP: 5W or less			
Continent	Category	Callsign	Score
Europe	SO-CW-HP	EF6T (EA3M, op)	4,355,917
South America	SO-MIX-QRP	PY2PLL	23,084

Single Operator W/VE Division Records			
MIX: Mixed Mode; CW: CW Only; PH: Phone Only; HP: Over 150W; LP: 150W or less; QRP: 5W or less			
Division	Category	Callsign	Score
Central	SO-CW-LP	K9ZO	695,266
Dakota	SO-PH-HP	WØCN	171,112
Great Lakes	SO-CW-HP	NA8V	2,050,800
Hudson	SO-MIX-HP	N2NT (N2NC, op)	2,281,599
Hudson	SO-PH-HP	N2QV	1,380,016
New England	SO-PH-HP	N1UR	1,858,335
Northwestern	SO-MIX-HP	N9RV	3,031,796
Roanoke	SO-MIX-HP	NR3X	2,679,446
Roanoke	SO-CW-HP	N4AF	2,101,112
Southwestern	SO-CW-LP	N7VM	577,273
West Gulf	SO-CW-HP	WXØB (AD5Q, op)	2,153,288
Canada	SO-CW-HP	VE3JM	2,831,633

Single Operator Unlimited

IARU HF participants continue to migrate to the Single Operator Unlimited categories. This year, Unlimited log entries reached an all-time high of 2,235, comprising 40 percent of all log entries. The percentage has risen steadily each year from 27 percent in the category's inaugural year, 2015. By comparison, log entries in Single Operator categories have shrunk since 2015 from 67 percent to 51 percent in 2023.

Timo, OH1TM, (operating as OH1F), fought through depressed daytime conditions on the high bands, commenting in his [3830scores.com](https://www.3830scores.com) post, “[Ten meters] was almost dead on Saturday and [15 meters] also quite lousy,” but held on through the evening to complete a full 24-hour effort.

“At midnight the bands opened and the score started to develop favorably,” he added. Timo’s persistence earned him first place in the Worldwide Mixed Mode, High Power category in a good race against Anton, EA8DIG (operating as ED8M) in Canary Islands.

Dave, KM3T, operated from KC1XX initially to focus mostly on working the WRTC stations, but stayed longer than he expected, putting in a near 24-hour effort to capture first place in the W/VE Mixed Mode, High Power category.

Branislav, OM2KW (operating as CR3Y), returned to Madeira Island after a few years’ absence, submitting a dominating 4.79 million points for first place in the Worldwide Phone Only, High Power category. Benjamin, W3LL, staved off a challenge by Michael, VE2NTT, to win first place in the W/VE Phone Only, High Power category.

Mladen, NA1NA (operating as K1LZ), was the only W/VE operator to win his category worldwide. Operating remotely from the K1LZ superstation in Jonesboro, Maine, Mladen set a new W/VE Single Operator Unlimited, CW Only, High Power record besting challenger Matija, 9A3VM (operating as 9A5D), by nearly 800k points.

Region’s Single Operator Unlimited, CW Only, High Power standings. Photo courtesy WA8Y.

In the Mixed Mode, Low Power categories, Kevan, N4XL, won first place in W/VE from his QTH in South Carolina. Laszlo, HA8QZ (operating as HG5D), fended-off a challenge from Barney, DK8ZB (operating as DD2D), to win the Worldwide Mixed Mode, Low Power category.

Drew, K3PA, set a record in the W/VE Phone Only, Low Power category from his QTH in Kansas while finishing ninth place in the Worldwide category.

Kris, ES7GM (operating as ES7A), won first place in the Worldwide CW Only, Low Power category, decisively. Chip, N2YO, finished first place in W/VE CW Only, Low Power from his QTH in Virginia.

In Unlimited QRP categories, new records were set by Al, W1FJ, in the W/VE CW Only, QRP category with just nine hours of operation; and by Gabor, HA6OA (operating as HG6O), who reset the worldwide bar for CW Only, QRP.

Danilo, XQ4CW (operating as CE3WW), had the highest Single Operator Unlimited score from South America with his CW Only, High Power effort. Mangku, YB9DE, led all of Oceania with a new continental record in the Mixed Mode, Low Power category.



Steve, WA8Y, entered IARU HF after missing Field Day this year and reports that he “really had a fun time” in his 20-hour effort. He finished second place in the Central

New Single Operator Unlimited World Records		
MIX: Mixed Mode; CW: CW Only; PH: Phone Only; HP: Over 150W; LP: 150W or less; QRP: 5W or less		
Category	Callsign	Score
SOU-PH-QRP	YO8WW	316,784
SOU-CW-QRP	HG6O (HA6OA, op)	773,738

New Single Operator Unlimited Continental Records			
MIX: Mixed Mode; CW: CW Only; PH: Phone Only; HP: Over 150W; LP: 150W or less; QRP: 5W or less			
Continent	Category	Callsign	Score
Africa	SOU-MIX-HP	ED8M (EA8DIG, op)	4,135,400
Africa	SOU-PH-LP	EA8CNR	241,220
Asia	SOU-PH-LP	TA3NE	837,216
Asia	SOU-CW-QRP	JA6GCE	372,376
Europe	SOU-PH-QRP	YO8WW	316,784
Europe	SOU-CW-QRP	HG6O (HA6OA, op)	773,738
Oceania	SOU-MIX-LP	YB9DE	306,934
Oceania	SOU-MIX-QRP	NH6O	2,380
Oceania	SOU-PH-LP	FW1JG	79,827
South America	SOU-MIX-HP	PV2K (PY2KNK, op)	1,260,016

South America	SOU-MIX-QRP	3G3O (XQ3OP, op)	5,922
Maritime Mobile	SOU-MIX-LP	RAØLQ/MM	39,201

The longtime partnership of Robert, K5PI, and George, K5TR, operated from George's station, which is still recovering from a brutal ice storm that hit Texas in February 2023. They stayed ahead of a strong challenge from KØRF to win first place in the W/VE Multioperator, Single Transmitter category for the second consecutive year.

New Single Operator Unlimited W/VE Records		
MIX: Mixed Mode; CW: CW Only; PH: Phone Only; HP: Over 150W; LP: 150W or less; QRP: 5W or less		
Category	Callsign	Score
SOU-PH-LP	K3PA	302,445
SOU-CW-HP	K1LZ (NA1NA, op)	4,916,190
SOU-CW-QRP	W1FJ	173,799

The team from RM9A took first place in the Worldwide category, chased by fellow Asian team, UP2L, who finished a close second. Team RU1A finished further back in third place but captured the European record.

In North America, the ZF5T team from Cayman Islands also set a new continental record with their seventh place finish worldwide. The Brazilian contest team of PX2A had the best overall score from South America.

New Single Operator Unlimited W/VE Division Records			
MIX: Mixed Mode; CW: CW Only; PH: Phone Only; HP: Over 150W; LP: 150W or less; QRP: 5W or less			
Division	Category	Callsign	Score
Atlantic	SOU-PH-HP	W3LL	738,282
Central	SOU-PH-HP	W9NZ	179,080
Central	SOU-PH-LP	KD9GY	43,920
Central	SOU-CW-HP	K9NW	2,237,964
Dakota	SOU-PH-HP	WØPMO	104,386
Dakota	SOU-CW-LP	KØAD	358,956
Delta	SOU-MIX-HP	K4RO	2,360,271
Delta	SOU-MIX-LP	W6FB	202,240
Delta	SOU-PH-LP	AI4DB	16,885
Delta	SOU-CW-HP	AD4EB	1,954,940
Great Lakes	SOU-MIX-HP	AB8M	306,460
Great Lakes	SOU-MIX-LP	N8VV	323,420
Great Lakes	SOU-CW-LP	N8BJQ	274,464
Great Lakes	SOU-CW-QRP	KU4A	16,320
Hudson	SOU-PH-HP	WA2DNI	111,940
Hudson	SOU-PH-LP	W2NTV	91,188
Midwest	SOU-PH-LP	K3PA	302,445
New England	SOU-CW-HP	K1LZ (NA1NA, op)	4,916,190
New England	SOU-CW-QRP	W1FJ	173,799
Northwestern	SOU-CW-LP	K7TQ	502,803
Pacific	SOU-CW-HP	W7RN (WD6T, op)	2,004,912
Roanoke	SOU-MIX-LP	N4XL	823,686
Roanoke	SOU-CW-LP	N2YO	1,050,448
Roanoke	SOU-CW-QRP	N4IJ	80,464
Rocky Mountain	SOU-MIX-LP	W7CXX	433,380
Southeastern	SOU-CW-LP	N4AO (WC4E, op)	652,462
Southwestern	SOU-MIX-LP	KW6AA	165,998
Southwestern	SOU-CW-LP	AA2IL	267,960
Southwestern	SOU-CW-QRP	WQ6X	37,471
West Gulf	SOU-PH-LP	KI5MM	127,182
West Gulf	SOU-CW-QRP	KJ5T	37,674
Canada	SOU-PH-QRP	VE3BFU	1,920

New Multioperator, Single Transmitter W/VE Division Records		
Division	Callsign	Score
Central	NV9L	2,026,976
Great Lakes	K8AZ	2,874,586
Northwestern	N7DX	1,778,334
Rocky Mountain	KØRF	2,918,720
Southwestern	ND7K	2,283,175
West Gulf	K5TR	3,226,744

Multioperator, Two Transmitter, Low Power

The HG7T contest team finished first place in the Worldwide Multioperator, Two Transmitter, Low Power category. HG7T also defeated every World Radiosport Team Championship team in the official IARU HF results.

The WRTC competition applies different scoring rules from the official IARU HF rules to determine final standings for the event, but otherwise operates within the same Multioperator, Two Transmitter, Low Power constraints. With the advent of this new category, WRTC teams are included in the official standings. However, their logs have been rescored reflecting IARU HF rules. As a result, the order of finish is slightly different from the official WRTC result, but WRTC teams filled out the remainder of the Worldwide Top Ten.

The Rio DX Group, PR1T, took a break from building their new contest station to give it a bit of a shakedown. They finished with the top score in South America.

Multioperator, Single Transmitter

New Multioperator, Two Transmitter, Low Power Continental Records		
Continent	Callsign	Score

Europe	HG7T	3,439,952
North America	XE1CRG	474,192
Oceania	DX1EVM	105,575
South America	PR1T	1,395,009

New Multioperator, Two Transmitter, Low Power W/VE Division Records		
Division	Callsign	Score
New England	W1FM	249,736
Roanoke	K4OV	197,415

From the lonely middle of the South Atlantic Ocean, Gilbert, ZD7BG, has been a frequent IARU HF participant from St. Helena Island in recent years, providing the sparsely populated ITU Zone 66 multiplier to as many as he can, typically on the high bands.

In Sub-Saharan African-mainland activity, Pierpalo, D44PM, and Silvano, 9Q1AA, were the sole log submitters from ITU Zones 46 and 52, respectively, providing key multipliers to those few who caught them on the air in their limited time.

Mike, V51MA; Bernie, ZS4TX; Wolfgang, ZS1WO, Phillip, ZS6FY; and Ulric, ZS2ABE all chipped in with part time efforts to hand out the ITU Zone 57 multiplier.

François, F5NGA (operating as FR4KR), led a small ITU Zone 53 contingent with his Single Operator, CW Only, Low Power effort from Réunion Island before *Radio Club Contest Ouest Reunion* dismantled the FR4KR station for “a long break,” as reported on their ORZ.com page. Fellow Réunion Island resident, Ann, FR8TZ; and Mauritius residents, Clive, 3B8CW, and Mike, 3B8HK, also handed out the ITU Zone 53 multiplier.

Across Asiatic Russia, ITU Zones 20, 21 and 23 were activated by a total of six stations. The two-man team of Aleksey, R9JR, and Denis, UA8J, operated RC9J in the Multioperator Single Transmitter category as the sole log submission from ITU Zone 21 with a sizable score exceeding 1.5 million points. Leon, UA0QN, was the solitary submission from Zone 23.

ITU Zone 33 spreads across parts of Asiatic Russia and northern China and had three submissions from Valery, UA0UV; Chen, BA2BA; and Wang, BG2DVL, working mostly stations in Europe.

ITU Zone 42, which consists of the country of Nepal and a portion of western China, was represented by Robert, S53R (operating as 9N7AA), who submitted a 16-hour effort along with Clark, BG0CAB, who also put in a sizable effort.



Some of the nineteen members of the DX1EVM Multioperator, Two Transmitter, Low Power team from Indonesia. Together, they set the Oceania continental record in this new category. Photo courtesy DV1IHW.

Activity Outside Europe and North America

With the vast majority of participants operating from Europe and North America, along with big scores often submitted from parts of Africa and Asia, we often focus almost entirely on winning efforts from these areas.

However, no DX contest is all that interesting without participation from all corners of the world. In this section, we’ll highlight some efforts by individuals who took the time to submit logs from areas that may not be a source of rate, but provide valuable multipliers that add excitement to everyone participating in the IARU HF World Championship.

In the Patagonia region of South America, ITU Zone 16 is where you’ll find eleven Argentinian and Chilean contesters, led this year by Sergio, LU7YS, who collectively handed out a valuable multiplier.



Guo, BD3TE, at his station in Tianjin, China. Guo finished with the second highest Single Operator Unlimited, Mixed Mode, Low Power score in China. Photo courtesy BD3TE.

One hundred twenty-two Indonesian hams submitted logs this year. Indonesia's over 17,000 islands are split across ITU Zones 51 and 54 with all but five entries coming from the latter. Several stations across Asia and Europe owe a debt of gratitude to Frans, YB9YSS; Petrus, YC9WFT; Mardan, YB9YKU; Aerizal, YB9UA; and Paulin, YD9UW for activating ITU Zone 51 with their part time efforts.

Down Under, Australia and New Zealand are well represented, overall, but ITU Zone 55, which encompasses the state of Queensland and Northern Territory, was activated by Cory, VK4KA (operating as VJ4A), together with part time efforts from David, VK4SP, and Keith, VK4TT (operating as VJ4O).

ITU Zone 56 might not have been possible to work without the efforts of Antoine, 3D2AG, from Fiji, and Philippe, FK4QX, from New Caledonia.

The AH2R Multioperator Single Transmitter team on Guam were the sole entry from ITU Zone 64.

Near the top of the world, less than 3½ miles north of the 80th parallel on Ellesmere Island, Canada, sits the Polar Environment Atmospheric Research Laboratory's Ridge Lab. The lab is the QTH of Eureka Amateur Radio Club station VYØERC, just over the border line of ITU Zone 75 which spreads across the Arctic. Pierre, VE3KTB, activated the club station giving out nearly 250 QSOs in a Single Operator Unlimited, Mixed Mode, High Power effort. Elsewhere in the Arctic, Oleg, RD1A, gave out a few contacts from ITU Zone 75 while operating maritime mobile.

When you can, please thank these dedicated contesters for providing interesting multipliers from their respective

corners of the world. It is also important to note that when you come across someone from a remote corner of the world in a DX contest, adhering to pileup etiquette is important. Often, pandemonium ensues when these folks show up on the bands. When we call incessantly or out of turn, we discourage operators from returning year after year. Be a good pileup citizen; be smart about sending your call at the right time rather than all the time. Dealing with overly aggressive contesters makes giving out a rare multiplier not fun and slows everything down for all of us.

Headquarters and IARU Special Stations

For many years, the top three positions in the national society headquarters standings have been dominated by the German (DARC), French (REF) and Spaniard (URE) teams. The battle for HQ dominance between DAØHQ (DARC) and TMØHQ (REF) continues this year as the German team posted the top score for the second consecutive year with the French team finishing again in second. EF4HQ (URE) was also in the mix this year, but they were just edged out by the United Kingdom team, GR2HQ (RSGB) who have been quietly rising through the standings for the last few years.

After helping activate W1AW/3 (ARRL) in 2022 from two of the largest stations in the United States (K3LR and W3LPL), Frank, W3LPL, along with three other members of the Potomac Valley Radio Club (PVRC), Amy, W3AMY; Rich, KE3Q; and Gary, WR3R, traveled to QTH of Alex, KH6YY, on the Hawaiian island of Oahu, to join Alex and Kimo, KH7U, to activate W1AW/KH6 as the SSB team. For CW, ARRL operations were held on the Big Island at the QTH of Lloyd, KH6LC, where Lloyd; Ken, N6KB; Robert, NH6V; Stan, AH6KO; and Mark, WH7W, worked through the challenging conditions from their remote part of the world with some lean hours over the first half of the contest, but had a "strong finish," according to Lloyd in his [3830scores.com](https://www.3830scores.com) report.

NU1AW (IARU) operations were held this year at the W1AW Maxim Memorial Station at the ARRL Headquarters in Newington, Connecticut. The dedicated team of Sierra, W5DX; Bart, W9JJ; Bob, NQ1R; Steven, WV1X; Kevin, K8EAL; Becky, W1BXY; and Christina, KC1TDM, activated the station for several hours.



Members of the Korean Amateur Radio League's HLØHQ Headquarters station. Photo courtesy HL2CFY.

IARU Headquarters Stations	
Call	Score
DAØHQ	28,788,375
TMØHQ	27,759,336
GR2HQ	25,290,824
EF4HQ	25,233,900
S5ØHQ	21,844,186
YTØHQ	20,730,728
SNØHQ	18,949,435
9AØHQ	18,937,854
SK9HQ	18,550,575
OH1HQ	18,447,858
OPØHQ	17,565,040
HGØHQ	14,329,890
EIØHQ	13,930,424
YRØHQ	13,496,850
E7HQ	11,989,281
OEØHQ	11,555,166
LT4RCA	10,495,800
OZ1HQ	10,355,152
II9HQ	9,843,108
PA6HQ	9,713,388
W1AW/KH6	9,191,260
8NØHQ	7,302,592
CX1AA	5,758,622
HB9HQ	5,558,757
OM3HQ	5,540,787
ER7HQ	4,583,348
R4HQ	4,225,347
PJ2HQ	4,149,090
ZF1A	3,401,196
A47HQ	3,061,152
V31HQ	3,040,232
LZØHQ	2,898,126
UN1HQ	2,816,128
Z3ØHQ	2,605,670
DXØHQ	2,506,581

CR5HQ	2,421,000
VE7RAC	2,399,868
PY1HQ	2,155,192
A71HQ	1,950,484
ZL6HQ	1,810,874
B8HQ	1,744,200
OA4O	1,675,790
7A3HQ	1,014,650
HBØHQ	939,455
C37HQ	879,320
V85HQ	774,837
E2HQ	736,332
OY1CT	730,873
ZP5AA	705,180
S77HQ	465,045
HLØHQ	339,438
NU1AW	312,354
TIØHQ	261,900
AT1HQ	129,495
9M2A	112,317
VR2HK	72,616
4O1HQ	61,880
B9HQ	41,150
STØHQ	38,874
XE1LM	36,225
B3HQ	22,793
VK3WIA	17,732
ZS9HQ	3,450

IARU Administrative Council Stations	
W5ZN	1,607,968
SM6EAN	298,820
VE6SH	59,358
IARU R1	
HB9JOE	162,432
PA2LS	118,544
IV3KKW	54,901
DJ3HW	49,140
DB3KO/P	1,500
IARU R2	
PT2ADM	37,630
YS1MS	35,409
VE3YV	4,288
IARU R3	
JH1NBN	230,538
JA1CJP	213,744
VJ3O	37,100

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

World Radiosport Team Championship 2022

After a one-year delay due to complications imposed by the COVID-19 pandemic, the ninth World Radiosport Team Championship, WRTC 2022, was held in Emilia-Romagna, Italy.

While the last three WRTCs held in Russia, USA, and Germany, created nearly uniform Field Day-style operating sites using tents for shelter and generator power for electricity, WRTC 2022 utilized the Italian *agriturismo* industry, a collection of farms, vineyards, and other agricultural facilities that offer visitor accommodations, as the primary source of operating sites across the region. Many teams, but not all, were offered basic overnight accommodations and were able to operate indoors using commercial power.



Randy, K5ZD, and Tom, W2SC (foreground), operating as I42G in WRTC 2022. They finished in 8th place and were the top-scoring team from the USA. Photo courtesy K5ZD.

While the antenna system was still standardized across all teams, the accommodations were not equal across the board. Operating sites ranged from comfortable air-conditioned hotel rooms with full, private bathrooms to bare-bones rustic sites, such as an operating desk inside an aircraft hanger with no bathroom or overnight accommodations.

Some of this inconsistency was the result of a last minute scramble by the WRTC 2022 organizers to find additional operating sites after devastating floods ripped through the region in May. According to [Wikipedia](#), seventeen people perished and damage exceeded €10 billion. The owners of *Agriturismo il Pero Tondo* in Bologna, host to the I47P team of Katsushiro, JH5GDM, and Bob, WA1Z, lost their entire watermelon crop to the floods.

As shown in the picture below, the WRTC 2022 antenna system consisted of a single guyed mast, approximately 30 feet in height, supporting a rotatable triband beam that featured two elements on 20 meters, two elements on 15 meters, and three elements on 10 meters. A half-wave 40-meter dipole and 80-meter inverted V were fixed underneath the beam.



An example of the WRTC 2022 antenna system. Photo courtesy WA1Z.

Fifty-eight two-person teams attended, having qualified from various geographical regions across the world. Each team used special call signs starting with the “I4” prefix (designating the Emilia-Romagna region) followed by a number and letter.



A good “behind the scenes” perspective of a common WRTC station configuration. This is the backend of the I43L station from Youth Team #3 operators Ljubomir, YU5EEA, and Srdan, 9A3SMS. The tribander was fed through a triplexer to allow teammates to use the antenna at the same time on different bands. Bandpass filters were also put inline for each band to help cut down interstation interference, all ahead of a six-port, two radio antenna switch. The white audio mixer at the bottom of the picture is an example of what many WRTC referees used to listen to audio from both radios at the same time. Photo courtesy YU5EEA and 9A3SMS.

I44W was the callsign of the gold medal team of Yuri, VE3DZ, and Yarik, UW7LL, who were officially a “donor team,” but represented the war-torn country of Ukraine, proudly, in their impressive show of contesting skill.

WRTC 2018’s hometown heroes from Germany, Manfred, DJ5MW, and Stefan, DL1IAO, (operating as I43C) qualified as one of three teams from a region that encompassed the DXCC entities of Denmark, Germany, Poland, and Kaliningrad and took the silver medal for the second consecutive WRTC.

The bronze medal went to the Croatian team, Vedran, 9A7DX, and Zvonko, 9A3LG, who qualified from a southern European region that encompassed parts of northern and central Italy, San Marino, Slovenia, Croatia, Corsica, Austria, Switzerland, and Liechtenstein.

Can’t Wait ‘til Next Year...

The IARU HF World Championship is truly an unparalleled event on the contest calendar. It’s a tremendously popular, worldwide event held during the Northern Hemisphere’s summer, which affords us a unique opportunity to experience interesting seasonal HF propagation that can be both challenging (sometimes to the point of frustration) and exciting.

Everyone gets to work everyone for QSO credit. If operating phone isn’t your thing, just operate CW! If you are a chatterbox, just operate Phone! If you are a master-of-it-all, do both modes! Don’t have an amplifier? No problem! Got a homebrew QRP radio that you brought with you on vacation? Throw a wire in a tree and fire it up!

The point is there are so many ways to operate the IARU, there is an official category for you. Even better, it’s only 24 hours long; if the sun is shining and the lawn still needs to be mowed before Monday, there’s still time left in the weekend! It’s the perfect opportunity to have some great fun on the bands in July.

Save the date for another exciting weekend in the 2024 IARU HF World Championship scheduled for July 13-14th starting at 1200Z!



A veritable “who’s who” of USA and Canadian contesters at WRTC 2022. (back row, l-to-r) John, VE3EJ; Randy, K5ZD; Dick, N6AA; David, N6AN; and Chris, KL9A. (front row, l-to-r) Andy, N2NT; Doug, K1DG; Steve, N2IC; Tim, K3LR; Tom, W2SC; John, W2GD; and Dan, N6MJ. Photo courtesy K5ZD

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			
KQ2M	3,209,088	P3N (R2AA, op)	5,905,575	KM3T (@KC1XX)	2,915,689	OH1F (OH1TM, op)	4,341,216
VE3AT	3,091,968	UPØL (UN9LW, op)	3,528,945	K4RO	2,360,271	ED8M (EA8DIG, op)	4,135,400
N9RV	3,031,796	KQ2M	3,209,088	W3UA	1,744,470	YU5R (YT2AAA, op)	3,061,016
NR3X	2,679,446	VE3AT	3,091,968	K9OM	1,321,567	RM5F	2,925,738
K4ZW	2,482,002	E77EA	3,091,340	W1GD	1,293,558	KM3T (@KC1XX)	2,915,689
N2NT (N2NC, op)	2,281,599	N9RV	3,031,796	K1AR	1,122,480	YT9X (YTØC, op)	2,579,910
KØEJ	1,645,492	NR3X	2,679,446	K1JB	929,856	K4RO	2,360,271
N2PP	1,054,489	UT5UGR	2,636,064	XM3I	857,534	YL7X (YL2LY, op)	2,260,244
K7NT	936,616	K4ZW	2,482,002	N6AR	830,248	II8K	2,207,428
N4OX	861,840	N2NT (N2NC, op)	2,281,599	K4RUM	751,238	HA6P	2,200,436
Mixed-Mode, Low Power				Mixed-Mode, Low Power			
N8II	386,880	OL5Y	1,201,980	N4XL	823,686	HG5D (HA8QZ, op)	2,113,056
N9NB	363,020	HG5C (HA5BMS, op)	1,113,888	WO1N	550,844	DD2D (DK8ZB, op)	1,910,640
VE5SF	263,538	LW1F (LU5FC, op)	785,634	W7CXX	433,380	SP9XCN	1,374,064
KØEA	237,159	RU7M	660,080	W4RN	366,540	M3AWD	1,314,396
VE3KOT	221,361	UF5A	627,792	N8VV	323,420	EU2F	1,213,056
K5FUV	182,269	UA6GO	618,616	WN4AFP	310,954	LY7R (LY2BKT, op)	1,040,856
KI2D	169,048	BD4VGZ	450,076	W9AV	256,875	YL1ZF	861,492
AI6O	150,280	EW1P	434,700	NK4O	210,180	N4XL	823,686
VE3NFN	121,368	N8II	386,880	NF3R	208,080	RV9UP	813,696
N7ZZ	110,448	N9NB	363,020	W6FB	202,240	R3DCX	811,360
Mixed-Mode, QRP				Mixed-Mode, QRP			
W3PAX	7,700	HA5BA	300,990	K8ZT	27,097	DK3WE	1,008,768
NØLMQ	4,202	LZ5Y (LZ1YE, op)	271,377			IZ8JFL	353,336
VA3IIF	1,632	OK6OK	205,587			HA8IB	261,994
		9A2EY	125,294			YU1LM	175,696
		ED4H (EA4HWT, op)	114,140			PC2F	60,043
		EW8G	97,194			UD2F	43,472
		CT7/DH8BQA	97,100			IC8TEM	41,580
		HA3GC	83,062			JK1TCV	38,872
		SP4NKJ	77,112			HA1WD	37,968
		7K1CPT	74,290			DL1DXA	34,713
Phone Only, High Power				Phone Only, High Power			
N1UR	1,858,335	RA3OA	1,973,925	W3LL	738,282	CR3Y (OM2KW, op)	4,790,030

N2QV	1,380,016	N1UR	1,858,335	VE2NTT	684,199	OR1X	2,447,404
NG1M	464,750	ED3C (EA3IBV, op)	1,737,252	NA4DA	349,325	SN7D (SQ7D, op)	1,832,182
W7WA	350,592	N2QV	1,380,016	W9NZ	179,080	IB8A (I8QLS, op)	1,730,476
KB8O	288,259	TF/4X6TT	1,368,354	W4KW	173,880	IKØPHY	1,657,065
N4MM	178,128	IK3UNA	1,253,736	W3FR	141,588	EA3CI	1,636,404
WØCN	171,112	R3RZ	944,547	WA2DNI	111,940	IB9A (IZ2WFL, op)	1,580,544
N5GF	103,752	DMØY (DL3BQA, op)	857,667	WØPMO	104,386	PY5QW	1,397,568
K9MWM	79,054	RW9LL	796,146	N8IVN	83,284	MD7C (M5RIC, op)	1,285,492
KV8P	66,960	S51CK	728,728	W4SDX	69,969	PY4JW	1,050,658
Phone Only, Low Power				Phone Only, Low Power			
K5DHY	98,210	CT2HOV	584,463	K3PA	302,445	TA3NE	837,216
KS2G	88,884	PGØØT	584,259	VA3IDD	176,176	SP3H	759,528
AB1F	88,361	YO7SR	523,525	KI5MM	127,182	M1T (MØKYB, op)	440,977
VE2HIT	63,535	MIØI	466,992	W2NTV	91,188	R9RA	439,425
VA3KRT	62,040	SN7T	274,866	AJ4HP	80,630	UA9R	426,351
N2ESP	61,367	DM5B (DG6IMR, op)	261,660	KD2JOE	74,338	SV3RPQ	410,304
KF7CG	58,473	OK6AB	241,242	KC1OT	65,880	SO7E	316,998
VE3RVZ	52,287	YO6GUU	200,200	VE1FSM	57,204	8S8S (SM5XSH, op)	313,789
WA4JA	48,288	DM2BR	194,296	VE3RGO	50,416	K3PA	302,445
N6OKU	47,450	DL6MRM	180,400	KD9GY	43,920	F8ADY	265,073
Phone Only, QRP				Phone Only, QRP			
W6QU (W8QZA, op)	15,180	ES6RW	307,338	VE3BFU	1,920	YO8WW	316,784
WWØWB	2,726	YO9FNP	194,950			HA5BGG	65,436
K3RWN	450	IZ4AIF	84,125			CT2GSN	39,101
		HB9EGA	80,949			UZ7M (UT9MZ, op)	34,532
		PY6GOE	45,551			MM7BWK	13,804
		MI7DGO	44,400			YO5DSG	6,815
		SP5LCT	43,452			PU5ALE	3,456
		PY2PPZ	27,477			VE3BFU	1,920
		HA1TI	26,322			YO4LUP	1,292
		BG6VBM	19,467			YO8KNN (YO8OLY, op)	288
CW Only, High Power				CW Only, High Power			
VE3JM	2,831,633	EF6T (EA3M, op)	4,355,917	K1LZ (NA1NA, op)	4,916,190	K1LZ (NA1NA, op)	4,916,190
W1KM	2,454,192	CT3KN	3,016,293	N3RS	2,681,503	9A5D (9A3VM, op)	4,140,242
WXØB (AD5Q, op)	2,153,288	VE3JM	2,831,633	K9NW	2,237,964	OK7W	3,919,392
N4AF	2,101,112	RG6G	2,664,221	AB3CX	2,052,500	UW1M	3,908,514
NA8V	2,050,800	LY5W	2,585,862	W7RN (WD6T, op)	2,004,912	P3X (5B4AMM, op)	3,764,565
W6YX (N7MH, op)	1,529,331	W1KM	2,454,192	AD4EB	1,954,940	HA5JI	3,547,566
N6TV	1,431,872	WXØB (AD5Q, op)	2,153,288	N3AD	1,795,526	HG3N (HA3LN, op)	3,304,233
K6NA	1,244,680	N4AF	2,101,112	VE9AA	1,645,742	R8TT	3,134,784
W9RE	1,064,217	NA8V	2,050,800	VE3NNT	1,549,575	UA4M (UA4LCH, op)	2,970,968

KZ5D	671,240	W6YX (N7MH, op)	1,529,331	K3MM	1,240,036	RN3QO	2,816,715
CW Only, Low Power				CW Only, Low Power			
K7SV	1,108,306	4Z4AK	1,873,800	N2YO	1,050,448	ES7A (ES7GM, op)	3,049,920
K1VUT	785,325	DL3JAN	1,245,312	N4AO (WC4E, op)	652,462	UN4Q (UA4Z, op)	1,897,764
K9ZO	695,266	LA2AB (LA7MFA, op)	1,154,860	W3KB	620,100	EC3A	1,602,640
VE3TM	693,744	K7SV	1,108,306	WA1FCN	507,232	SP2R	1,405,833
N7VM	577,273	M5W	986,040	K7TQ	502,803	N2YO	1,050,448
W7YAQ	536,112	OM7K (OM7RU, op)	930,602	N9NC	487,648	EE3O (EA3O, op)	1,027,788
W1QK	442,636	M15I (GIØRQK, op)	846,183	KG9X	457,760	RW9DX	1,018,000
WJ9B	373,296	K1VUT	785,325	N2GA	453,492	OM7LW	1,014,006
K5MR	354,078	HA7UI	780,966	WY7M	358,980	UA3RBR	906,865
WB4TDH	308,176	J11RXQ	742,980	KØAD	358,956	RA9AP	896,694
CW Only, QRP				CW Only, QRP			
VE3SIF	34,136	HA6NL	411,309	W1FJ	173,799	HG6O (HA6OA, op)	773,738
K1WAT	22,632	UT4UBZ	235,376	N4IJ	80,464	JA6GCE	372,376
K8CN	14,473	US5VX	154,559	KØ1H	51,675	DM7AA	341,829
W7LG	10,980	S53AR	138,040	KJ5T	37,674	HG6C (HA6IAM, op)	280,731
K2EKM	10,944	PE2K	96,915	WQ6X	37,471	HG3C (HA3HX, op)	216,240
WS9V	7,252	YL3FW	95,865	KU4A	16,320	W1FJ	173,799
AA4SD	2,280	UA6AK	93,345	K9AXT	4,756	UR2Y (USØYW, op)	152,928
N6HI	1,116	G3YMC	73,602	AB8FJ	826	YT5YTT	120,640
KE4WKH	676	YO4BEW	67,935	K2GMY	100	9A/S51Z	85,436
KJ4YM	572	F6CWA	62,480	AH7RF/W5	1	N4IJ	80,464
Multiperator, Single Transmitter, High Power				Multiperator, Two Transmitter, Low Power			
K5TR	3,226,744	RM9A	7,342,026	W1FM	249,736	HG7T	3,439,952
KØRF	2,918,720	UP2L	7,046,720	K4OV	197,415	I44W	3,312,960
K8AZ	2,874,586	RU1A	6,698,928	NN4SA	74,675	I43C	3,257,882
K9RS	2,558,730	PX2A	4,395,207	KN4JJA	2,470	I49D	3,123,456
ND7K	2,283,175	UA4S	4,294,634			I47L	3,089,093
NV9L	2,026,976	HG6N	3,669,574			I42M	3,070,710
N7DX	1,778,334	ZF5T	3,491,152			I47M	2,965,550
N4SS	1,532,640	II2S	3,425,237			I44C	2,891,980
K3AJ	1,296,126	K5TR	3,226,744			I46Q	2,828,035
NX6T	1,116,744	RT4G	3,094,236			I47V	2,827,257

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			Midwest Region			Central Region			Southeast Region			Northeast Region		
Pacific, Northwestern, and Southwestern ARRL Divisions; Alberta; British Columbia, and NT RAC Sections			Dakota, Midwest, Rocky Mountain and West Gulf ARRL Divisions; Manitoba and Saskatchewan RAC Sections			Central and Great Lakes ARRL Divisions; Greater Toronto Area, Ontario East, Ontario North, and Ontario South RAC Section			Delta, Roanoke, and Southeastern ARRL Divisions			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														
N9RV	3,031,796	MIX-HP	VE5CPU	20,020	MIX-HP	VE3AT	3,091,968	MIX-HP	NR3X	2,679,446	MIX-HP	KQ2M	3,209,088	MIX-HP
K7NT	936,616	MIX-HP				VE3TAZ	110,630	MIX-HP	K4ZW	2,482,002	MIX-HP	N2NT (N2NC, op)	2,281,599	MIX-HP
W1PR	73,656	MIX-HP				KE8E	2,616	MIX-HP	KØEJ	1,645,492	MIX-HP	N2PP	1,054,489	MIX-HP
KX7M	23,329	MIX-HP							N4OX	861,840	MIX-HP	W2XL	129,312	MIX-HP
N7XCZ	13,908	MIX-HP							AI4WW	58,656	MIX-HP	K3MD	77,562	MIX-HP
WA7BNM	88,690	MIX-LP	VE5SF	263,538	MIX-LP	VE3KOT	221,361	MIX-LP	N8II	386,880	MIX-LP	KI2D	169,048	MIX-LP
K7LR	43,290	MIX-LP	KØEA	237,159	MIX-LP	VE3NFN	121,368	MIX-LP	N9NB	363,020	MIX-LP	N1NQD	66,595	MIX-LP
K6RAD	36,437	MIX-LP	AI6O	150,280	MIX-LP	N7ZZ	110,448	MIX-LP	K5FUV	182,269	MIX-LP	W3KN	48,934	MIX-LP
WA8ZNC	29,568	MIX-LP	KAØPQW	95,586	MIX-LP	K8WU	26,268	MIX-LP	KX4UI	88,683	MIX-LP	KA2FIR	48,587	MIX-LP
N6AJS	10,752	MIX-LP	AF5CC	92,803	MIX-LP	W8FSM	17,670	MIX-LP	KB4CG	74,052	MIX-LP	N1ET	34,808	MIX-LP
			NØLMQ	4,202	MIX-QRP	VA3IIF	1,632	MIX-QRP				W3PAX	7,700	MIX-QRP
W7WA	350,592	PH-HP	WØCN	171,112	PH-HP	KB8O	288,259	PH-HP	N4MM	178,128	PH-HP	N1UR	1,858,335	PH-HP
AC7GL	43,120	PH-HP	K9MWM	79,054	PH-HP	KV8P	66,960	PH-HP	N5GF	103,752	PH-HP	N2QV	1,380,016	PH-HP
AI6LY	20,068	PH-HP	KDØJLE	50,854	PH-HP	VA3ZNQ	65,100	PH-HP	K4JC	59,290	PH-HP	NG1M	464,750	PH-HP
NC6R	11,128	PH-HP	WXØZ	34,476	PH-HP	KE8NBC	29,546	PH-HP	W2LAT	31,125	PH-HP	WA2GOT	37,315	PH-HP
K6DAV	6,055	PH-HP	VE4SG	6,253	PH-HP	VA3CQG	13,570	PH-HP	K4QQG	28,576	PH-HP	KC3RRF	12,626	PH-HP
N6OKU	47,450	PH-LP	K5DHY	98,210	PH-LP	VA3KRT	62,040	PH-LP	N2ESP	61,367	PH-LP	KS2G	88,884	PH-LP
K7HKR	24,080	PH-LP	KIØR	18,172	PH-LP	VE3RVZ	52,287	PH-LP	KF7CG	58,473	PH-LP	AB1F	88,361	PH-LP
W1DGL	11,656	PH-LP	NW5Q	17,212	PH-LP	W8LYO	45,600	PH-LP	WA4JA	48,288	PH-LP	VE2HIT	63,535	PH-LP
VA6AGR	7,326	PH-LP	KFØHCN	16,072	PH-LP	KE8VGU	45,580	PH-LP	W9TCV	28,712	PH-LP	VE2IAA	36,991	PH-LP
NX7W (N7FLT, op)	6,992	PH-LP	AF5MN	14,484	PH-LP	VE3GJP	32,040	PH-LP	KV4ZY	23,030	PH-LP	N2MTG	28,993	PH-LP
W6QU (W8QZA, op)	15,180	PH-QRP	WWØWB	2,726	PH-QRP							K3RWN	450	PH-QRP
W6YX (N7MH, op)	1,529,331	CW-HP	WXØB (AD5Q, op)	2,153,288	CW-HP	VE3JM	2,831,633	CW-HP	N4AF	2,101,112	CW-HP	W1KM	2,454,192	CW-HP

N6TV	1,431,872	CW-HP	N5AW	231,261	CW-HP	NA8V	2,050,800	CW-HP	KZ5D	671,240	CW-HP	K1IMI (N4CW, op)	512,325	CW-HP
K6NA	1,244,680	CW-HP	KØFX	165,846	CW-HP	W9RE	1,064,217	CW-HP	WQ5L	294,560	CW-HP	K3UL	445,704	CW-HP
N16W	499,872	CW-HP	W4IFI	141,373	CW-HP	K8GL	222,789	CW-HP	KQ4R	291,211	CW-HP	N2MF	387,834	CW-HP
AJ6V	358,203	CW-HP	N3BB	112,728	CW-HP	K8MP	213,072	CW-HP	NN4SS	132,712	CW-HP	K1KI	352,428	CW-HP
N7VM	577,273	CW-LP	K5MR	354,078	CW-LP	K9ZO	695,266	CW-LP	K7SV	1,108,306	CW-LP	K1VUT	785,325	CW-LP
W7YAQ	536,112	CW-LP	KD2KW	148,248	CW-LP	VE3TM	693,744	CW-LP	WB4TDH	308,176	CW-LP	W1QK	442,636	CW-LP
WJ9B	373,296	CW-LP	NØAX	141,588	CW-LP	W1NN	306,880	CW-LP	K3JT	225,872	CW-LP	K2NV	120,450	CW-LP
VE6BBP	217,536	CW-LP	N5XE	59,004	CW-LP	KV8Q	247,572	CW-LP	WA5SOG	206,790	CW-LP	W2QL	94,820	CW-LP
W6ZL	69,408	CW-LP	NN5T	43,200	CW-LP	VE3MA	168,405	CW-LP	K4EJ	168,300	CW-LP	N2EY	94,340	CW-LP
N6HI	1,116	CW-QRP	N5OBC	70	CW-QRP	VE3SIF	34,136	CW-QRP	K1WAT	22,632	CW-QRP	K8CN	14,473	CW-QRP
						WS9V	7,252	CW-QRP	K2EKM	10,944	CW-QRP	W7LG	10,980	CW-QRP
									AA4SD	2,280	CW-QRP			
									KE4WKH	676	CW-QRP			
									KJ4YM	572	CW-QRP			
Single Operator Unlimited														
NK6A	142,236	MIX-HP	KØMD	384,375	MIX-HP	K9OM	1,321,567	MIX-HP	K4RO	2,360,271	MIX-HP	KM3T (@KC1XX)	2,915,689	MIX-HP
N6WT	125,248	MIX-HP	KVØI	219,950	MIX-HP	XM3I	857,534	MIX-HP	N6AR	830,248	MIX-HP	W3UA	1,744,470	MIX-HP
K6KR	119,040	MIX-HP	KØBJ	209,095	MIX-HP	VA3DF	648,945	MIX-HP	K3IE	750,800	MIX-HP	W1GD	1,293,558	MIX-HP
N7RVD	85,351	MIX-HP	W5GCX	23,750	MIX-HP	WT2P	416,608	MIX-HP	WO4O	598,526	MIX-HP	K1AR	1,122,480	MIX-HP
NQ7R	75,938	MIX-HP	NT5SM	20,374	MIX-HP	KW9A	370,980	MIX-HP	N4IQ	461,600	MIX-HP	K1JB	929,856	MIX-HP
VE6TL	200,703	MIX-LP	W7CXX	433,380	MIX-LP	N8VV	323,420	MIX-LP	N4XL	823,686	MIX-LP	WO1N	550,844	MIX-LP
KW6AA	165,998	MIX-LP	WB5N	153,258	MIX-LP	W9AV	256,875	MIX-LP	W4RN	366,540	MIX-LP	NF3R	208,080	MIX-LP
WN6W	57,494	MIX-LP	K5TXM	14,175	MIX-LP	VA3OKG	110,776	MIX-LP	WN4AFP	310,954	MIX-LP	W2RDS	108,966	MIX-LP
AD7XG	19,278	MIX-LP	N5DTT	10,150	MIX-LP	W8TB	100,092	MIX-LP	NK4O	210,180	MIX-LP	K2AL	81,046	MIX-LP
KN6VVQ	18,585	MIX-LP	VE5UO	3,588	MIX-LP	K9PG	74,847	MIX-LP	W6FB	202,240	MIX-LP	KI7WX	72,720	MIX-LP
						K8ZT	27,097	MIX-QRP						
KE6GFI	61,320	PH-HP	WØPMO	104,386	PH-HP	W9NZ	179,080	PH-HP	NA4DA	349,325	PH-HP	W3LL	738,282	PH-HP
N7GCO	56,700	PH-HP	KØTRL	32,697	PH-HP	VA3LR	40,172	PH-HP	W4KW	173,880	PH-HP	VE2NTT	684,199	PH-HP
W7ZZ	30,855	PH-HP	AB5KM	9,396	PH-HP	VA3PC	24,220	PH-HP	W4SDX	69,969	PH-HP	W3FR	141,588	PH-HP
KØNG	25,668	PH-HP	WD5ENH	1,938	PH-HP	N9TCA	13,020	PH-HP	KG2MM	58,509	PH-HP	WA2DNI	111,940	PH-HP
K6DW	17,952	PH-HP	W5RIR	1,460	PH-HP	W8MQT	5,952	PH-HP	N5GI	28,203	PH-HP	N8IVN	83,284	PH-HP
WZ8T	41,749	PH-LP	K3PA	302,445	PH-LP	VA3IDD	176,176	PH-LP	AJ4HP	80,630	PH-LP	W2NTV	91,188	PH-LP
K7JKM	3,776	PH-LP	KI5MM	127,182	PH-LP	VE3RGO	50,416	PH-LP	NN4RB	39,648	PH-LP	KD2JOE	74,338	PH-LP
VE6CLG	1,160	PH-LP	N7MZW	28,584	PH-LP	KD9GY	43,920	PH-LP	K4SBZ	37,905	PH-LP	KC1OT	65,880	PH-LP
N6AJR	1	PH-LP	KØTJT	3,348	PH-LP	WA9YI	6,300	PH-LP	AA5NT	27,885	PH-LP	VE1FSM	57,204	PH-LP
WZ8T	41,749	PH-LP	W5IOH	2,064	PH-LP	WS6K	2,987	PH-LP	AI4DB	16,885	PH-LP	KA2KON	40,502	PH-LP
						VE3BFU	1,920	PH-QRP						

W7RN (WD6T, op)	2,004,912	CW-HP	N5RZ	1,014,189	CW-HP	K9NW	2,237,964	CW-HP	AD4EB	1,954,940	CW-HP	K1LZ (NA1NA, op)	4,916,190	CW-HP
N7AT (K8IA, op)	892,234	CW-HP	N5OT	404,716	CW-HP	VE3NNT	1,549,575	CW-HP	N4UU	1,095,024	CW-HP	N3RS	2,681,503	CW-HP
VE7LWW	806,080	CW-HP	NØAT	359,992	CW-HP	WA8Y	758,625	CW-HP	W4NZ	970,632	CW-HP	AB3CX	2,052,500	CW-HP
KA6BIM	761,280	CW-HP	N5TJ	344,908	CW-HP	WI9WI	745,998	CW-HP	KM5G	891,613	CW-HP	N3AD	1,795,526	CW-HP
K7QA	594,384	CW-HP	WØVX	284,768	CW-HP	VE3CT	693,357	CW-HP	NR4M	532,922	CW-HP	VE9AA	1,645,742	CW-HP
K7TQ	502,803	CW-LP	WY7M	358,980	CW-LP	KG9X	457,760	CW-LP	N2YO	1,050,448	CW-LP	W3KB	620,100	CW-LP
AA2IL	267,960	CW-LP	KØAD	358,956	CW-LP	N8BJQ	274,464	CW-LP	N4AO (WC4E, op)	652,462	CW-LP	N9NC	487,648	CW-LP
W7VO	150,216	CW-LP	KG5U	342,384	CW-LP	WB8JUI	213,332	CW-LP	WA1FCN	507,232	CW-LP	N2GA	453,492	CW-LP
K6WSC	64,314	CW-LP	KØTG	191,513	CW-LP	WT9U	204,800	CW-LP	AD8J	337,824	CW-LP	K2LE	357,336	CW-LP
WAØWWW	47,357	CW-LP	AD1C	145,152	CW-LP	KYØQ	168,980	CW-LP	K1GU	188,874	CW-LP	W1WBB	249,260	CW-LP
WQ6X	37,471	CW-QRP	KJ5T	37,674	CW-QRP	KU4A	16,320	CW-QRP	N4IJ	80,464	CW-QRP	W1FJ	173,799	CW-QRP
K2GMY	100	CW-QRP	AH7RF /W5	1	CW-QRP	AB8FJ	826	CW-QRP	K9AXT	4,756	CW-QRP	KO1H	51,675	CW-QRP
Multioperator Single Transmitter														
ND7K	2,283,175	MSHP	K5TR	3,226,744	MSHP	K8AZ	2,874,586	MSHP	AD4ES	926,491	MSHP	K9RS	2,558,730	MSHP
N7DX	1,778,334	MSHP	KØRF	2,918,720	MSHP	NV9L	2,026,976	MSHP				K3AJ	1,296,126	MSHP
NX6T	1,116,744	MSHP	NØMA	578,493	MSHP	N4SS	1,532,640	MSHP				K3CCR	448,812	MSHP
N6WM	923,544	MSHP	W7SU	1,330	MSHP	VA3YLR	25,200	MSHP				W3ZGD	174,352	MSHP
KT7E	645,392	MSHP				VE3VM	13,888	MSHP				K3JO	62,985	MSHP
Multioperator Two Transmitter														
									K4OV	197,415	M2LP	W1FM	249,736	M2LP
									NN4SA	74,675	M2LP			
									KN4JJA	2,470	M2LP			