

# Results, Eighth Annual ARRL 160-Meter Contest

All-time division records topple in the wake of the largest turnout ever.

By Tom Frenaye, \* K1KI and Bill Jennings, \*\* K1WJ

The weekend of 2-4 December 1977 has come and gone and with it the eighth running of the ARRL 160-Meter Contest. The logs, received in record numbers, 373 to be precise, including those logs of 17 DX stations, have been processed. The "Top Band" which had filled to capacity with contest operators is once again the private domain of the "160 regulars." And the results of another 160-meter contest are history.

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The 373 formal entries from the 1977 contest, although a scant nine-log increase over the previous record of 364 in 1976, come in fairly even proportion from each of the U.S. and Canadian call areas, as well as eight DXCC countries. This slight increase in active participation is not unexpected, when one considers the recent flurry of interest in 160-meter operating. Most of the new commercially manufactured gear includes provision for 160-meter operation, if not as standard equipment, then as a transverter or plug-in, add-on feature. In 1977 (due to increasing interest and demand) the pages of

QST carried several articles on 160 antenna systems, not to mention references to 160 operating techniques. All this, coupled with the increasing interest in 160-meter contesting, portends a long, happy and active life for the 160-meter band.

The all-time Division Leaders Box appearing in this writeup, the first since the one incorporated in the results of the 1973 160-Meter Contest, shows eight total division records set in 1977, six single operator and two of the multioperator variety.

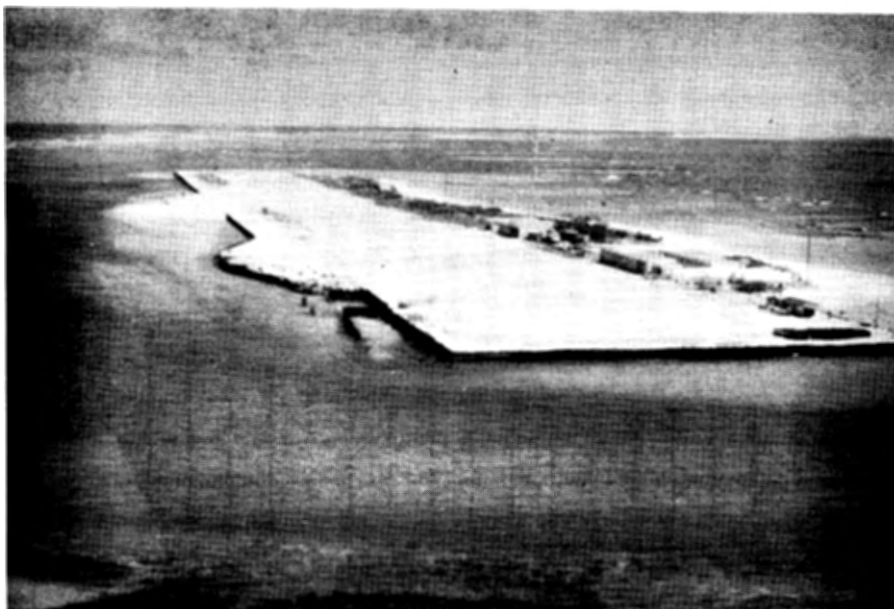
Those operators making the top-ten single-operator list had to post an average score increase of nearly 1100 points over the 1976 totals. With all the new two-letter call signs, it's hard to tell who has and who has not made the single-operator top ten before and we will suffice it to say congratulations to N4AR, the number-one, single-operator station and well done to the rest of the top ten as well as all section and division leaders.

The multioperator top-ten average scores were on the decline, the 1977 top-ten multiops averaging 67,494 to an average of 78,317 for the same group in 1976.

If participation in the 1977 160-Meter Contest is any indication of things to come, then the 1978 contest should be a real humdinger and should top 'em all.

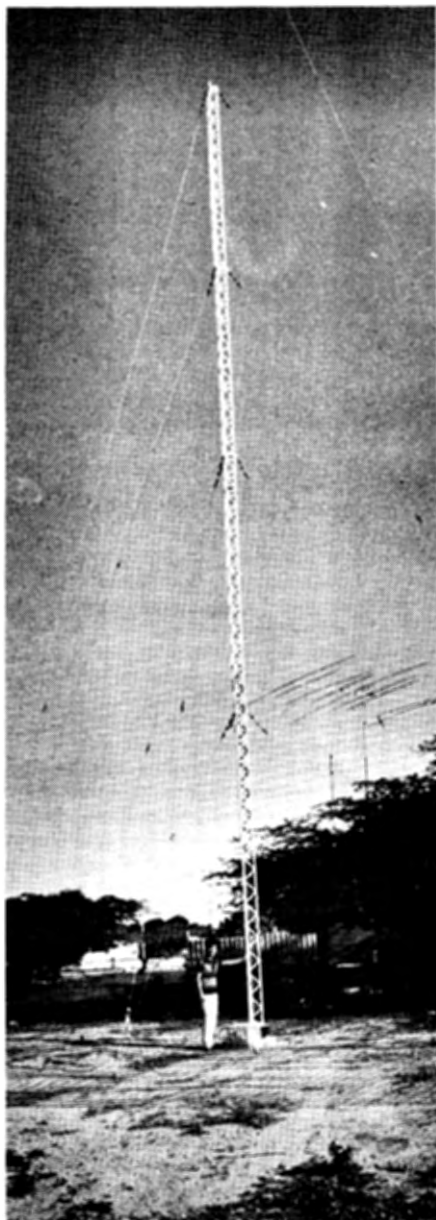
## Soapbox

Enjoyed the 'test greatly. However, DX conditions were only fair the first night and very poor the second night. Operating was generally excellent, although 160 is not quite the "gentleman's band" it used to be, due to some "DX Window" squabbles. Some contest operators deliberately violate the "DX Window" thus gaining an advantage over their opponents. Should be a disqualification for operating in the window! How about it? (W1BB) Conditions to Europe were fairly disappointing, but seemed good to western USA plus a surprise QSO with a ZL. (VE1CD) The Colorado stations made LORAN sound QRPP. (K5WIQ) A separate phone session may prove interesting in future 160 'tests. (W9KEB) This was my first contest and I enjoyed it very much . . . On the first night of the contest, it took four hours to make 20 contacts . . . but on the second night the rate was much better . . . I didn't hear any other WD calls in the contest. (WD0CQW) Next year I will either stay up for the JAs or get up earlier to work them . . . The frustration of trying to raise Midwest and East Coast stations with very narrow filters or using loops almost got the best of me. (W7NCO) Sounded like 20 meters during Sweepstakes at times. Where do all the stations come from? (N6NE) I was pleased to work all the "lower 48" states this year, which attested to the wide popularity of the contest . . .



KH6ABH at the U.S.C.G. LORAN Station at French Frigate Shoals. Operator K1BT/WA1MHJ planned a big effort in the 160 contest, but as he says, "I got this loud pulse noise generator about 100 yards away from my antenna. Result: QSOs — 0, Multipliers — 0, LORAN-A WON."

And, this is great type of contest for us old grey-haired fuddy-duddies, who have trouble surviving a solid 48-hour weekend contest. (W9GT) I haven't work the graveyard shift in years. Almost fell asleep twice. (NØTT) This is the first 160 event that I've entered. As a matter of fact, this is the first time that I've been on 160 meters since way back about 1931! . . . One of the benefits of this contest was working some old friends such as W6BYB/7, whom I hadn't seen or worked in about 40 years. Also W6BYS. The three of us quite often get QSL cards meant for another of the trio. (W6BYH) Well, I have just worked the 160-meter contest for the eighth year in a row. Still worked about the same number of stations. I was all set this year with a new 130-foot vertical, insulated with 24 radials per Stanley's article in Dec. '76 *QST* . . . The vertical did the work fairly well. Managed to work California, a new state for me, but most of the old regular 160 guys couldn't be heard. W8JI had the strongest signal of them all. (W5GWD) I wonder how many contacts that Dick, Gary and I missed because of our calls on cw (K5QY vs. K5QNM)? (KN5TTN/-K5QNM) Power-line noise really made this a harrowing effort. (WØUA) It appears that my good friend and arch rival, K7OX, has outgunned me once again (Gary lives less than 10 miles from me), albeit by a narrower margin than last year. I take consolation, however, in the fact that my "footsteps" deter him from taking any breaks to watch weekend television (he missed the final episode of "Roots" for that very reason last year). In all fairness to K7OX, I must point out that I am a left-handed writer and can therefore send and log at the same time, while Gary just use his right hand to log and send. He is an exceptional operator despite this severe handicap. Any resemblance between a 160-meter contest and any other contest is purely nonexistent. The excitements and frustrations are unequalled on any other band. Noise and strong signal QRM can pound one into total insensibility by Sunday morning. Why do we love it? I don't know either,



Chas, YV1OB, beside his 66-foot aluminum tower, mesh grounded, vertical antenna.



On the left is Dave, KØJXP, and on the right is Steve, W5KI, two of the three operators of W5KI, West Gulf Division Leader and number eight nationally in the multioperator category.

#### Top Ten

Single Op		Multiop	
N4AR	108,621	W8JI	93,312
K1PBW	101,260	VE3BMV	88,275
W9RE	98,724	K8US	75,118
K3LR	97,251	W8LT	73,728
K5GO	95,628	K3BSY	68,401
K5NU/5	90,212	WA8YEE	58,870
K7ZZ/4	89,397	W9YH	57,486
K8CCV	88,011	W5KI	57,439
N4EA	84,392	W1MX	56,347
K6SE	84,000	KØJUS	45,968

#### Division Leaders

Single Op	Division	Multiop
VE5DX	Canadian	VE3BMV
K3LR	Atlantic	K3BSY
W9RE	Central	W9YH
WØDN	Dakota	NØEL
K5GO	Delta	
N4AR	Great Lakes	W8JI
W2GD	Hudson	WB2NEC
NØTT	Midwest	
K1PBW	New England	W1MX
W7FU	Northwestern	N7SC
K7OX	Pacific	
K7ZZ/4	Roanoke	N4PY
WØUA	Rocky Mt.	WØMS
N4PN	Southeastern	
K6SE	Southwestern	
K5NU/5	West Gulf	W5KI



Left to right: Jerry, WBØVVJ; K9DMR and WB9QPI, all of the NØEL multiop winning effort from the Dakota Division.

#### All-Time Division Leaders

##### Single Operator

Call	Score	Year
K3LR	97,251	77
W9RE	98,724	77
WØAIH	61,028	71
K4PUZ	95,978	76
N4AR	108,621	77
W2DXL	94,836	76
WØAIH	69,560	74
K1PBW	111,972	76
W7FU	45,818	77
W6KQG	47,056	76
W8LRL	93,808	76
KØZCM	65,817	74
KV4FZ	85,976	74
K6SE	84,000	77
K5NU/5	90,212	77
VE3BMV	85,941	74
ZF1TT	26,620	74

##### Multioperator

Call	Score	Year
WA2WLN/2	95,920	73
W9YH	84,916	76
WØAW	86,250	76
K4KIU	52,224	74
W8JI	93,312	77
WA2SPL	97,193	76
WØIS	52,920	76
W1MX	57,597	75
K7JCA	38,056	73
W6NUT/6	41,820	73
WB8APH	84,777	73
WØMS	53,868	74
W4OZF	75,522	76
WA6LXN/6	55,584	74
W5RTQ	71,442	76
VE3BMV	88,275	77
HC1CW	16,224	74



ZF2AH aka WA6VNR. A welcome DX multiplier in 207 logs.



Mike, K8US, of the multiop effort of the same call. K8US turned in the number-three multiop score in 1977.

but see you next year. (W7XZ) As newcomers to 160, we hope that we didn't annoy too many of the experienced operators with our operating technique. 160 is the band of gentlemen and ladies — even in the cut-throat competition of the contest. (K5GN/W5AC) Is there any hope to have 1.75 to 1.8 MHz in the WARC 1979 proposals? (VE2FH) As a "green-horn" to 160-meter operation, this was the most enjoyable and competitive contest ever for me. (WA1NIE) This was my first effort on 160 since December 7, 1941. (K6TS) Called JA2GQO to no avail.

Maybe next year a QSO with Japan? (W0AIH/9) Never heard so much activity on 160! Had 62 QSOs the first hour. (W4YE) With Tony, W2FJ, so active, I'm considering a suffix change. I kept getting "worked before." (K2FJ) Antenna was a shorted feed line to three-element, 20-15 meter quad at 70 feet. A top-loaded vertical I suppose . . . Did anyone hear any KH6s this time? (W0DN) My four-element Cubex 10-15-20 meter quad worked very well on 160 by disconnecting the shield on the 75 feet of RG8/U feed line. The noise wasn't too bad and most

of the stations came back to me after the first call. (WB2BVV) Much fun to work the East Coast. Heard YV, KV4 and KH, but couldn't raise them. (W7JAL) Where were all the W6 and W7 multipliers? (K3OMI/4) Finally, after only two months of activity on 160, I've worked 40 states and the contest helped out with some of the rare ones. Missed KH6 though. Heard KH6CHC call CQ around local sunrise here, only to have him drop out completely one minute later. Oh well! (WA4LGK) Missed the first day of the contest after battling 90-km/h winds for

## DX

<b>Federal Republic of Germany</b>			
DJ9VD	224-	14- 8- 3	
<b>Republic of Ireland</b>			
EI9J	360-	18-10- 3	
<b>France</b>			
F8EX	210-	15- 8- 2	
F8VJ	8-	2- 2- 1	
<b>Japan</b>			
JA3ONB	896-	32-14-	
JH1LKH	144-	9- 8-12	
JA3AHQ	112-	8- 7- 3	
JH2IRH	24-	4- 3- 2	
<b>Surinam</b>			
JA1PIG/PZ	4400-	88-25- 6	
<b>Czechoslovakia</b>			
OK2PGU	154-	11- 7- 4	
OL4ATY	80-	8- 5- 1	
<b>Venezuela</b>			
YV1OB	24,698-	233-53-20	
<b>Cayman Islands</b>			
ZF2AH(WA6VNR,opr.)	21,942-	207-53-24	

## U.S.A.

### 1

<b>Connecticut</b>			
W1FB	25,774-	260-49-17	
K1RM	24,250-	238-50- 8	
W1BH	17,157-	198-43- 6	
K1LGM	16,770-	215-39-17	
W1QV	16,497-	210-39-10	
K1ZZ	13,818-	163-42- 4	
K1DH	13,640-	155-44- 4	
W1BL	10,792-	142-38- 9	
K1THP	5824-	104-28- 6	
WA3BGN/1	4814-	83-29- 8	
WA1UAD	4060-	70-29- 6	
K1DW	2068-	47-22- 4	
N1JW	1344-	42-16- 3	
<b>Eastern Massachusetts</b>			
K2VY/1	49,856-	373-64-25	
W1FJ	15,600-	200-39- 7	

K1VV	9590-	137-35- 8	
W1BB	8541-	84-39-12	
W1YN	8280-	115-36- 6	
W1AX	3120-	65-24- 3	
W1JR	2530-	55-21- 4	
W1PO	528-	22-12-	
W1MX(N1RC,WA1RJX,WA4TTG,opr.)	56,347-	407-67-30	
<b>Maine</b>			
K1AQ	11,152-	164-34-12	
W1HDC	2250-	45-25- 3	
<b>New Hampshire</b>			
K1OX(K1IU,opr.)	71,060-	500-68	
W6MZW/1	11,748-	252-44- 8	
K1GG	6856-	123-36-	
WA1NIE	2725-	53-25- 6	
<b>Rhode Island</b>			
WA1KIP	1254-	33-19- 2	
N1DM(+WA1POJ,WB1EIE)	43,326-	369-58-29	
<b>Vermont</b>			
K1IK	13,981-	169-41- 8	
<b>Western Massachusetts</b>			
K1PBW	101,260-	544-83-32	
W1FZY	13,532-	139-34-10	
WB1FPX	12,402-	159-39-38	
K1KNQ	2200-	50-22- 5	

### 2

<b>Eastern New York</b>			
W2IB	68,655-	484-69-24	
K2BQ	46,680-	380-60-32	
WB2DXL	12,099-	162-37- 6	
WA9QHO/2	11,508-	137-42-17	
K2SD	6426-	93-34- 3	
WA2BSZ	6360-	106-30-10	
K2MN	3564-	66-27- 8	
W2FW	352-	16-11-	
W2IP	300-	15-10-	
WB2NEC(+WB21KA)	11,286-	147-38-21	
<b>N.Y.C. - L.I.</b>			
N2KA	25,824-	266-48-16	
W2KTU	15,504-	204-38-24	
W2GP	4536-	81-28-	
K2PHF	4234-	73-29- 4	
WB2AMU	4050-	81-25-10	
WA2ECI	1260-	84-16- 5	
<b>Northern New Jersey</b>			
W2GD	69,160-	452-76-14	

W2FJ	33,984-	282-59-	
WB2RTF	20,746-	224-46-14	
W2RQ	19,165-	231-41-	
WA2RYC	15,732-	207-38-23	
W2HUG	14,663-	169-43- 9	
WA2GEZ	11,322-	153-37-13	
W2TO	6660-	90-37- 6	
K2VJ	5888-	92-32- 3	
WA2ZWH	5394-	93-29- 9	
N2IN	896-	29-16-	
WB2MGV	120-	10- 6- 7	
<b>Southern New Jersey</b>			
W2REH	35,960-	278-62- 7	
N2LT	33,000-	279-55-	
W2PAU	5542-	80-34- 5	
W2EHN	4794-	69-34-	
WB2BVV(+WB2QSQ)	23,650-	235-50-	
<b>Western New York</b>			
W2MTA	33,920-	317-53-	
WA2QKF	27,560-	257-53-20	
K2FJ	15,500-	152-50-11	
W2JQR	9080-	101-40- 7	
WB2ABD	7800-	100-39- 4	
K2VV	6944-	107-32- 2	
WA2ECA	3150-	63-25- 3	

### 3

<b>Delaware</b>			
W3GL	30,422-	275-53-11	
<b>Eastern Pennsylvania</b>			
K3WW(K3VW,opr.)	56,374-	373-71-13	
W3AP	25,752-	213-58- 7	
W3TS	11,088-	132-42-	
K3OQF	9185-	135-34-12	
N3KR	8288-	112-37-10	
K5JZN/3	8034-	103-39- 6	
W3PC	7958-	85-46-11	
W3NM	2668-	58-23-	
<b>Maryland - District of Columbia</b>			
N4IN/3	81,400-	520-74-26	
W3USS(WA1FEO,opr.)	18,890-	221-45-14	
N3RL	1292-	38-17- 3	
<b>Western Pennsylvania</b>			
K3LR	97,251-	621-77-32	
W3QM	40,368-	342-58-26	
K3DR	3584-	56-32-	
K3BSY(+W3IW)	68,401-	452-73-34	

### 4

<b>Alabama</b>			
K4TO	42,816-	333-64-10	
K4GTQ	21,224-	188-56-22	
WB4ASV	5202-	75-34- 8	
<b>Georgia</b>			
N4PN	63,675-	417-75-12	
K4SB	60,775-	465-65-	
K4BAI	9963-	120-41- 7	
W4PDR	2112-	44-24-	
<b>Kentucky</b>			
N4AR	108,621-	651-81-27	
K4FU	62,622-	435-71-15	
W4YOK	8588-	113-38- 4	
<b>North Carolina</b>			
W4TMR	55,315-	462-65-29	
K3OMI/4	12,427-	143-43- 9	
K4YS	11,524-	134-43-10	
K4JO	5670-	66-42-	
N4PY(+WD4HSG)	32,754-	306-53-30	
<b>Northern Florida</b>			
AA4US	34,515-	261-65-23	
W4VQ	22,080-	171-61- 6	
WA4LGK	12,054-	142-42-14	
<b>South Carolina</b>			
K4II	31,976-	281-56-23	
WB4SJG	21,228-	171-61- 6	
K4RV	8815-	131-60- 6	
K4OAK	1974-	47-21- 3	
<b>Southern Florida</b>			
W4QM	34,770-	279-61-16	
W4OO	33,240-	268-60-14	
W4GUU	44,014-	80-33-12	
N4KB	3360-	53-30- 4	
<b>Tennessee</b>			
K4PUZ	59,994-	450-66- 7	
K4XU	46,308-	336-68-19	
<b>Virginia</b>			
K7ZZ/4	89,397-	564-77-39	
N4EA	84,392-	533-77-31	
W4DHz	46,002-	335-65-33	
K4PQ	44,014-	80-33-12	
W4YE	27,930-	236-57- 6	
K4TS	27,335-	247-55-22	
K4RS	16,307-	167-49-11	
W4ZM	15,181-	160-47- 5	
N4NW	9,280-	116-40- 4	
W4XD	8970-	115-39- 9	
W4KMS	8405-	105-43- 3	
N4DW	6208-	97-32- 5	

W4KFC	5280-	80-33-	
W4DM	1020-	34-15- 2	
N4MM	528-	22-12- 1	
<b>5</b>			
<b>Arkansas</b>			
K5GO	95,628-	601-78-24	
W5KL	38,656-	302-64-12	
<b>Louisiana</b>			
N5WA	71,632-	478-74-29	
K5KLA	15,648-	163-48- 6	
<b>Mississippi</b>			
W5AQ	35,813-	299-59-22	
W5XX	20,950-	200-52- 7	
W5NXYG/5	17,155-	181-47-	
W5GWD	1560-	39-20-20	
<b>New Mexico</b>			
N5EE	3200-	40-40- 6	
<b>Northern Texas</b>			
K5NU/5	90,212-	571-76-29	
N5TP	46,505-	323-71-13	
K5QY	23,968-	211-56-13	
W5FX	15,402-	151-51-17	
W5GF	13,867-	140-49-	
WB5RPU	12,201-	23-49-10	
K5SOR	8520-	105-40-10	
K5WIQ	6318-	81-39-10	
<b>Oklahoma</b>			
W5KI(+WB5PUF,K9JPX)	57,439-	400-71-35	
K5QNM(+KN5TTN)	12,320-	140-44-14	
<b>Southern Texas</b>			
K5NA	41,745-	298-69-12	
K5MA	34,645-	262-65- 9	
K5TM(K5ZD,opr.)	20,460-	169-60- 4	
W5MPX	5056-	79-32-	
W5AHC	748-	22-17- 2	
W5AC	36,790-	280-65-15	
W5AC(K5s GN MW VK,WB5A2I,WD5EGK,opr.)	36,790-	280-65-15	
<b>6</b>			
<b>East Bay</b>			
K6HIH	27,720-	244-55-	
N6LU	19,176-	201-47-	
W6JUD	17,958-	219-41-	
W6LK	9321-	168-39-11	
K6TS	3900-	78-25-10	
W6GXN	1462-	43-17- 7	
N6NE	1204-	43-14- 2	



Dave, K1THP, in his first foray into contesting on 160, managed 104 QSOs and 28 multipliers from Connecticut.



Carl, WA6JUD, relaxes in his well-appointed "shack" after a third-place finish in the East Bay Section.

three days, trying to put up my 1/2-wave dipole at my summer home on the shores of Lake Huron. Fierce and violent are the winds of Lake Huron. Everything must be tied down or it will be gone with the wind. Looking forward to the next contest. (VE3INQ)

### Scores

Scores are listed by country, by province within Canada, and by section within each U.S. call area. The highest single-operator station in each ARRL section and in each country receives a certificate.

The highest multiple-operator station in each section and country receives a certificate if there are three or more such entrants or, if, in the opinion of the Awards Committee, the entrant displays exceptional effort. Read the score listings as follows: call, score, QSOs, multiplier, hours of operation.

For those of us interested in the number of DX stations worked by each entrant, W3IN has come up with a nifty plug-'em-in formula to calculate the number of DX stations, strictly from the information given in the line score for each entrant.

The formula is as follows:

$$N = \frac{A}{B} - \frac{2C}{3}$$

where N = number of DX QSOs, A = total score, B = number of multipliers, and C = total number of QSOs.

### Feedback

In the score listings for the 1976 160-Meter Contest, the entry of K4TE was not listed due to an oversight. The line score should read K4TE 35,258-289-61 and be first in the Alabama Section.

Los Angeles			Idaho			Ohio			W9SR			WB9QPI, W9QJD, WB9VJV		
K6SE	84,000-	521-75-30	N7SU	29,382-	446-59-	K8CCV	88,011-	555-77-30	K9DA	53,268-	383-69-28	44,288- 346-64-42		
WA6MBP	9680-	220-44-18	W7IWU	2088-	58-18- 6	W8DB	60,060-	420-70-21	W9LTU	27,240-	224-60-18			
W7CB/6	1800-	50-18- 4				W8OK	49,302-	369-66-19	W9JOO	26,448-	225-58-15			
W6CN	988-	38-13- 1	<b>Montana</b>			W8DJY	42,453-	396-53-28	WB9QCP	26,196-	222-59- 7			
N6GL	24-	4- 3- 1	W6BYB/7	27,900-	231-60-	W8IQ	32,913-	309-53-12	W9CG	16,416-	171-48-12			
<b>Orange</b>			W7LR	8988-	107-42- 4	K8MN	28,611-	279-51-15	W9KEB	624-	24-13-			
W6BA	23,200-	200-58-16	K7CPC	1380-	46-15- 9	K8AC	25,599-	242-53-11	W9IQI	120-	10- 6-			
K6XX	12,710-	155-41- 4	W7CBY	702-	27-13- 5	W8MR	21,006-	193-54- 7	W9EI(+W9NJD)	45,370-	346-65-25			
W6AMO	11,680-	146-40-13	<b>Nevada</b>			W4ARIJ/8	17,020-	185-46- 9	K9ZUH(+WB9PXR)	24,840-	230-54-20			
N6PE	11,052-	152-36-19	W8RSW	15,510-	138-55- 9	K8BL	10,500-	125-42- 5	<b>Wisconsin</b>					
WB6AKR/6	5928-	114-26- 7	K8RVJ	10,296-	117-44-20	K8TH	6596-	97-34- 7	W9AIH/9	75,000-	494-75-17			
<b>Santa Barbara</b>			K7OX	44,880-	341-60-26	W8IM	3952-	76-26- 4	W9WQ	22,001-	223-49- 7			
NGMW	13,464-	153-44-10	W7XZ	41,595-	333-59-28	W8GRP	3122-	71-22- 4	W9GL	10,046-	104-32- 2			
W6KJP	4060-	71-28- 4	<b>Oregon</b>			K8DL	2550-	51-25- 2						
W6TYR	2200-	50-22-11	W7NCO	23,352-	204-56-22	W8JI(+K8KAS, W8FU, WB8TSO)	93,312-	555-81-20	<b>Colorado</b>					
W6EJO	1800-	50-18- 4	WA4HRG/7	8370-	135-31-12	K8US(+K8JK, N8DBS)	17,818-	523-71-30	W9U	63,210-	447-70-26			
<b>Santa Clara Valley</b>			W7IMP	1796-	42-19- 3	W8LT(K1LT, K8S LT NT, W8ERD,			W9LLR	56,097-	399-69-17			
WA6PGB	14,310-	117-53- 8	N7SC(+K7S OPR, TSV VIC, W7S			W8S INY TXE, W8BS AMX NXC,			K9PP/9	44,616-	338-66-20			
W6NSF	14,160-	177-40-21	LNG VSE, WB7S CBM RVE)	24,960-	228-52-	W8YEE(+N8ET, W8S FN, XU)			K9ZK	42,490-	302-70- 7			
W6OKK	5612-	122-23- 6	<b>Utah</b>			W8VM(W8IDM, W8BYWK, oprs.)	21,800-	218-50-14	K9GU	8514-	99-43-			
W6BXQ	4212-	78-27-14	N7RU	21,944-	211-52-14	<b>West Virginia</b>			W9RMA	2600-	50-26- 9			
N6UW	294-	21- 7- 5	K7UM	4118-	71-29- 4	K8OQL	33,488-	299-56-18	W9MS(+W9BCM)	28,826-	244-58-18			
<b>San Diego</b>			<b>Washington</b>			W8JWZ	414-	74-28- 4	<b>Iowa</b>					
N6CW	11,610-	129-45-	W7FU(K7RA, opr.)			W8VAZ	2640-	55-24- 5	W9NFL	45,440-	316-71-24			
W6XM	1312-	41-16-	W7DPW	45,818-	359-62-	<b>9</b>			W9GOL X	36,016-	309-58-25			
<b>San Francisco</b>			WA7GCI	29,040-	255-55-30	<b>Illinois</b>			W9PQ	5084-	82-31-16			
N6CT	44,730-	349-63-	N7XX	24,963-	231-52-28	N4SU/9	68,376-	459-74-25	W9RPF	4158-	63-33- 6			
AA6DX	20,430-	227-45-19	N7AM	16,215-	171-47- 7	W9GT	63,600-	297-56-14	<b>Kansas</b>					
WA6DNM	4408-	58-38- 2	N7AZ	14,160-	174-40-	W9JVC	33,432-	297-56-14	N9IN	45,156-	314-71-10			
<b>San Joaquin Valley</b>			K7DZ	12,810-	180-35-16	K9AD	30,030-	271-55-25	N9UU	31,350-	236-66-18			
K6MO/6	23,490-	216-54-14	W7BYK	8325-	111-37-16	W9PFB	25,574-	136-46-22	W9LNZ	15,816-	173-46- 7			
K6DNY	21,359-	199-53-25	W7NRP	7004-	103-34-	W9QA	24,400-	244-50-12	K9LHE	3654-	63-28- 4			
K6YK	7744-	121-32- 6	WB7QWE	1232-	44-14- 2	K9RS	20,200-	202-50-13	<b>Minnesota</b>					
W6BYH	3818-	83-23-	W7DRA	1176-	42-14- 5	W9AG	17,650-	175-50- 9	W9DN	47,996-	335-71-			
K6TG	3082-	67-23- 5	K7DU	624-	24-13- 2	K9JY	14,168-	161-44-	W9RH	3172-	61-26- 8			
W6MUV	1326-	39-17- 5	K7II	1176-	42-14- 5	W9BG	12,925-	136-47-10	W9QWY	308-	14-11- 5			
WB6ITM	1230-	41-15- 2	N7NC(+WA7UQV)	270-	15- 9- 1	W9SCGL	12,848-	146-44-	K9SE	45,968-	333-68-32			
<b>Sacramento Valley</b>			<b>Wyoming</b>			W9NII	9430-	112-41- 6	K9SHO, W9ARSE					
N6DM	28,084-	235-59-	W7JAL	23,010-	195-59-26	K9CW	7482-	87-43- 6	W9BHL(S)	45,968-	335-68-32			
W6VD	7392-	112-33-10	W7TO	252-	14- 9- 1	W9REC	7482-	87-43- 6	<b>Missouri</b>					
<b>Pacific</b>			<b>Alaska</b>			W9AB	110-	11- 5- 1	W9FBQ	66,360-	471-70-23			
KH6CHC	10,023-	99-39-	KL7GIH	858-	33-13-12	W9YH(K9S GL VV, WB9J JV, oprs.)	57,486-	426-67-23	W9JRM	11,172-	133-42- 8			
KH6J	1168-	35-16-	<b>8</b>			W9YCR(K9WA, WB9S FVY WSR			W9JRP	7548-	111-34-			
KG6DX	155-	31- 1-	<b>Michigan</b>			W9WNE, WB9S			W9JVP	5040-	70-36- 7			
<b>7</b>			W8CNL	45,648-	302-72-13	FQS GAA, oprs.)	28,851-	242-59-31	<b>North Dakota</b>					
W7RV	45,952-	353-64-33	N8NA	13,950-	155-45- 7	<b>Indiana</b>			W9ZTL	26,784-	216-62-13			
K7NN	29,673-	231-63-133	K8LJG	11,622-	149-39- 8	W9RE	98,724-	639-76-32	K9FRP	3380-	65-26- 7			
W7YS	6000-	100-30-	W8VPC	7105-	100-35- 6	<b>South Dakota</b>			N9EL(+K9DMR, N9OK, W9AMF,					
			K8HPS(WB8S, JCD, UDL, oprs.)	17,952-	187-48-15									