



ARRL International DX CW Contest 2018 Results

By Charlie Carroll, K1XX (k1xx@k1xx.com)

Are we there yet? Are we there yet? It's an often-heard refrain from the back seat. In our case, it's more like are we at the bottom of the cycle yet? For the optimist, we're there now and better conditions are right around the corner; for the pessimist, another few years of poor conditions; and, for the die-hard contester it doesn't matter. They'll just go out and continue to compete regardless of conditions.

Sure, where to go to compete might be a reasonable question. Do you stay at home, head to the Caribbean, Central America, or perhaps even Africa? Now, with serious remote contesting a reality, there's a whole new aspect to the location question.

This year, the arc from the Leeward/Windward Islands thru the ABC Islands (Aruba-Bonaire-Curacao), into Central America is ever-popular for the DX contester. Two big scores while operating remote have solidified Maine and New York as hosts for serious competitors a on the US side. However, since these are remote operations, the actual operators can be almost anywhere as long as there is a good internet connection.

With conditions somewhat down from previous years, the number of logs was similarly down by ten percent from 2017, about 1700 US/VE entries and just shy of 2000 DX entries. The numbers of QSOs is also down about ten percent from last year. The following breakdown of the number of entries in each category shows relative agreement between US/VE and DX entries, with the exception of some single-band categories.

Records & Finishes

Near the bottom of the cycle, most of the all-time records were relatively safe. However, a few stations found the motivation, means, and conditions to pick up a new record.

On the DX side, Larry, F6FVY had set his sights on cracking the current 20-year old South American mono-40 record. Larry operated FY5KE producing a score of 394k to claim the new record. Moving a little further to the northwest, John, W2GD, once again put Aruba on the map with another single op record. As in the past, John operated P4ØW, scoring over 4.5M points that eclipsed his 2017 record for the Single Op Unlimited, Low Power category. Unexpected 10-meter openings to the US added several hundred QSOs, with many new mults that

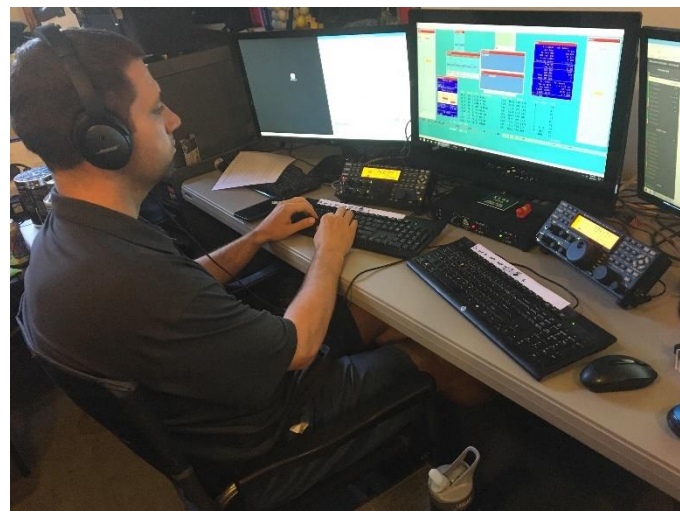
ordinarily would not be there for this point in the sunspot cycle. John also benefitted from low QRN levels that come from storms over South America.

Log Submittal by Category

Category	W/VE	DX
SOHP	219	174
SOLP	354	381
SOQRP	47	46
SOUHP	546	434
SOULP	282	295
SOUQRP	11	29
MSHP	20	39
MSLP	6	15
M2	17	16
MM	14	8
SO-160	19	31
SO-80	19	61
SO-40	51	133
SO-20	61	263
SO-15	16	31
SO-10	4	5

(See page 2 for category codes)

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Top Single Op, KL9A, operating "from the garage." Chris was operating remote through a station in Maine and garnered the top single op position. (Photo – Chris Hurlbut, KL9A)

To the north, a couple records fell to US operators. W9SN, operating from TN, broke the 2017 Multi-Single, Low Power record set in 2017 with a score of almost 2.9M points. For these operators, 20 and 40-meters prove to be the big workhorses by producing more than 80 percent of their QSOs. On the West Coast, N7MH operated W6YX to blow away the 2015 record. Mike scored more than 950,000 points in this record-setting effort.

DX Musings

Leading the DX Single Ops this year was Nate, N4YDU operating from the superb station of N3KS in Costa Rica. Nate operated TI7W as SO2R with a brand-new pair of Flex radios. Quiet conditions and a new wire beam on 80 allowed him to grab over 1,000 QSOs on that band; three other bands also had over 1,000 QSOs. Even 10-meters popped open for a while to produce 300+ QSOs.

On the opposite side of the arc, Andy, N2NT again operated as V47T, this time to a second-place finish. Prior to the contest, he had to replace most of the outside hardware that was damaged in last year's hurricanes. Going into a 48-hour contest after a week of antenna work is not a recipe for great success. Andy also was not as fortunate as Nate and had to suffer through noisy low-band conditions.

Top Ten - DX

Single Operator, High Power

TI7W (N4YDU, op)	6,884,742
V47T (N2NT, op)	5,751,999
P49Y	5,655,339
6Y2T (VE3DZ, op)	5,500,212
KH7B (K4XS, op)	4,163,832
FM5BH	3,929,400
CR6K (CT1ILT, op)	3,242,430
KH6TU (AD6E, op)	1,671,624
IK2YCW (IZ3EYZ, op)	1,494,465
HP3SS	1,460,394

Single Operator, Low Power

ZF9CW	4,874,001
VP9/W6PH	3,235,086
ED8W (OM5RW, op)	1,777,038
J35X	1,138,410
CO2RQ	951,210
D44EE (OZ1BII, op)	939,918
KH6CJJ	802,164
EA8CN	705,738
YV8AD	514,710
XE1AY	507,384

Single Operator, QRP

NP4Z	764,604
HB9BMY	146,574
LZ2RS	54,855
JR4DAH	48,384
HG6C (HA6IAM, op)	45,342
JQ1NGT	37,608
HA5BA	34,320
DM2DZM	24,888
G3L (G3LHJ, op)	24,804
JH1APZ	24,804

Stan, K5GO topped out the low-power pack while operating ZF9CW using simple wire vertical antennas, two radios, and a ton of skill and experience. Coming in second is the perennial competitor Kurt, W6PH operating from Bermuda. The sunspot doldrums typically have a huge negative effect on high-band contacts between VP9 and the contact-rich Northeast. This year was no different. Certainly 10-meters and to some degree 15-meter contacts approached the status of "hen's teeth." The nice thing is that low-band contacts are plentiful even when running only 100 watts.

In the QRP category, Felipe, NP4Z, ran away from the European and Japanese challengers, with a score five times higher than that of second-place HB9BMY. Proximity to the North American mainland made him awfully hard to beat, even with the significant damage from Hurricane Maria to his station.



V47T/N2NT in the mountaintop "shack," literally and figuratively. Though there are plenty of antennas and radios, other facilities are somewhat lacking. It gives one incentive to operate the whole 48 hours rather than indulging in a nap. (Photo – Doug Grant, K1DG)

Category Codes

M2 = Multioperator, Two Transmitter
MM = Multioperator, Multitransmitter
MSHP = Multioperator, Single Transmitter, High Power
MSLP = Multioperator, Single Transmitter, Low Power
SO-10 = Single Operator, 10 Meters
SO-15 = Single Operator, 15 Meters
SO-160 = Single Operator, 160 Meters
SO-20 = Single Operator, 20 Meters
SO-40 = Single Operator, 40 Meters
SO-80 = Single Operator, 80 Meters
SOHP = Single Operator, High Power
SOLP = Single Operator, Low Power
SOQRP = Single Operator, QRP
SOUHP = Single Operator Unlimited, High Power
SOU LP = Single Operator Unlimited, Low Power
SOUQRP = Single Operator Unlimited, QRP

Moving to the Single-Op Unlimited category, Alan, N3AD captured the top ranking for Single Op Unlimited, High Power as V26M. As a frequent visitor to this station, Alan is very familiar with the station and propagation from this location. Being at the eastern end of the Caribbean arc, Alan also knows that he has to catch those rare 10-meter QSOs when they pop out of the noise.



The simple but well-equipped V26M operating position. (Photo - Alan Donziger, N3AD)

SOUHP had one of the closer races with the first two entries separated in score by only five percent. Operating PS2T was Tom, PY2YU. The V26M and PS2T stations are separated by 2,800 miles which is a distinct advantage on the low bands for Alan. He garnered an extra 500 Qs and 30+ mults over Tom on 160 and 80-meters.

John, W2GD appeared as always from P4ØW — approximately 140 trips for him now — and accomplished that rarest of the rare this year – setting a new record! Just because we are at the bottom of the cycle doesn't mean big scores are impossible. Strong work!

Single Operator Unlimited, High Power

V26M (N3AD, op)	3,864,654
PS2T (PY2YU, op)	3,687,795
LX7I (DL5SE, op)	2,064,186
EA8RM	1,926,828
EA6FO (EA3AIR, op)	1,757,985
HG3R	1,735,992
SN7Q (SP7GIQ, op)	1,610,307
CE2MVF	1,475,472
SN8B (SP8PRZ, op)	1,419,552
CX2BR	1,092,267

Single Operator Unlimited, Low Power

P4ØW (W2GD, op)	4,572,423
KP4KE (DK8ZB, op)	4,119,330
XE7S (XE2S, op)	2,062,230
J6/KG9N	1,712,640
XE2B	961,074
EC4TA	596,607
JH1EAQ	511,560
UZ3A (UX1AA, op)	381,888
MI5I (GIØRQK, op)	359,964
S57KM	341,226
* New Record	

Single Operator Unlimited, QRP

V31MA	543,696
LZ9W (LZ1UQ, op)	499,872
IZ3NVR	142,236
LU7DID	135,240
OK2FD	125,421
EA3NN	69,651
HB2QRP (HB9BAS, op)	54,480
MM3AWD	43,665
S51Z	27,720
IW3ILM	23,652

At the QRP scale, V31MA prevailed over a surprisingly strong challenge from Europe as LZ9W (LZ1UQ, op) just missed 500K points.



K5GO wrestling with radials at ZF9CW. (Photo – Rita Stockton)

Single Operator, 160-Meters

NP2J (K8RF, op)	139,830
KV4FZ	70,794
C6ARU (N4UM, op)	57,024
S57UN	32,040
CO2AN	29,988
LZ2WO	27,612
HGØR (HAØNAR, op)	22,230
S53O	17,640
EI5KF	15,810
OM2XW	10,350

Single Operator, 80-Meters	
XE2X	199,980
CS2C	182,628
TM6M (F1AKK, op)	165,699
CO2JD	118,104
S52AW	107,568
S57AL	106,920
M5B	103,032
E7ØT	91,008
IR1G (IZ1YPF, op)	88,740
9A8M (9A3XU, op)	86,100
Single Operator, 40-Meters	
FY5KE	394,002
F4DXW	266,580
S5ØC (S53RM, op)	243,024
S51YI	237,960
C6AKQ (N4BP, op)	229,923
S57Q	215,412
OK3C (OK2ZC, op)	209,304
E7/KU1CW	197,709
YT7A (YU7GW, op)	196,794
S56X	192,792
Single Operator, 20-Meters	
TM5Y (F8DBF, op)	313,296
OH8X (OH6UM, op)	293,166
C6AUM (K4RUM, op)	255,468
LU5FC	238,500
IR1Y (IK1YDB, op)	230,214
OM2Y (OM2IB, op)	223,560
SO2R (SP2FAX, op)	219,783
YT1NP	195,858
9A4M	192,780
DL6WT	191,880
Single Operator, 15-Meters	
TO1A	339,840
PX2A (PY2LSM, op)	294,882
PX5Z	196,200
PT9DX	95,760
PY1VOY	66,258
VK2GR	57,246
LU3MAM	52,416
LU1ICX	45,522
PY2MC	30,240
CO6HLP	12,852
Single Operator, 10-Meters	
LW8DQ	84,084
YV1FM	11,340
PY3KN	3,672
CE3OP	2,940
CR14ØAA (CU3AA, op)	60

This year the Multioperator categories drew lots of competition from the Caribbean. ZF1A took up the challenge of MSHP operation for the fourth straight year. Manned by N6MJ and K6AM, they updated some already-solid station hardware to enhance their versatility across the bands. Likewise, P4ØE used the established P49V station. The team took advantage of being further south and the short openings on 10-meters to augment their QSO and multiplier totals. The guys at VP2MSS had to set up all their antennas in the week prior to the contest. Their planned Multi-Two operation was scuttled due to interstation interference.

Multioperator, Single Transmitter, High Power

ZF1A	6,203,790
P4ØE	5,663,175
VP2MSS	5,329,422
KP2M	5,217,366
NP2N	4,759,233
VP5K	4,402,200
CU4DX	3,853,080
KH7M	3,623,697
EA5RS	2,347,587
IR4M	2,311,932

Multioperator, Single Transmitter, Low Power

V3T	4,003,548
ZW8T	1,620,396
OT6M	618,144
HC2GRC	195,426
F8KLY	56,355
PX5P	40,683
ZV7T	28,743
JH1OES	24,255
JK2VOC	10,908
SO1ØØZHP	10,800

Multioperator, Two Transmitter

PJ4A	8,528,400
CR3DX	4,996,800
T48K	4,410,468
IR4X	2,846,655
M6T	2,571,912
EA2RY	2,557,500
ED7P	2,495,727
GM5A	2,193,048
ZL3X	1,693,848
HG7T	1,471,245

Multioperator, Multitransmitter

PJ2T	8,923,770
KH6J	5,535,648
KH6LC	5,269,005
CR3W	4,489,254
9A1A	2,608,830
JA3YBK	1,587,666
ES1ØØC	454,080
UA4M	286,272

W/VE Musings

The big news this year in the Single Op, High Power category has to be the one-two finish by two different remote stations. KM7W, operated by KL9A took advantage of the remote station in Eastport, Maine. A glance at Google Earth and the photo of the 40-meter beam give you an idea of the head start afforded by this location.

Finishing number two in this category, N5DX also operated remotely through the station of N2QV in New York. While Kevin did not have Maine's geographical advantage, he was able to keep VY2ZM and K1ZZ at arm's length with higher QSO and multipliers on 40 and 20 meters.



K1ZZ looking pretty fresh, most likely before the contest. (Photo - Linda Churma-Sumner, KA1ZD)

Though not without its own set of issues and peculiarities, remote operation will continue to be a game-changer. Folks are willing to make the time and financial investments that push the scoring envelope further and further. It will be interesting, as conditions improve over the next few years, to see where these stations place in the standings.

Top Ten - US and Canada

Single Operator, High Power

KM7W (KL9A, op)	5,368,041
N5DX	4,993,650
VY2ZM	4,456,062
K1ZZ	4,365,720
AA1K	3,482,622
KQ2M	3,270,828
N4AF	3,027,645
N1UR	3,005,640
W9RE	2,897,832
VY2TT (K6LA, op)	2,856,600

Single Operator, Low Power

N8II	1,376,352
K5KU	1,287,678
VE3VN	1,253,304
WØUO	898,605

KJ4QHL	842,688
N1IX	798,192
WB4TDH	751,575
WJ9B	656,397
N9CK	622,419
K1BX	559,617

Single Operator, QRP

N7IR	228,480
K8CN	186,507
W6JTI	171,936
K2YGM	131,040
K3TW	117,468
K2YAZ	91,512
NA1ME	82,584
W6QU (W8QZA, op)	76,230
N9SE	73,932
KQ2RP	46,452

In contrast, the top SOLP and SOQRP stations were well off the favored East Coast as N8II and N7IR won their respective categories from WV and AZ. N7IR was by far the most western station to win a US and Canada Single Op category this year.

The Single Op Unlimited, High Power category saw stations from the Frankfort Radio Club grab the top three slots. Bud separated himself from Chaz in the number two position by a roughly 200 QSO difference on 80 meters. Similarly, Chaz had roughly 200 more contacts on 20 meters to separate himself from Sig in third place.

Single Operator Unlimited, High Power

AA3B	4,880,271
K3WW	4,438,710
N3RS	4,253,502
K5ZD	3,866,148
VA2WA	3,379,056
N3RD	3,233,790
N2NT (WW2Y, op)	3,005,667
K1RX	2,875,860
W8FJ	2,715,840
N2MM	2,550,201

Single Operator Unlimited, Low Power

KS1J	1,670,256
W3KB	1,299,270
W1PY	1,212,720
K3AU (K2YWE, op)	1,173,420
W6YX (N7MH, op)	953,988
N9NB	904,491
W9XT	874,944
VO1HP	833,748
N1EN	821,925
N2RJ	688,491

Single Operator Unlimited, QRP

VE3UTT	300,000
W1TW	95,040
K8ZT	93,177
KU1N	47,223
NTØZ	36,309
NW3R (NH7C, op)	31,209
K2GMY	17,316
W1IE	13,392
KJ9X	6,075
VA3YT	714



The 80-meter 4-square at K1ZZ poking up through "Sherwood Forest." (Photo – Dave Sumner, K1ZZ)



40-meter beam at the Eastport, Maine remote station... saltwater, saltwater. (Photo – Ray Higgins, W2RE)

Single Operator, 160-Meters

W4ZV	42,120
K1WHS	31,476
K4PI	26,901
N1LN	25,380
KVØQ	22,500
W2VO	12,393
N4XD	11,520
W4AA	10,800
W8UVZ	7,434
W3TS	5,814

Single Operator, 80-Meters

W3BGN	130,644
W5ZN	123,324
VE9AA	89,352
W1XX	71,040
VE3PN	45,627
W1HI	31,980
K4FJ	31,806
KØPJ	23,100
W3SO (W3YOZ, op)	12,408
N4OO	12,096

Single Operator, 40-Meters		Multioperator, Single Transmitter, High Power	
N2MF	459,510	W2FU	4,540,737
N8OO	418,233	K2QMF	3,719,070
W7XI (N6CW, op)	228,570	K5TR	3,408,384
W3EF	203,112	KE1J	3,336,960
W7WA	200,448	W5MX	2,660,112
KA1IS	108,240	AA9A	2,575,737
AG4W	100,584	K3PH	2,188,860
W2EG	89,856	AD4ES	2,073,288
NA5NN	72,633	K1KP	1,726,200
VE1DT	67,452	W1OO	1,620,864
Single Operator, 20-Meters		Multioperator, Single Transmitter, Low Power	
KU2M	573,540	W9SN	2,879,550
W2UP	435,456	VE9BK	1,354,680
K9BGL	364,140	W4TG	328,860
N4OX	341,712	W3YI	179,820
W8WA	286,965	VA7DZ	136,620
W6YA	216,384	WBØZWW	17,577
VE2FWW	209,475	Multioperator, Two Transmitter	
WD5K	208,680	K1LZ	6,669,744
KM4HI	202,020	VE3JM	5,214,306
N7CW	156,960	K8AZ	4,953,069
Single Operator, 15-Meters		NØNI	3,992,157
N2PP	36,270	K2AX	3,976,938
K4OAQ	34,452	K4TCG	3,443,286
KZ5J	14,550	N1MM	3,213,000
N4NM	11,214	VE3YAA	2,009,280
KO8Z	9,840	W1DX	1,802,511
AA4NP	7,956	N1RR	1,708,011
WK9U	6,195	Multioperator, Multitransmitter	
K3ZA	5,643	W3LPL	8,792,364
WA7BNM	3,456	K3LR	8,427,000
N6RM	2,880	NR4M	7,139,154
Single Operator, 10-Meters		NR5M	6,171,060
K4WI	2,583	W4RM	5,216,862
KN4JN	252	K1TTT	5,193,636
WB2AMU	189	K1KI	3,240,507
WB7FDQ	35	WØAIH	2,750,280
		N6BV	2,278,656
		N5AA	1,745,226

Once again, K3LR and W3LPL battled it out for the top slot in the Multi-Multi category. This year, Frank and crew took advantage of a more eastern and slightly more southern location than Tim's crew. Near the bottom of the sunspot cycle, this difference in location can produce longer openings and somewhat better propagation on the high bands. This same phenomenon is even seen in New England when stations in Rhode Island and southern Massachusetts have better propagation than those in New Hampshire and Maine.

Accuracy Index

Climbing to the top of any category requires certain operating skills and generally some good hardware. Accuracy is one of the skills that will have a significant impact on your final score. Running at high rates is one thing, but accurate logging is a necessity for high scores.

The Log Checking Report (aka LCR) provides good insight into the source of errors in your log after all of the log cross checking has been completed. The computer error rates give a good idea of good QSOs vs bad or busted QSOs. But maintaining a low error rates gets more difficult as your operating time and QSO numbers go up.

The concept of Accuracy Index was developed to give a better insight into operating accuracy and take a step beyond simple Error Rate. The formula for Accuracy Index has been discussed a number of time in the last few years. It is calculated using the following equation.

$$\text{Accuracy Index} = \log_{10} (\text{Good QSOs}) + 10 \times (1 - \text{Error Rate})$$

The Accuracy Index formula recognizes that the more QSOs you make, the harder it is to maintain high accuracy.

	W/VE			DX		
Single Op		QSOs	Accuracy Index		QSOs	Accuracy Index
	K1ZZ	3626	13.540	6Y2T (VE3DZ, op)	6002	13.723
	KM7W (KL9A, op)	4313	13.532	TI7W (N4YDU, op)	6954	13.717
	N5DX	4087	13.465	P49Y	5686	13.701
	VY2ZM	3668	13.369	ZF9CW	5112	13.669
	AA1K	3242	13.347	V47T (N2NT, op)	6031	13.646
Single Op Unlimited						
	AA3B	3614	13.486	P4ØW (W2GD, op)	4612	13.570
	K5ZD	3016	13.416	PS2T (PY2YU, op)	4189	13.559
	N3RS	3192	13.400	KP4KE (DK8ZB, op)	4554	13.534
	VA2WA	2799	13.389	V26M (N3AD, op)	4105	13.459
	K3WW	3347	13.289	HG3R	2693	13.361
Multiop						
	W3LPL	5554	13.583	PJ4A	8287	13.855
	K3LR	5344	13.537	PJ2T	8698	13.844
	W4RM	3935	13.448	ZF1A	6236	13.746
	NR5M	4247	13.410	KH6J	6233	13.726
	K1LZ	4588	13.404	CR3W	5243	13.661

It's really interesting to see that the top four Accuracy Indexes come from a Multi-Multi, a Multi-Two, a Multi-Single, and a Single Op. These four stations had a total of sixteen operators, all touching the keyboard and capable of making errors at any time. Complete listings of Accuracy Index for all but paper logs are published as a separate list on the ARRL results website. You can see there how your accuracy stacks up.

The last facet of accurate logging is what's known as a Golden Log. How many QSOs can you log without any errors at all, or in other words, a ZERO error rate. This year we had 80 logs of more than 100 QSOs that were judged to be a Golden Log. Topping out this list was JE1NVD with 418 QSOs.

CW Golden Logs			
No Errors (Error Rate = 0)			
Call	Category	QSOs	
JE1NVD	SOUHP	418	
K9MMS	SOUHP	400	
AC5K	SOUHP	382	
SQ3R (SQ3HMM, op)	SOULP	350	

EU6AF	SOUHP	329
SM6CMU	SOHP	327
KM2L	SOHP	327
N9XX	SOULP	310
HB9FKK (IK1PMR, op)	SOUHP	305
DL6RAI	SOULP	280
N6MU	SOLP	259
OK4DZ	SOULP	257
JR4DAH	SOQRP	256
K3TW	SOQRP	251
UR5MM	SOLP	233
NA5J	SOULP	229
SM7CIL	SOLP	225
AD1C	SOULP	219
WA1DRQ	SOUHP	215
PA5TT	SOUHP	212
JA6BZI	SOUHP	212
WØUY	SOUHP	204
PA2W	SOLP	187
YT7AA	SOULP	183
HA5BA	SOQRP	176
ON4KNP	SOULP	175
JN3TSY	SOLP	173

DK3AX	SOHP	172
SV1RUX	SOLP	169
AB1J	SOULP	168
URØIQ	SOUHP	167
N6VH	SOUHP	162
DL1RNN	SOULP	162
BD7OB	SOLP	162
RD4F	SOHP	157
JA1QOW	SOHP	156
JR7RZK	SOHP	153
W4TTM	SOULP	152
KØVG	SOUHP	149
PA3ARM	SOLP	149
KE3GK	SOULP	148
K1SX	SOQRP	145
SP3DOF	SOULP	141
WØZQ	SOUHP	138
W5EK	SOULP	137
KQ1F	SOLP	136
A14WW	SOHP	136
UR5FEO	SOQRP	132
W3UL	SOUHP	132
SJ2W (SM2WMV, op)	SOUHP	124
W2CDO	SOUHP	123
ND3R	SOLP	122
OH6RE	SOUHP	120
IK6BAK	SOLP	120
KT4Q	SOUHP	120
JS1KKY	SOLP	119
OH3EX	SOUHP	119
AC5AA	SOLP	118
JR4VEV	SOUHP	118
DL7ALM	SOULP	118
KA9FOX	SOUHP	117
W3SFG	SOULP	114
IK4RQE	SOLP	114
OK2BLD	SOLP	114
EA5IHK	SOLP	113
W1AO	SOUHP	113
JR1NKN	SOQRP	111
N7JI	SOQRP	109
G4DDL	SOLP	108
A16Z	SOUHP	107
NA2X	SOULP	107
G4ERW	SOULP	107
IK4OMU	SOULP	106
VE7VR	SOHP	105
K2ZR	SOLP	105
SP6MLX	SOULP	105
N8FYL	SOULP	104
WA2MBP	SOUHP	104
EA7AAW	SOQRP	103
DJ9RR	SOUHP	101
IZ1DXS	SOLP	100
R7AT	SOUHP	100
KØTG	SOUHP	100
KS4X	SOLP	100

Congratulations to all who joined in the fun and don't forget to get those antennas and stations tuned up for the 2019 ARRL International DX Contest CW, which runs Feb. 16 and 17. Results will appear in the August, 2018 issue of *QST*.

Continental Winners

Africa

	ED8W	
Single Operator, Low Power	(OM5RW, op)	1,777,038
Single Operator, QRP	EA8RP	3,744
Single Operator Unlimited, High Power	EA8RM	1,926,828
Single Operator Unlimited, Low Power	EA8OM	249,696
Single Operator, 40 Meters	EA8ZS	87,804
Single Operator, 20 Meters	EA8KC	55,350
Single Operator, 15 Meters	SU9JG	189
Multioperator, Two Transmitter	CR3DX	4,996,800
Multioperator, Multitransmitter	CR3W	4,489,254

Asia

Single Operator, High Power	JA7ACM	286,314
Single Operator, Low Power	J11RXQ	359,037
Single Operator, QRP	JR4DAH	48,384
Single Operator Unlimited, High Power	JAØQNJ	804,888
Single Operator Unlimited, Low Power	JH1EAQ	511,560
Single Operator Unlimited, QRP	JG1EIQ	4,788
Single Operator, 160 Meters	JA8NFV	4,708
Single Operator, 80 Meters	JE1LFX	43,200
Single Operator, 40 Meters	TA3D	129,591
Single Operator, 20 Meters	JR2IOB	117,264
Single Operator, 15 Meters	JJ1LBJ	306
Multioperator, Single Transmitter, High Power	JH4UYB	1,119,168
Multioperator, Single Transmitter, Low Power	JH1OES	24,255
Multioperator, Two Transmitter	JH8YOH	963,900
Multioperator, Multitransmitter	JA3YBK	1,587,666

Europe

Single Operator, High Power	CR6K (CT1ILT, op)	3,242,430
Single Operator, Low Power	IK1JJM	224,448
Single Operator, QRP	HB9BMY	146,574
Single Operator Unlimited, High Power	LX7I (DLSSE, op)	2,064,186
Single Operator Unlimited, Low Power	EC4TA	596,607
	LZ9W	
Single Operator Unlimited, QRP	(LZ1UQ, op)	499,872
Single Operator, 160 Meters	S57UN	32,040
Single Operator, 80 Meters	CS2C	182,628
Single Operator, 40 Meters	F4DXW	266,580
	TM5Y	
Single Operator, 20 Meters	(F8DBF, op)	313,296
Single Operator, 15 Meters	OH6QU	9,309
	CR14ØAA	
Single Operator, 10 Meters	(CU3AA, op)	60
Multioperator, Single Transmitter, High Power	CU4DX	3,853,080

Multioperator, Single Transmitter, Low Power	OT6M	618,144
Multioperator, Two Transmitter	IR4X	2,846,655
Multioperator, Multitransmitter	9A1A	2,608,830

North America

Single Operator, High Power	TI7W (N4YDU, op)	6,884,742
Single Operator, Low Power	ZF9CW	4,874,001
Single Operator, QRP	NP4Z	764,604
Single Operator Unlimited, High Power	V26M (N3AD, op)	3,864,654
Single Operator Unlimited, Low Power	KP4KE (DK8ZB, op)	4,119,330
Single Operator Unlimited, QRP	V31MA	543,696
Single Operator, 160 Meters	NP2J (K8RF, op)	139,830
Single Operator, 80 Meters	XE2X	199,980
Single Operator, 40 Meters	C6AKQ (N4BP, op)	229,923
Single Operator, 20 Meters	C6AUM (K4RUM, op)	255,468
Single Operator, 15 Meters	CO6HLP	12,852
Single Operator, 10 Meters	V31TF (DG7RO, op)	27
Multioperator, Single Transmitter, High Power	ZF1A	6,203,790
Multioperator, Single Transmitter, Low Power	V3T	4,003,548
Multioperator, Two Transmitter	T48K	4,410,468

Oceania

Single Operator, High Power	KH7B (K4XS, op)	4,163,832
Single Operator, Low Power	KH6CJJ	802,164
Single Operator, QRP	DU7/N7ET	12,099
Single Operator Unlimited, High Power	T8NC (AA4NC, op)	339,264
Single Operator Unlimited, Low Power	VK5GR	24,924
Single Operator, 80 Meters	KH6/WB4JTT	52,020
Single Operator, 40 Meters	AH6KO	46,644
Single Operator, 20 Meters	ZL1BBW	39,732
Single Operator, 15 Meters	VK2GR	57,246
Multioperator, Single Transmitter, High Power	KH7M	3,623,697
Multioperator, Two Transmitter	ZL3X	1,693,848
Multioperator, Multitransmitter	KH6J	5,535,648

South America

Single Operator, High Power	P49Y	5,655,339
Single Operator, Low Power	YV8AD	514,710
Single Operator Unlimited, High Power	PS2T (PY2YU, op)	3,687,795
Single Operator Unlimited, Low Power	P4ØW (W2GD, op)	4,572,423
Single Operator Unlimited, QRP	LU7DID	135,240
Single Operator, 160 Meters	PP5JR	3
Single Operator, 80 Meters	PY2PT	57,240
Single Operator, 40 Meters	FY5KE	394,002
Single Operator, 20 Meters	LU5FC	238,500
Single Operator, 15 Meters	TO1A	339,840
Single Operator, 10 Meters	LW8DQ	84,084
Multioperator, Single Transmitter, High Power	P4ØE	5,663,175
Multioperator, Single Transmitter, Low Power	ZW8T	1,620,396

Multioperator, Two Transmitter	PJ4A	8,528,400
Multioperator, Multitransmitter	PJ2T	8,923,770

Division Winners

Single Operator, High Power

Atlantic	AA1K	3,482,622
Central	W9RE	2,897,832
Dakota	WØOR	254,349
Delta	K1GU	942,840
Great Lakes	NA8V	2,243,850
Hudson	N5DX	4,993,650
Midwest	W9MAF	301,056
New England	KM7W (KL9A, op)	5,368,041
Northwestern	N9RV	2,036,604
Pacific	W7RN (N6TV, op)	1,942,545
Roanoke	N4AF	3,027,645
Rocky Mountain	N2IC	2,815,176
Southeastern	NN7CW	1,638,975
Southwestern	K6NA	918,459
West Gulf	WXØB (AD5Q, op)	2,484,162
Canada	VY2ZM	4,456,062

Single Operator, Low Power

Atlantic	KE2WY	297,906
Central	N9CK	622,419
Dakota	KEØZ	53,163
Delta	K5KU	1,287,678
Great Lakes	WA8RCN	414,636
Hudson	N2RI	79,860
Midwest	ADØRW	156,420
New England	N1IX	798,192
Northwestern	WJ9B	656,397
Pacific	N6ZFO	288,075
Roanoke	N8II	1,376,352
Rocky Mountain	KC7QY	61,632
Southeastern	KJ4QHL	842,688
Southwestern	KI6RRN	337,428
West Gulf	WØUO	898,605
Canada	VE3VN	1,253,304

Single Operator, QRP

Atlantic	K3WWP	26,676
Central	N9SE	73,932
Dakota	KEØTT	17,955
Delta	WB4GHZ	21,168
Great Lakes	K2YAZ	91,512
Hudson	K2YGM	131,040
Midwest	AKØM	2,349
New England	K8CN	186,507
Northwestern	N7JI	14,715
Pacific	W6JTI	171,936
Roanoke	KS4YX	12,141
Rocky Mountain	NO2D	990
Southeastern	K3TW	117,468
Southwestern	N7IR	228,480
West Gulf	N3CI	14,697
Canada	VA3PCJ	7,728

Single Operator Unlimited, High Power

Atlantic	AA3B	4,880,271
Central	K9NW	2,187,342
Dakota	KØKX	1,575,135
Delta	K3IE	1,379,286
Great Lakes	K1LT	2,269,353

Hudson	N2NT (WW2Y, op)	3,005,667	Midwest	KØSRL	14,250
Midwest	K3PA	1,068,012	New England	KA1IS	108,240
New England	K5ZD	3,866,148	Northwestern	W7WA	200,448
Northwestern	K7RL	992,376	Roanoke	W4JKC	24,966
Pacific	W6DR	528,840	Rocky Mountain	K7ULS	1,539
Roanoke	N4RV	1,341,420	Southeastern	AG4W	100,584
Rocky Mountain	NG7M	574,317	Southwestern	W7XI (N6CW, op)	228,570
Southeastern	WO4O	1,545,255	West Gulf	AE5P	6,612
Southwestern	WØRIC (W4IX, op)	1,251,900	Canada	VE1DT	67,452
West Gulf	AD5A	1,663,200	Single Operator, 20 Meters		
Canada	VA2WA	3,379,056	Atlantic	N3XF	123,075
Single Operator Unlimited, Low Power			Central	K9BGL	364,140
Atlantic	W3KB	1,299,270	Dakota	NØGEF	127,350
Central	W9XT	874,944	Great Lakes	W8WA	286,965
Dakota	NØUR	321,399	Hudson	KU2M	573,540
Delta	WF7T	304,980	Midwest	WNØL	12,150
Great Lakes	N8VV	602,082	Northwestern	K7ABV	29,280
Hudson	N2RJ	688,491	Pacific	K6GHA	23,868
Midwest	AAØAI	358,608	Roanoke	W2UP	435,456
New England	KS1J	1,670,256	Rocky Mountain	NKØE	18
Northwestern	K7TM	135,840	Southeastern	N4OX	341,712
Pacific	W6YX (N7MH, op)	953,988	Southwestern	W6YA	216,384
Roanoke	N9NB	904,491	West Gulf	WD5K	208,680
Rocky Mountain	KØUK	429,024	Canada	VE2FWW	209,475
Southeastern	K1KNQ	476,406	Single Operator, 15 Meters		
Southwestern	K6WSC	342,630	Atlantic	N2PP	36,270
West Gulf	N4IJ	457,653	Central	WK9U	6,195
Canada	VO1HP	833,748	Delta	AI4IC	168
Single Operator Unlimited, QRP			Great Lakes	KO8Z	9,840
Atlantic	NW3R (NH7C, op)	31,209	Midwest	NØJK	3
Central	KJ9X	6,075	Northwestern	AA7UN	1,653
Dakota	NTØZ	36,309	Roanoke	K4OAK	34,452
Great Lakes	K8ZT	93,177	Southeastern	N4NM	11,214
New England	W1TW	95,040	Southwestern	WA7BNM	3,456
Pacific	K2GMY	17,316	West Gulf	KZ5J	14,550
Roanoke	W1IE	13,392	Canada	VE2NCG	363
Canada	VE3UTT	300,000	Single Operator, 10 Meters		
Single Operator, 160 Meters			Central	N9NBC	27
Atlantic	W2VO	12,393	Hudson	WB2AMU	189
Central	WD8DSB	4,998	Southeastern	K4WI	2,583
Great Lakes	W8UVZ	7,434	Southwestern	WB7FDQ	35
New England	K1WHS	31,476	Multioperator, Single Transmitter, High Power		
Northwestern	W7WR	1,260	Atlantic	W2FU	4,540,737
Pacific	W6RKC	1,395	Central	AA9A	2,575,737
Roanoke	W4ZV	42,120	Great Lakes	W5MX	2,660,112
Rocky Mountain	KVØQ	22,500	Hudson	K2QMF	3,719,070
Southeastern	K4PI	26,901	New England	KE1J	3,336,960
Single Operator, 80 Meters			Northwestern	K7RI	466,344
Atlantic	W3BGN	130,644	Southeastern	AD4ES	2,073,288
Central	KØPJ	23,100	Southwestern	W8TK	1,547,748
Dakota	WAØMHJ	7,812	West Gulf	K5TR	3,408,384
Delta	W5ZN	123,324	Multioperator, Single Transmitter, Low Power		
Great Lakes	AC8CE	5,100	Atlantic	W3YI	179,820
New England	W1XX	71,040	Delta	W9SN	2,879,550
Northwestern	K7QBO	1,620	Midwest	WBØZWW	17,577
Roanoke	K4FJ	31,806	Roanoke	W4TG	328,860
Southeastern	N4OO	12,096	Canada	VE9BK	1,354,680
Canada	VE9AA	89,352	Multioperator, Two Transmitter		
Single Operator, 40 Meters			Atlantic	K2AX	3,976,938
Atlantic	N2MF	459,510	Central	NØIJ	1,171,512
Central	NN1N	22,326	Delta	K4TCG	3,443,286
Delta	N8OO	418,233	Great Lakes	K8AZ	4,953,069
Great Lakes	W1NN	62,139	Hudson	W2CG	1,639,575
Hudson	W2EG	89,856			

Midwest	NØNI	3,992,157
New England	K1LZ	6,669,744
Northwestern	K7JR	764,061
Pacific	N6VV	103,341
Canada	VE3JM	5,214,306
Multioperator, Multitransmitter		
Atlantic	W3LPL	8,792,364
Central	WØAIH	2,750,280
New England	K1TTT	5,193,636
Pacific	N6BV	2,278,656
Roanoke	NR4M	7,139,154
West Gulf	NR5M	6,171,060

VE7DZO	31,311	SO-20
K7ABV	29,280	SO-20
WA7BNM	3,456	SO-15
N6RM	2,880	SO-15
AA7UN	1,653	SO-15
WB7FDQ	35	SO-10
W8TK	1,547,748	MSHP
W6RFU	552,672	MSHP
K7RI	466,344	MSHP
N7QT	236,016	MSHP
VA7DZ	136,620	MSLP
K7JR	764,061	M2
N6VV	103,341	M2
VE7FO	30,492	M2
N6BV	2,278,656	MM

Regional Leaders

West Coast Region

(Pacific, Northwestern and Southwestern Divisions; Alberta, British Columbia and NT Sections)

N9RV	2,036,604	SOHP
W7RN (N6TV, op)	1,942,545	SOHP
K6XX	1,550,448	SOHP
N7ZG	1,005,837	SOHP
K6NA	918,459	SOHP
WJ9B	656,397	SOLP
K16RRN	337,428	SOLP
N6ZFO	288,075	SOLP
N6RV	181,395	SOLP
W7ZI	126,228	SOLP
N7IR	228,480	SOQRP
W6JTI	171,936	SOQRP
W6QU (W8QZA, op)	76,230	SOQRP
KE6K	23,058	SOQRP
AA6OC	16,362	SOQRP
WØRIC (W4IX, op)	1,251,900	SOUHP
K6LL	1,232,250	SOUHP
VE7CC	1,068,795	SOUHP
K7RL	992,376	SOUHP
KA6BIM	956,481	SOUHP
W6YX (N7MH, op)	953,988	SOULP
K6WSC	342,630	SOULP
VA7KO	239,040	SOULP
W6SX	220,539	SOULP
K7TM	135,840	SOULP
K2GMY	17,316	SOUQRP
WO6M	72	SOUQRP
W6RKC	1,395	SO-160
W7WR	1,260	SO-160
K7QBO	1,620	SO-80
W7DRA	483	SO-80
W7XI (N6CW, op)	228,570	SO-40
W7WA	200,448	SO-40
NG7A	31,671	SO-40
N7WA	15,372	SO-40
KA9A	13,392	SO-40
W6YA	216,384	SO-20
N7CW	156,960	SO-20
W6ZL	39,552	SO-20

Midwest Region

(Dakota, Midwest, Rocky Mountain and West Gulf Divisions; Manitoba and Saskatchewan Sections)

N2IC	2,815,176	SOHP
WXØB (AD5Q, op)	2,484,162	SOHP
N5AW	2,169,216	SOHP
N3BB	1,311,882	SOHP
K5RX	677,880	SOHP
WØUO	898,605	SOLP
N5KWN	332,310	SOLP
NN5T	249,255	SOLP
ADØRW	156,420	SOLP
KC6X	143,370	SOLP
KEØTT	17,955	SOQRP
N3CI	14,697	SOQRP
AKØM	2,349	SOQRP
KØTC	1,914	SOQRP
NO2D	990	SOQRP
AD5A	1,663,200	SOUHP
KØKX	1,575,135	SOUHP
K3PA	1,068,012	SOUHP
NØAT	806,403	SOUHP
NG7M	574,317	SOUHP
N4IJ	457,653	SOULP
KØUK	429,024	SOULP
AAØAI	358,608	SOULP
NØUR	321,399	SOULP
KØTI	223,212	SOULP
NTØZ	36,309	SOUQRP
KVØQ	22,500	SO-160
WA7BNG	855	SO-160
WAØMHJ	7,812	SO-80
VE5GC	504	SO-80
KØSRL	14,250	SO-40
AE5P	6,612	SO-40
K7ULS	1,539	SO-40

WD5K	208,680	SO-20	W1NN	62,139	SO-40
NØGEF	127,350	SO-20	K4WW	32,025	SO-40
N5JJ	125,658	SO-20	W8LJB	30,144	SO-40
KØPK	20,580	SO-20	KG9Z	29,862	SO-40
WNØL	12,150	SO-20	NN1N	22,326	SO-40
KZ5J	14,550	SO-15	K9BGL	364,140	SO-20
NZ5M	302	SO-15	W8WA	286,965	SO-20
NØJK	3	SO-15	VE3CR	85,860	SO-20
K5TR	3,408,384	MSHP	N9DJ	41,220	SO-20
K5CM	767,859	MSHP	KV8Q	13,905	SO-20
WBØZWW	17,577	MSLP	KO8Z	9,840	SO-15
NØNI	3,992,157	M2	WK9U	6,195	SO-15
NR5M	6,171,060	MM	KE8Y	945	SO-15
N5AA	1,745,226	MM	N9NBC	27	SO-10
Central Region			W5MX	2,660,112	MSHP
(Central and Great Lakes Divisions; Ontario East, Ontario North, Ontario South, and Greater Toronto Area Sections)			AA9A	2,575,737	MSHP
W9RE	2,897,832	SOHP	WN9O	1,131,594	MSHP
XL3A (VE3AT, op)	2,736,657	SOHP	VE3JM	5,214,306	M2
NA8V	2,243,850	SOHP	K8AZ	4,953,069	M2
K8GL	1,474,980	SOHP	VE3YAA	2,009,280	M2
VA3SB	694,593	SOHP	NØIJ	1,171,512	M2
VE3VN	1,253,304	SOLP	WØAIH	2,750,280	MM
N9CK	622,419	SOLP	Southeast Region		
WA8RCN	414,636	SOLP	(Delta, Roanoke and Southeastern Divisions)		
N4TZ	325,350	SOLP	N4AF	3,027,645	SOHP
VE3TM	304,062	SOLP	W4CB (W2RU, op)	2,490,345	SOHP
K2YAZ	91,512	SOQRP	NN7CW	1,638,975	SOHP
N9SE	73,932	SOQRP	K4AB	1,538,874	SOHP
VA3PCJ	7,728	SOQRP	K7BV	1,418,820	SOHP
VE3WZ	6,552	SOQRP	N8II	1,376,352	SOLP
VE3DQN	1,800	SOQRP	K5KU	1,287,678	SOLP
K1LT	2,269,353	SOUHP	KJ4QHL	842,688	SOLP
K9NW	2,187,342	SOUHP	WB4TDH	751,575	SOLP
VE3NNT	1,607,244	SOUHP	N5EE	404,460	SOLP
N8BJQ	1,500,081	SOUHP	K3TW	117,468	SOQRP
WE9V	1,430,514	SOUHP	WB4GHZ	21,168	SOQRP
W9XT	874,944	SOULP	K4TRH	19,872	SOQRP
N8VV	602,082	SOULP	KS4YX	12,141	SOQRP
AB9YC	406,785	SOULP	W5NZ	9,672	SOQRP
VE3MGY	393,240	SOULP	WO4O	1,545,255	SOUHP
WT9Q	293,553	SOULP	K3IE	1,379,286	SOUHP
VE3UTT	300,000	SOUQRP	N4RV	1,341,420	SOUHP
K8ZT	93,177	SOUQRP	K5EK	1,287,264	SOUHP
KJ9X	6,075	SOUQRP	WX4G	1,275,876	SOUHP
VA3YT	714	SOUQRP	N9NB	904,491	SOULP
KX9RT	672	SOUQRP	K1KNQ	476,406	SOULP
W8UVZ	7,434	SO-160	WF7T	304,980	SOULP
WD8DSB	4,998	SO-160	W4/OL5Y	282,240	SOULP
WB8JUI	4,320	SO-160	K2TE	252,000	SOULP
WB8WKQ	2,754	SO-160	W1IE	13,392	SOUQRP
VE3PN	45,627	SO-80	W4ZV	42,120	SO-160
KØPJ	23,100	SO-80	K4PI	26,901	SO-160
AC8CE	5,100	SO-80	N1LN	25,380	SO-160
NJ9R	588	SO-80	N4XD	11,520	SO-160
			W4AA	10,800	SO-160

