

Results, 15th Annual 160-Meter Contest

By Edith Holsopple,* N1CZC

It was the best of contests, it was the worst of contests (apologies to Charles Dickens). Attendance, propagation and scores were the best trio ever to play on the 160-meter band.

The worst of the contest was the amount of activity in the DX window. Rule 6 says, "Adherence to Band Plan: W/VE stations may transmit only in the segments 1800-1825 and 1830-1850 kHz, in conformance to the ARRL band plan." Just to make sure it wasn't missed, the rule was reiterated in the opening paragraph: "Remember that W/VE stations are prohibited from transmitting in the 1825-1830 kHz DX Window." The format of a contest usually involves seeing how many stations one can work within specified limitations, be they ARRL Sections, countries, band(s), or whatever. For the 160-Meter Contest, the DX window is one of the limitations. (The ARRL Board of Directors recently voted to seek member input regarding possible modification of the ARRL 160-meter band plan. Please send your comments on this to Hq.)

On the brighter side, the weekend of the 1984 contest, December 1-2, brought outstanding conditions. It was a real shot in the arm to the morale of those testing the waters on 160 who are normally dependent on the sunspot cycle for their Amateur Radio high. The contest branch watched in amazement as the logs kept piling up. The current tally shows 472 entries, as compared with 380 in '83.

Five of the single-op top tenners this year are repeats from last year. AA1K beat his last year's number one score by 81 kilopoints, but was outdone by K5NA, who topped AA1K's last year's score by 92,940 points. One indication of the work that these winners put into the 'test is that the top three single operators beat all the multiop stations. Well done! K5UR sneaked in to take the coveted third place. Of course, he also walked away with the Delta Division. Following him was a repeat from last year, K1ZM, who climbed up one rung. Newcomer N4AR came in fifth, and N7DF dropped to sixth place, even though he beat his last year's third-place score by a wide margin. N4ZZ and N5JJ took the seventh and eighth positions, respectively, while K4VX/Ø, operated by KM9P, skipped down to ninth. KØZZ, first place in the Dakota Division, stole tenth place with a score that would have won the 1983 contest. Congratulations!

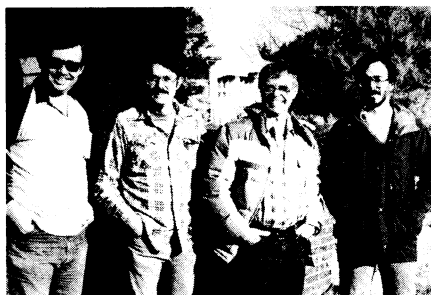
Scores have risen similarly on the multiop front. Five of the Top Ten multiop stations this year are repeats from last. KS8S and N9NM traded places, with KS8S beating him by a narrow margin. It was a close race. KK5I was forced to improve his score considerably, but he managed to retain the sixth spot. WØAIH dropped from third to tenth, but his score this year would have taken second place in '83. W8LT moved up to third place with almost 50

Division Leaders

Single Op		Division	Multiop	
Call	Score		Call	Score
AA1K	224,190	Atlantic	K2XR	128,822
VE3ABG	125,542	Canadian	VE2OJ	15,738
K9UWA	138,446	Central	N9MM	201,600
KØZZ	149,400	Dakota	KØSR	76,072
K5UR	209,436	Delta	KB5CX	31,320
N4AR	189,450	Great Lakes	KS8S	201,782
K5NA	236,130	Hudson	WA2JQK	18,354
N7DF	182,424	Midwest	WØCEM	140,857
K1MM	132,496	New England	WA1ABI	109,136
W7EJ	104,566	Northwestern	WB7FFF	99,715
KI6O	57,477	Pacific	WA6EUZ	80,418
KG4W	136,595	Roanoke	K4XU	146,856
WØKEA	118,746	Rocky Mountain	WB5QYT	75,468
N4PN	141,185	Southeastern	WS4Y	60,501
K7OX	101,169	Southwestern	—	—
N5JJ	168,867	West Gulf	W7FG	170,781
9Y4XX (N6AA)	115,270	DX	N4UM/C6A	146,880



One of Colorado's best, Karen Schultz, KAØCDN, operated the 160-meter Contest from her space-efficient capsule.



KØWN, WAØTKJ, WØCEM, and ABØS (l-r) shortly before the end of the contest. Not pictured is KØUR, who was perhaps manning the station. They slaved 34 hours for 140 kilopoints.

kilopoints more than last year. We were happy to add N4UM/C6A to the list. Their five-point QSOs were most welcome. Other newcomers to the Top Ten were W7FG, K9VV, K4XU and WØCEM.

As you can see from the score listings, it is all

Top Ten

Single Op		Multiop	
K5NA	236,130	KS8S	201,782
AA1K	224,190	N9MM	201,600
K5UR	209,436	W8LT	180,900
K1ZM	192,660	W7FG	170,781
N4AR	189,450	K9VV	166,152
N7DF	182,424	KK5I	160,218
N4ZZ	175,360	N4UM/C6A	146,880
N5JJ	168,867	K4XU	146,856
K4VX/Ø (KM9P)	167,705	WØCEM	140,857
KØZZ	149,400	WØAIH/9	140,220

the participants who make a contest successful, not just the "big guns." Thanks for a job well done. To any top banders who weren't aware of the DX Window, put on your glasses and read the rules.

I hope to see you at the next ARRL 160-Meter Contest on December 7-8. Good luck, friends.

SOAPBOX

This was a super contest, as band conditions were excellent. The only gripe I have is an awful lot of people did not care about the DX window (WR4U). W/VE conditions were excellent, but mostly very poor to Europe. There were a few brief exceptions, and a fantastic EU sunrise peak the second night (N4IN). I was sure surprised at how I was getting out, according to the reports I received. Even when I got S9 reports, lots of them had trouble receiving my Section (N4KB). Nice contest, lots of activity (KG4W). Conditions were excellent from here (AA6DX/4). My highest hourly rate was 94. East Coast stations K5NA and AA1K, with their European runs, are unbeatable from the Midwest (K5UR). Again this year the 160 contest was a flop here. The early December noise levels are something to behold (AESH). I can't copy too well anymore, but enjoy listening to everyone have fun (W5GWD). In my opinion, assembling an effective antenna for 160 with modest means is the greatest challenge in Amateur Radio (KT5X)! Too bad there wasn't more DX. I never heard Europe the whole weekend (KD5RO). Living on a city lot and working the 160 'test is a heck of a lot of fun, but it would be nice to copy the DX that we heard calling down in the noise (W7FG/5). I was just two states shy of WAS in the contest (AD6D). I had lots of fun, excellent conditions on Friday night. Next year, more than 10 W (WA6PZL). Pet peeve: stations with auto keyers that listen for 2-4 seconds to resume calling.

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Many times two or three of us would call the guy, and none of us got him over a two- or three-minute period. Pet "like": stations that slowed down for the slower straight-key operators (W6PFE). Running this contest from Hawaii is a real lulu — can hear much, but they can't hear me! Best ears: N9MM and AA1K (N6HR/KH6). What great conditions — I didn't even hook my amp up (N6RZ). I wish more operators would give honest reports. Some of us use contests as a measure of our summer's work on the antenna system. Double extended zepps work great when they are 500 feet high (WA6EUZ). Conditions Friday night were great, and Saturday they were just incredible (W7TJ). Hats off to all Eastern stations that pulled my 100 W through. I'm sure glad that the ops who bring their 20-meter habits only show up once a year (W7KQU). These were the best conditions I have ever heard in 30 years on 160 meters (W7DRA). There seemed to be a contest within a contest, with U.S. stations competing to see who could be the last one to call DX in a pileup. U.S. stations: Dump your call a couple of times and listen! DX stations: Please don't operate transceive on your frequency and don't operate transceive in the window (K8MN). The Colorado boys sounded more like next-door neighbors on Sunday; lots of W7s, some loud. I started out just to help a few guys out with a contact, and ended up having a lot of fun. When I got tired I quit (N8II). After almost 400 QSOs and all but three states, I am still in shock! Great low-band operators (NA9J). This is the first decent 160 antenna I've operated with in 20 years! I didn't know what I've been missing (WA9EKA). There's more and more activity each year, but I found you have to be a night owl for DX on this band. Had fun (W9LNQ). I rarely operate in contests, but these seem less frantic than the others. The operators are also better (W9MQZ). I sure enjoyed the contest. I tried out a new antenna, the best I've ever had on 160. I couldn't believe how well I could hear (W0EE). I always enjoy this 'test and found the amount of activity overwhelming at times (VE3ABG). Any station in Ontario, south of the 47th parallel is severely restricted as to the input

Antennas Used By Top Stations

Single Op	Antenna(s)
K5NA	East/west slopers, inverted V and Beverages
AA1K	113-ft shunt-fed vertical/Beverages
KSUR	Vertical/Beverages
K1ZM	Vertical/Beverages
N4AR	5/8-λ spaced and 1/4-λ verticals
N7DF	Collins Discharge/horizontal loops/traveling wave
Multiop	Antenna(s)
KS8S	120-ft vertical/Beverages, loops
N9MM	Vertical/Beverages
W8LT	Vertical/Beverages
W7FG	85-ft shunt-fed tower with stacked monobanders
KK5I	80-ft shunt-fed tower, Beverages, loop
N4UM/C6A	Kite-supported 320-ft wire

power, so I worked hard for each and every QSO. Maybe next year the power restrictions will be lifted and the score reflected. The temporary antenna I put up the Thursday night before the contest came down in the ice storm we had on the Sunday night of the contest. The fiberglass mast came down on the tribander and broke the driven element (VE3GF). Excellent conditions even for the suffering sevens (VE7BS). I lost the kite-supported 320-foot wire when the wind died, and made many QSOs with the wire about 10 feet off the ground lying in the tops of scrub trees (N4UM/C6A). I was very pleased to be heard through the QRM, as the band here is just 1830-1850 and does not include the DX window (F9YZ). My best single-hour QSO rate ever was 124 in this contest. Fantastic activity (W2GD). There's a reason 160 is called the Gentleman's Band. I never had to guess whether the exchange was for me, and more often than not a GL and/or 73 was also sent (KT2D). I got in this because I got bored on Saturday night. If I had realized 100 W into an 80-meter trapped dipole at 33 feet with an SWR over 3:1 would do this, I'd have spent the whole weekend

at it (KW2J). The howling mob of the unwashed multitude preempted the 160 DX window. It was punctured only by the megawatt minority. Nevertheless, I enjoyed the contest, using straight key, pencil stubs and scratch paper here. Age 74 (W3AJS). The most enjoyable part of this contest is meeting old friends (W3BGN). I had not operated on 160 since 1941. Working for two days before the contest, I rewired and padded an old T-18/ARC-5, dug up an ancient Globe Scout (without a power supply) and put in a TV transformer, loaded up my 40-meter antenna and wound up having the time of my life. My old HRO, vintage mid '30s, with 2.5-V tubes, provided more-than-adequate receiving coverage. Some of my close ham friends have made rather snide remarks (in jest, of course), but, honestly, I had a ball. Wait until next year (W2LPV). Please consider a QRP multiplier, as in FD, for next year. The present rules force people to run as much power as possible (VE7QR). Code speeds were absolutely astronomical. Amid all the aggressiveness, the automatic keyers and other falderal that would make Reinartz, DeLoy, Schnell and the others turn over in their graves, there are still some real "top banders" who are thoughtful enough to say TNX QSO 73 GL before tearing off to the next contact (KB4KKD, N4LBJ opr.). Not often does one get an opportunity to work oneself, but during the test, Steve D. Smith, WA4VWV, worked Steve D. Smith, KY7H. Both are the same age with birthdates only slightly different (WA4VWV).

FEEDBACK

Please refer to the results of the 1983 contest in April QST 1984, page 84, for the following corrections. AI6V (not K6HIH) won the Pacific Division with a score of 68,184. The log of K2SHL was found with the SS logs. Leslie's Section was New York City, and the score line reads 4750-95-25-7. YV3AGT was inadvertently omitted from the results. His score line reads 2720-32-17. JR1ZZT's logs were mailed in plenty of time, but arrived well past the deadline. JN1UIZ was the operator, and the score line reads 520-13-8.

Scores

Scores list call sign, final score, total QSOs, total multipliers and hours operated. Example: CX8DT's score is 60 points, with 4 QSOs, and 3 multipliers. He operated for one hour.



DX

Bahamas

N4UM/C6A (+N4BP)

Uruguay

CX8DT

Federal Republic of Germany

DL1YD

Spain

EA3VY

France

F9YZ

England

G4OBK

Haiti

HH2VP (N4XR, opr.)

Colombia

HK1AMW

Dominica

J73D (W2BP, opr.)

Japan

JA1GTF

JA7NI

JE1SPY

JA7YCC

JAY7WD (JE7XEH, opr.)	540	12	9
JAM9JR	400	10	8-2
JA9RPU	180	6	6-1
JA9YFB (+JJ1GX, JN1IRON, JE7s JWB, MLJ, MOY, JF7GQK, JH7s XKI, XMO, JR7s GYC, JLU, JVO, LCI, QEF, QYW, JH8QNT, opr.s.)	4800	48	20

JH1YDT (JH4UTP, JH6JUN, JH8HNI, JO1HSX, JP1AIE, opr.s.)	1680	24	14-5
JA2YKA (JA9SSY, JE2VYM, JF2DQJ, JR2GMC, opr.s.)	1200	20	12-10
JR1ZTT (JF2NXS, JN1UIZ, opr.s.)	450	10	9-3

Czechoslovakia			
OK1ATP	660	12	11-2
OK1DFF	650	13	10-2
OK1JDX	650	13	10-2

Venezuela			
YV1OB	67,260	228	59-11
YV2IF	41,600	208	40

Trinidad			
9Y4XX (N6AA, opr.)	115,290	366	63-11

Cayman Islands			
ZF2AG (N8AG, opr.)	45,225	201	45-20
ZF2IK (K5WA, opr.)	30	3	2-1

Republic of South Africa			
ZS8BCR	80	4	4-1

W			
1			

Connecticut			
W1WFF	55,377	428	63-9

Maine			
W1HRO	38,714	312	58
N1BUG	23,965	262	45-27
K1BZ (+N1ATH)	14,964	174	43-10

New Hampshire			
N1ACH	40,734	315	62-13
K1GQ	28,665	202	63
K1TR	4490	70	32

Rhode Island			
KA1SR	16,932	150	51-11
WA1ABI (+K1TZQ)	109,136	696	76-21
N1RI (+KA1s AIR, EHR, N1s BVY, CED, DM, XW, WB1DXQ)	57,771	445	63-27

Vermont			
WB1GQR	107,522	707	74-25

W1ODY	36,897	372	49-30
K1KI	32,718	284	57-4
K1YRP	12,833	155	41-7
WB9IHH	9835	116	41-6
W1QV	9030	100	42-8
W1OR	7220	98	38-7
KB1H	1449	33	21-3

Eastern Massachusetts

K1MM	132,496	656	91-23
W1CF (N1EE, opr.)	131,457	709	87-27
AB1A	102,080	561	84-26
W1AX	54,880	380	70-14
KA1DWX	31,977	273	57
KQ1F	27,022	223	59-10
W1YY	26,378	231	51-12
W1IHN	23,952	248	48-7
KR1B	9680	112	42-11
W1TR	9614	125	38
A1SE	8405	101	41
AJ1E	6324	93	34
W1CT	748	34	11-2
K1MEM (+N1CPC)	55,944	363	74-11

W1A1M	816	24	17
AE2L	12,098	141	42-10
W2PAU	9568	101	46-7
K2FL	8080	101	40-3
K2JLA	7896	104	37-6
N2IT	5544	76	36-3
W2LPV	2288	44	26-10

Western Massachusetts

WB1HIH	7704	107	36-7
N1CKW	7128	99	36-5

Eastern New York

K5NA	236,130	1054	102-36
K1ZM	192,660	951	95-34
K2EK	33,792	252	64-6
W2KHQ	22,464	202	54-18
KR2V	17,848	182	46-14
KN2Q	15,228	164	46-7
W2DW	14,985	165	45-5
W2MAZ	12,672	144	44-7
WB2PUH	10,449	120	43-11
K2MN	10,152	105	47-5
WA2JQK (+WA2JKP)	18,354	198	46-15

New York City & Long Island			
WB2DHY	38,060	343	55-24
W2GP	12,642	147	43-6
W2GKZ	9758	119	41-6
WB2DLA	4640	80	29-9

Northern New Jersey			
W2GD	83,772	507	78-10
W2RQ	72,216	522	68-9
K2MFF (W2VY, opr.)	50,022	391	63
K2JF	19,646	203	47-9
W2HN	16,752	173	48-12
N2IN	15,180	171	44
W2TO	4488	66	34
K2LRE	2728	47	29-6
K2VX	1656	36	23-1
KT2D	1596	38	21-3

Southern New Jersey			
NC2V	61,632	413	72
N2MM	61,134	425	69-14
W2BHK	55,959	384	69-18
W2ZY	40,458	297	66-18

W2PAU	9568	101	46-7
K2FL	8080	101	40-3
K2JLA	7896	104	37-6
N2IT	5544	76	36-3
W2LPV	2288	44	26-10

Western New York

K2TQC	108,185	686	77-22
KA2RDO	33,973	316	63-17
WA2QKF	29,422	313	47-19
W2TZ	23,715	231	51-12
K2GK	22,050	222	49-17
KK2B	11,132	125	44-9
NA2Q	10,040	124	40-7
WA2PNQ	9450	111	42
W2CJQ	7622	100	37-7
NA2A	3172	61	26-8
KW2J	3100	50	31-4
K2XR (KD2I, KT2B, N2ESP, W2HWJ, WA2VUN, WB2s INB, TSY, WIK, opr.s.)	128,822	763	82

Delaware

AA1K	224,190	966	106-36
W3QQ	13,056	136	48
N8NA	8610	101	42-3

Eastern Pennsylvania

W3TS	135,240	696	92-24
N3CXB	63,798	510	62-20
K3UEI	62,090	430	70-15
W3BUR	50,788	373	67-17
WB3CAC	37,508	295	57-9
K3OX	26,622	258	51-8
W3CNS	23,142	195	58-8
W3AJS	23,088	238	48-20
K4JLD	18,564	178	51-10
K3II	15,488	169	44
K3WW	11,500	122	46-2
W3KV	11,188	110	47
KU3E	10,455	128	41-12
WA3YON	8729	100	43-7
W3EAN	4928	74	32
K3TX	3598	62	29-2
W3BGN (+Net)	71,604	403	81-6

KH6CP/3 (+ Net) 33,040- 295- 56- 7	W4XD 54,558- 427- 63-14 K4PQL 54,484- 358- 74-12 KX4V 32,775- 284- 57- 9 K4OD 29,013- 250- 57-10 K4PFF 18,866- 182- 51- W4KMS 11,008- 125- 43- N4MM 8228- 80- 44- K4RDU 6290- 85- 37-10 N3RC 2790- 45- 31- 2 W4JVN (+ WB4JUE) 27,431- 244- 53-18 KA9X (+ KN4DPF) 2700- 54- 25-	Santa Barbara WA6FGV 14,706- 192- 38-20	W7BQY 5600- 70- 40- 6 K7CKC 1160- 29- 20- 3	K8UK 46,967- 368- 67- K8PQG 42,642- 303- 69-20 K8RZ 41,208- 300- 68-21 WB8FOR 24,824- 214- 58-33 K8FRP 23,430- 213- 55- 7 W8EE 17,264- 166- 52-16 K8OE 12,750- 122- 51- 8 W8TIV 7020- 90- 39- 9 K8G 3306- 57- 29- 3 W8ZV 816- 24- 17- 2
Maryland-DC	5	Santa Clara Valley	8	Iowa
K3ZZ 109,725- 709- 75-30 K3ZO 90,169- 551- 78-24 N3CO 37,895- 350- 53- W3GN 11,438- 133- 43- 8 K3ZNV 10,250- 122- 41- 8 KA3EUV 10,248- 122- 42- 8 N3AOE 7527- 90- 39- W3TFA 7070- 101- 35-	Arkansas K5UR 209,436-1081- 93-34 N5DX 22,204- 170- 61- W5KL 260- 13- 10- 1	W6NA 26,226- 201- 62- N6RZ 24,318- 193- 63- 6 N6WQ 19,044- 207- 46-18 W6PR1 2006- 59- 17-	Michigan N8EA 123,768- 743- 81-28 K8OOK 18,945- 208- 45-13 K8CV 11,408- 124- 46- 7 K8OT 8580- 110- 39- AD8W 7761- 98- 39- 7 WB8VU 6204- 94- 33- 5 K8SIA 3180- 53- 30- 3 W8MNL (+ K8JM) 105,968- 701- 74-42 KN8S (+ KA8PLH) 13,158- 153- 43-14 KD8QW (+ W8BAID) 12,604- 134- 46-13	W8EJ 148,985- 878- 83- WA4VWV 93,732- 636- 73- 9 W8IZ 43,008- 336- 64-24 WB8IOG/0 42,966- 324- 66-18 N8BB 42,711- 305- 69-21 K8PUB 7548- 102- 37- WB8XR (K9AYK, KA8OVA, KW8L, N8OK, W8TW, oprs.) 121,028- 748- 79-38 N8SM (+ K8s JGH, RW, WB8s VYV, VYV, WD4FJG) 104,104- 664- 77-31 NE8P (+ KA8GOA, N8EYO, WB8QPI) 13,064- 142- 46-18
Western Pennsylvania	Louisiana	San Francisco	Ohio	Kansas
K3UA 131,890- 802- 80-24 W3QM 35,640- 318- 55-27 W3HDH 29,217- 214- 49- 7 N3DLJ 17,902- 182- 46-10 KA3CRC 8358- 86- 42- K3BIE 1450- 29- 25- 2	K5KLA 44,460- 332- 65- KB5CX (+ K5MS, KA5RAD, KE5BC, WB5NAA) 31,320- 264- 58-21	W8SDY 26,840- 208- 55-13 WB8EGE (KA6OPH, KB8HT, N8s MQ, QC, WB8WPO, WB7DEG, oprs.) 19,448- 187- 53-21	W8FN 119,712- 666- 86-23 K8MN 112,714- 658- 83- W8DN 38,998- 310- 62-19 W8UMD (N9AG, opr.) 34,720- 277- 62- 9 WA8MLV 33,040- 292- 56-17 K8IP 26,160- 212- 60- WA8RCN 23,128- 205- 56- 9 K3JT 12,690- 141- 45-11 W8IDM 12,645- 139- 45- 6 WB8JUJ 12,558- 135- 46- WB8PHI 11,562- 135- 41-10 N8EKS 9400- 116- 40- 8 K8HF 8772- 102- 43- 3 W8PCS 3224- 52- 31- WA2AZG 3060- 51- 30- 2 NC8V 2744- 46- 28- 2 WA8GLF 2304- 48- 24- 7 K8SS (+ AD8P) 201,782- 980- 98-35 W8LT (K1LT, K8ND, W8ERD, W8DIXE, oprs.) 180,900- 969- 90-39 W8LNO (+ KA8HFO) 125,200- 760- 80-32	N7DF 182,424-1008- 88- AB8X 29,463- 200- 69- 7 W8UJ 28,000- 200- 52-19 WB8AWP 24,339- 195- 61- W8FFEN 11,328- 118- 48- 9 WB8EM (+ AB8s, K8s UR, WA, WA8TKJ) 140,857- 878- 79-34
4	Mississippi	San Joaquin Valley	West Virginia	Minnesota
Alabama	KK5K 17,640- 198- 45-12 N5XA 9114- 107- 42- 5 AE5H 8192- 86- 38- 5 W5GWD 3472- 56- 31-12	K6MO 36,351- 245- 63-17 N8BJQ/6 14,000- 140- 50-10 W8CU (+ KA6VAF, K86P, W8MUV, WB8YMK, WD6CNU) 35,328- 276- 64-17	K8OQL 66,240- 448- 72-24 N8IF 55,704- 410- 86- 8 K8BFJ 32,344- 308- 52- 5 WB8JWX 18,000- 186- 48- 8	W8HW 91,686- 615- 74-21 K8PK 73,630- 487- 74-20 W8FXL 18,200- 182- 50-15 K8VB 12,144- 132- 46- 6 K8MPH 10,800- 120- 45- 3 A8JN 2288- 52- 22- 2 K8SR (+ AB8P, WB8HCH) 78,072- 505- 74- 7 K8TT (+ K8OX) 45,010- 311- 70- 9
WR4U 85,440- 518- 80- N4KG 63,145- 419- 73-10 N4JF 29,468- 275- 53-10 WZ4F 13,920- 145- 48- 3 KZ4S 5624- 76- 37-	New Mexico KT5X 64,021- 434- 73-18 K7UP/5 25,056- 216- 58-10 N7AH 21,240- 174- 60-13 WB5OYT (+ AA5B) 75,468- 489- 76-16 W7LHO (+ N5EMR) 12,546- 123- 51- 6	K6M0 36,351- 245- 63-17 N8BJQ/6 14,000- 140- 50-10 W8CU (+ KA6VAF, K86P, W8MUV, WB8YMK, WD6CNU) 35,328- 276- 64-17	K8OQL 66,240- 448- 72-24 N8IF 55,704- 410- 86- 8 K8BFJ 32,344- 308- 52- 5 WB8JWX 18,000- 186- 48- 8	W8HW 91,686- 615- 74-21 K8PK 73,630- 487- 74-20 W8FXL 18,200- 182- 50-15 K8VB 12,144- 132- 46- 6 K8MPH 10,800- 120- 45- 3 A8JN 2288- 52- 22- 2 K8SR (+ AB8P, WB8HCH) 78,072- 505- 74- 7 K8TT (+ K8OX) 45,010- 311- 70- 9
WR4U 85,440- 518- 80- N4KG 63,145- 419- 73-10 N4JF 29,468- 275- 53-10 WZ4F 13,920- 145- 48- 3 KZ4S 5624- 76- 37-	N5JUB 118,880- 704- 80-27 KD5RO 94,180- 569- 80-29 KC5DX 71,820- 510- 70-18 K5RR (K5ZD, opr.) 37,520- 332- 56- 4 N5UA 15,960- 135- 56-13 KB5UL 12,364- 139- 44- 5 W5QF 12,012- 111- 52- 8 NA5F 7252- 98- 37- 7 AA5C 5088- 78- 32- 4 W5HFN 1520- 40- 19-	Alaska KL7AF 6608- 94- 28-11	K8OQL 66,240- 448- 72-24 N8IF 55,704- 410- 86- 8 K8BFJ 32,344- 308- 52- 5 WB8JWX 18,000- 186- 48- 8	W8HW 91,686- 615- 74-21 K8PK 73,630- 487- 74-20 W8FXL 18,200- 182- 50-15 K8VB 12,144- 132- 46- 6 K8MPH 10,800- 120- 45- 3 A8JN 2288- 52- 22- 2 K8SR (+ AB8P, WB8HCH) 78,072- 505- 74- 7 K8TT (+ K8OX) 45,010- 311- 70- 9
Georgia	Northern Texas	Arizona	West Virginia	Missouri
N4PN 141,185- 805- 85-27 NQ4I 82,267- 422- 71- 8 K4BAI 50,700- 384- 65-15 W1UA 43,248- 636- 68- K4UEE 35,341- 292- 59- 7 N4UZ 14,112- 144- 49- W1AR 10,416- 124- 42-10 WA4BSN 7104- 192- 37-15 K4RE 182- 9- 9- 1 N4RJ (+ Net) 15,808- 116- 52-	N5JUB 118,880- 704- 80-27 KD5RO 94,180- 569- 80-29 KC5DX 71,820- 510- 70-18 K5RR (K5ZD, opr.) 37,520- 332- 56- 4 N5UA 15,960- 135- 56-13 KB5UL 12,364- 139- 44- 5 W5QF 12,012- 111- 52- 8 NA5F 7252- 98- 37- 7 AA5C 5088- 78- 32- 4 W5HFN 1520- 40- 19-	K7OX 101,169- 554- 81- W9RY 10,384- 118- 44-11 KJ7I 2574- 48- 26-	K8OQL 66,240- 448- 72-24 N8IF 55,704- 410- 86- 8 K8BFJ 32,344- 308- 52- 5 WB8JWX 18,000- 186- 48- 8	K4VX/0 (KM9P, opr.) 167,705- 959- 85- W8HBH 39,894- 327- 61- 7 W8JRP 12,711- 110- 57- 9
NR4U 85,440- 518- 80- N4KG 63,145- 419- 73-10 N4JF 29,468- 275- 53-10 WZ4F 13,920- 145- 48- 3 KZ4S 5624- 76- 37-	Southern Texas	Idaho	Illinois	Nebraska
NR4U 85,440- 518- 80- N4KG 63,145- 419- 73-10 N4JF 29,468- 275- 53-10 WZ4F 13,920- 145- 48- 3 KZ4S 5624- 76- 37-	N5JUB 118,880- 704- 80-27 KD5RO 94,180- 569- 80-29 KC5DX 71,820- 510- 70-18 K5RR (K5ZD, opr.) 37,520- 332- 56- 4 N5UA 15,960- 135- 56-13 KB5UL 12,364- 139- 44- 5 W5QF 12,012- 111- 52- 8 NA5F 7252- 98- 37- 7 AA5C 5088- 78- 32- 4 W5HFN 1520- 40- 19-	W7ZRC 64,750- 428- 70-13 K7RX 38,994- 288- 67- KA7T 27,218- 212- 62-20	KF9D 95,249- 602- 77-25 W9YTG 67,521- 468- 71-17 NA9J 47,628- 378- 63-16 K9AB 43,656- 315- 68-12 W9BGYJ 29,522- 250- 58-20 K9MDO 24,567- 214- 57-18 W9AG 24,128- 208- 58- WA9EKA 22,320- 186- 60- 8 W9LNU 19,850- 197- 50- W9QWM 18,054- 174- 51-12 K9PPV 14,405- 116- 43- 9 K9NT 12,236- 133- 46- K9SD 9180- 102- 45- W9FSD 8000- 100- 40-16 K9PYP 7722- 99- 39- 7 W9ABA 374- 17- 11- 1 K9VV (+ K9s GL, HMB, WB9TII) 186,152- 968- 84- W9AZ (AK9F, K9NR, WB9HAD, oprs.) 37,888- 296- 64- K8BAC (+ N9AX, W9ZV, WB9YRX, W8LLR) 34,146- 268- 63-	KV8I 53,400- 445- 60-20
Kentucky	Oklahoma	Montana	Indiana	South Dakota
N4AR 189,450-1015- 90-27 K4FU 92,700- 603- 75-23 KK4Q 52,886- 425- 62-12 NO4R 52,704- 432- 61-11 W4YOK 50,785- 386- 65-10 WA4EBN 7304- 83- 44- 7 N4DBR (+ K14GO, NV4H, WM4T) 129,762- 763- 81-33 N4XM (+ KD4U) 109,652- 679- 79-29	KM5H 87,984- 543- 78-17 N5AFV 11,094- 129- 43-11 W7FG (+ K5SM, KA8HJK, NA5B, W5VHP, W7BNK) 17,781- 953- 87- KK5I (+ K7CW, N5CG) 160,218- 971- 81-37	K8PP/7 68,639- 467- 73-22 W7LR 47,600- 337- 70- K8ST 43,624- 332- 66- KETX 28,438- 241- 59-17	K9UWA 138,446- 887- 77-34 N8DE 108,498- 679- 78- KA9OKH 100,010- 676- 73-28 KE9I 85,410- 573- 73-21 K9CLO 57,188- 416- 68-22 W9RE 37,758- 300- 62- 4 W8JOO 13,583- 143- 47- N9MM (KM9D, N9NC, WB9ZY, oprs.) 201,600- 993- 96-35	K8ZZ 149,400- 882- 83- 9 W8JX 121,285- 754- 79-28
N4AR 189,450-1015- 90-27 K4FU 92,700- 603- 75-23 KK4Q 52,886- 425- 62-12 NO4R 52,704- 432- 61-11 W4YOK 50,785- 386- 65-10 WA4EBN 7304- 83- 44- 7 N4DBR (+ K14GO, NV4H, WM4T) 129,762- 763- 81-33 N4XM (+ KD4U) 109,652- 679- 79-29	N5JUB 118,880- 704- 80-27 KD5RO 94,180- 569- 80-29 KC5DX 71,820- 510- 70-18 K5RR (K5ZD, opr.) 37,520- 332- 56- 4 N5UA 15,960- 135- 56-13 KB5UL 12,364- 139- 44- 5 W5QF 12,012- 111- 52- 8 NA5F 7252- 98- 37- 7 AA5C 5088- 78- 32- 4 W5HFN 1520- 40- 19-	W7IWU 5920- 80- 37- W7GCL 720- 30- 12-	KF9D 95,249- 602- 77-25 W9YTG 67,521- 468- 71-17 NA9J 47,628- 378- 63-16 K9AB 43,656- 315- 68-12 W9BGYJ 29,522- 250- 58-20 K9MDO 24,567- 214- 57-18 W9AG 24,128- 208- 58- WA9EKA 22,320- 186- 60- 8 W9LNU 19,850- 197- 50- W9QWM 18,054- 174- 51-12 K9PPV 14,405- 116- 43- 9 K9NT 12,236- 133- 46- K9SD 9180- 102- 45- W9FSD 8000- 100- 40-16 K9PYP 7722- 99- 39- 7 W9ABA 374- 17- 11- 1 K9VV (+ K9s GL, HMB, WB9TII) 186,152- 968- 84- W9AZ (AK9F, K9NR, WB9HAD, oprs.) 37,888- 296- 64- K8BAC (+ N9AX, W9ZV, WB9YRX, W8LLR) 34,146- 268- 63-	K8ZZ 149,400- 882- 83- 9 W8JX 121,285- 754- 79-28
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NR4U 85,440- 518- 80- N4KG 63,145- 419- 73-10 N4JF 29,468- 275- 53-10 WZ4F 13,920- 145- 48- 3 KZ4S 5624- 76- 37-	WA4JXI (WA4SVO, opr.) 82,824- 460- 84-27 N4CC 78,584- 406- 88-14 K4KQ 29,988- 204- 68-15 WS4Y (+ WA8VVA, KB4s LRX, LTQ) 60,501- 444- 67-	KD7SP 3780- 54- 35- 3 W7ABX 1050- 25- 21- 4	K8OQL 66,240- 448- 72-24 N8IF 55,704- 410- 86- 8 K8BFJ 32,344- 308- 52- 5 WB8JWX 18,000- 186- 48- 8	K4VX/0 (KM9P, opr.) 167,705- 959- 85- W8HBH 39,894- 327- 61- 7 W8JRP 12,711- 110- 57- 9
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NR4U 85,440- 518- 80- N4KG 63,145- 419- 73-10 N4JF 29,468- 275- 53-10 WZ4F 13,920- 145- 48- 3 KZ4S 5624-				