



W7NQ

# Results, 4th ARRL 160-Meter Contest

REPORTED BY RICK NISWANDER,\* WA1PID

**T**HE FOURTH ANNUAL ARRL 160-Meter Contest, held this past December 7-9, recorded a very healthy log increase of over 30% — 338 entries were received, surpassing the previous record of 272 in 1971. Foreign country representation hit a new high of 11 — 3 more than the old mark of 8 in 1972. We list 78 multipliers this time — another record. In fact the only thing that did not set a new mark was entries received from different sections (67) tying the record set in 1971 and eclipsing last year's total of 63.

Incorporated in the writeup this year is a listing of the all-time record holders by division. This year single ops chalked up ten new division highs — multiops had 7.

Antennas have always been a point of interest among hams especially when 160 is considered. A quick evaluation of summary sheets from those describing antennas reveals a few interesting num-

\*Asst. Communications Manager, ARRL

bers. Center-fed wire antennas (dipoles, inverted vees, zepps, etc.) were the most popular types, with 127 entries mentioning that they used one. Many of these are 80-meter (and even 40-meter!) dipoles somehow brought to resonance on 160. The next category was verticals with 85 — these varying from 120 foot monsters to 20 foot midgets. End-fed wires accounted for 65 entrants. The inverted L wire configuration was used by 22. Other antennas numbered 11. Two of the more unusual antennas used were a tower guy wire used by KH6IJ, and K5PFL's 100 foot vertical with 204BA top hat (which is just a clever way of saying that he loaded his tower).

Notable notes . . . Probably the longest haul QSO during the contest was between KL7CL and LU5HF1 at 0910Z on December 9, a path of about 8500 miles. . . . WB4ADT and K4ADT ran into the "QSO B4" routine. Be thankful you're not both in the same state, guys! . . . Hawaii activity was up this year. Four — count 'em, four — logs this time. KH6CHC came up with top honors with a very nice 100 QSO total. . . . W6MUV used a homebrew solid-state transmitter with a 2N3919 final running 12 watts, and a Hallicrafters SX-9



This is the transmitting setup of W1SL. The rig was made by Gross Radio of New York in the mid-1930s. It uses type 46 tubes at about 25 watts input. The antenna? Oh, yes — a 30-foot dish sitting on a German WW II radar mount; it is used for 432 and 1296 EME work. Taking this picture was no small feat. Besides having to get both units in focus, Tom had to take the window out since it was too foggy to get a clear shot of the antenna — all this in the middle of December in Connecticut.

From April 1974 QST © ARRL

The multiop crew at WB8APH. That's APH on the left and K3RUQ at right. They used a 130-foot vertical with over 200 radials, plus 5 beverage receiving antennas and racked up 84K — good enough for number 2 nationwide in the multiop class.



receiver — and took the SJV certificate. . . . K6NY used all homebrew gear and a 40 foot vertical to grab the San Diego award.

Reporting methods will be changed for the next contest. A valid entry will require your log and summary sheet. Check sheets will not be necessary. This change will go into effect for the 1974 contest which is scheduled for December 6-8.

Certificates are scheduled for an April 15 mailing.

### SOAPBOX

QRM is bad news. Seems like every time I called a 7, somebody called CQ on the frequency. — (W2FHU). I was surprised at what a random wire can do. — (WB4ASW). Fine turnout and the old band jumped with all those stations, including many new ones that I heard or worked for first time. — (WØII). Appreciated the many stations that stayed with me until we completed QSOs through QSB and heavy QRN at this QTH. — (K7ZIA). Even with short call signing "stroke 2" takes so much time. — (K2FJ/2). Didn't pile up much of a score but it was more than I had hoped for from a 12-watt transistor rig. — (W6MUV). I may be the lowest powered station on — 960 milliwatts input. — (W4EZW). Very good contest. Lots of local QRM and competition. CU again next year. — (WA8SJX). Work made it necessary for me to not be at the home QTH for the contest but did QSX with quarter-wave from San Francisco hotel and heard G3ZEM and PAØHIP. — (W1HGT). Seems like some of the loudest stations on the band have the worst ears. I had little luck calling some of the "big guns" while calling some stations barely readable produced instant replies. Vote for best effort goes to DL2GG/YV5, who tried for 5 minutes to get my call through the noise; all in vain. — (WA9AUM/1). I was impressed. Here was a

band with people operating many different modes who, for one weekend a year, could go all cw without anyone getting uptight. The day after the contest everything was back to normal with everyone discussing how they did. The results, from the conversations, appear to be impressive. I'm looking forward to reading the report even if I am somewhere under the pile. — (WA6CCM). Beautiful moonlit nights both nights here, but Murphy was over in the neighboring provinces playing with his thunderbolts. The resultant 40-dB-over-9 QRN was raising havoc with my reception. I sincerely apologize to the many who called who I simply

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### 4th ARRL 160-Meter Contest

Within each section, scores are broken down by callsign, final score, contacts, sections and operating time. Example of listings: VE1CD 33,453-252-59-25 or final score of 33,453, number of contacts 252, number of multipliers 59 and total operating time 25 hours. An asterisk denotes a Hq. staff member, ineligible for an award. The station first-listed under each section or non-W/VE country is the award winner. Multi-operator stations are grouped in order of score following single-operator station listings in each section tabulation.

Single Operator			Division	Multi Operator		
Call	Score	Year		Call	Score	Year
W3IN	78,432	73	Atlantic	WA2WLN/2	95,920	73
WA9MCC/9	76,923	72	Central	W9YB	38,316	72
W0AIH	61,028	71	Dakota	K0IJL	30,180	71
W5SUS	53,868	73	Delta	W5GWD	8112	73
K4GSU	75,096	73	Great Lakes	WA8IJ	69,450	73
W2PV	61,488	73	Hudson	WA2SPL	38,880	72
WA0VDX	44,689	73	Midwest	WA0QJX	2760	70
K1PBW/1	82,871	73	New England	K1RQE	46,345	73
K7IDX	26,796	73	Northwestern	K7JCA	38,056	73
WA6DKF	31,806	72	Pacific	W6NUT/6	41,820	73
K4CIA	51,191	72	Roanoke	WB8APH	84,777	73
WA0CVS	48,960	73	Rocky Mtn.	W0MS	25,144	72
W4YWX	42,746	71	Southeastern	W4HAW	6876	71
W7NQ	47,668	73	Southwestern	W6YRA	18,048	72
W5SZ	64,528	72	West Gulf	K5DEG	30,031	71
VE3BMV	65,895	73	Canadian	VE1MX	15,540	72

VE		Northern New Jersey		Tennessee		W6GWQ	
<b>Maritime</b>		WA2UOQ	58,625-424-67-22	K4PJ	33,824-302-56-	WB6NSF	7956-109-36-7
VE1CD	33,453-252-59-25	W2KHT	14,924-176-41-18	K4ON	7840-112-35-	W6BGJ	3564- 81-22-12
VE1MX	22,295-202-49-33	WB2URU	10,836-129-42-13	W4UD	7800-100-39- 7	W6BLJ	1598- 47-17-15
VO1KE	7095- 79-33-	W2HUG	10,404-153-34-10	<b>Virginia</b>		G8KL/W6	1472-46-16-12
<b>Quebec</b>		W2GBY	8560-107-40-12	W4QCW	24,648-231-52-12	W6GBY	832- 32-13- 7
VE2GS	5346- 81-33-	W2DEN	2912- 56-26-	W4YZC	17,400-174-50- 7	W6NUT/6 (+W6GUZA)	41,820-299-68-
<b>Ontario</b>		WA2TWS	850- 25-17- 5	W4ZM	14,016-146-48- 7	<b>San Diego</b>	
VE3BMV	65,895-467-69-	W2MPP (+W2OG)	1050- 35-15- 6	K4JM	10,508-142-37-	K6NY	10,660-130-41-25
VE3BBN	7696-104-37-	<b>Southern New Jersey</b>		W4KFC	9272-122-38-	W6MAR	6156- 81-38- 5
VE3EB	5040- 84-30-11	K3MNT/2	6200-100-31- 7	W4UPJ	8424-117-36-11	K6SDR	2400- 60-20- 5
VE3BFK	4860- 90-27-13	W2PAU	720- 24-15- 1	K4LDR	7128-108-33- 6	<b>San Joaquin Valley</b>	
VE3AUI	352- 16-11-	W2BAP	672- 15-14- 6	WB4UUE/4 (W4JVN, opr.)	4640- 80-29-13	W6MUV	1170- 39-15- 9
<b>Saskatchewan</b>		W2BAY	532- 19-14- 2	K4FTO	3996- 74-27-	K6YFZ/6	792- 33-12-
VE5XU	30,656-238-64-21	WA 2 W L N / 2 (+WA 2 S RQ)	95,920-544-80-40	W4WSF	3016- 52-29- 1	<b>Sacramento Valley</b>	
<b>British Columbia</b>		WA3FFR	1558- 41-19-	W4EZW	1224- 34-18- 5	WA6JVD	18,706-199-47-
VE7HQ	8514-128-33-	<b>Western New York</b>		W4KMS	520- 26-10- 6	W6ZGM	16,468-179-46-17
VE7AGN	1620- 45-18-	W2FHU	19,552-227-43-14	W4PRO (+W4s GSM HBK)	57,753-402-69-	W6VD	5700- 95-30-19
<b>USA</b>		K2FJ/2	18,576-192-48-18	WA4DUS	57,753-402-69-	W6NJU	2520- 60-21- 3
<b>1</b>		W2QIP	13,172-178-37-12	<b>5</b>		<b>Hawaii</b>	
<b>Connecticut</b>		WA2BDM	4980- 83-30-10	<b>Arkansas</b>		KH6CHC	8260-100-35-
K1PBW	82,871-445-79-31	W2VXA	2496- 52-24-	W5SUS	53,688-402-67-29	KH6J	6012- 76-36-16
WA1PID*	29,146-235-59-15	W2UKA	56- 7- 4- 1	W5SRTG	44,756-334-67-29	KH6RS (K2SIL KH6HFJ)	7600- 92-40-
K1ZND*	23,800-229-50- 8	WA2RFR (+WA2UKS)	1558- 41-19-	W5NKL	7350-105-35- 4	KH6GMP (+KH6GQW)	720- 24-15-14
W1TX	18,912-182-48-21	<b>3</b>		W5MYZ	4466- 77-29- 7	<b>7</b>	
W1CER*	14,430-195-37-15	<b>Delaware</b>		<b>Louisiana</b>		<b>Arizona</b>	
W1FBY*	13,817-158-41- 5	W3GL	14,473-175-41-12	K5TFG	28,609-233-61-30	W7NQ (W7CFJ, opr.)	47,668-343-68-26
W1IODX	11,020-145-38-16	<b>Eastern Pennsylvania</b>		W5WMU	13,200-150-44- 6	W7YS	3864- 69-28-
W1QV	10,840-134-40- 4	K3CY	35,197-269-61-12	<b>Mississippi</b>		<b>Idaho</b>	
WA9AUM/I*	10,744-158-34-10	W3QOR	14,617-154-47- 7	W5RUB	13,376-152-44- 8	W7HZL	11,352-132-43-19
W1LNO	10,500-150-35- 8	W3AJS	13,580-166-35-21	W5NYG/5	3780- 63-30-10	W7KTV	6480- 90-36-14
W1AW (WA3JSU, opr.)*	7980-114-35- 4	W3CNS	7820-115-34- 6	W5GWD (+K4ZLE W4ZAF)	8112-104-39-16	W7IUO	624- 26-12- 3
W1KID	6600-110-30- 3	G3HLW/W3	4756- 82-29- 5	<b>New Mexico</b>		<b>Montana</b>	
W1BIB	4416- 69-32-	W3KV	3696- 66-28- 5	K5MAT	6966- 81-43- 5	W7MKB	1224- 34-18- 4
WB9FJT/I*	2600- 50-26- 4	WA3ATX	3267- 59-27- 2	K5AM	5478- 83-33- 2	<b>Nevada</b>	
W1YNC/I*	2544- 53-24- 3	WA3NAI*	1260- 35-18-	W5RE	1840- 40-23- 2	W7ABX	6272-112-28-17
W1AIRSG (WA7WXY, opr.)	352- 16-11-	<b>Maryland</b>		<b>Northern Texas</b>		<b>Oregon</b>	
W1SL*	144- 12- 6-	W3IN	78,432-498-76-31	W5KYY	14,063-142-49-18	W7IXZ	17,800-178-50-22
W4WFL/I*	120- 10- 6- 1	W3GN	47,515-352-65-	W5NW	8858-103-43-24	W7WWR	11,782-137-43-12
W1ARDN (K1ZND WA1ABV)*	10,800-129-40- 5	W3IRE	18,400-200-46-24	W5FIF	7840- 98-40-16	W7BKN	3696- 77-24-18
<b>Eastern Massachusetts</b>		W3AXW	4140- 69-30- 5	W5QF	3770- 65-29- 9	W7IMP	1806- 43-21- 3
K1C'P	42,775-349-59-26	W3MTK	1540- 35-22- 4	W5KYD	2808- 54-26- 6	<b>Utah</b>	
W1JUY (W1JYY, opr.)	37,584-315-58-20	W3CSZ	816- 24-17- 2	W5QGZ	192- 16- 6- 2	K7ZIA	16,524-162-51-14
W1PL	33,687-270-57-26	<b>Western Pennsylvania</b>		<b>Oklahoma</b>		W7CYH	7696-104-37-10
K1NOL	23,912-217-49-11	W3SN	7548-102-37- 9	K5JVF	14,580-135-54-14	W7AOAU	320- 16-10- 3
W1BB/I	8964- 75-36-15	W3BZN	4080- 68-30-30	W5KG	12,838-131-49-16	<b>Washington</b>	
W1ANRV	7392-112-33- 3	W3IWT (+K3BSV)	27,552-246-56-25	W5VAP	5580- 93-30-16	K7IDX	26,796-225-58-26
W1DDC	2928- 61-17-11	WA3EQO/3 (+WA3FTV)	4968- 69-36- 4	K5QNM (+WB5JFR)	11,008-128-43-17	W7NP	8890-127-35-12
W1AX	1496- 44-17-	<b>4</b>		<b>Southern Texas</b>		W7IU	8280-115-36-
W1MSK (+WA1OML)	13,330-152-42-12	<b>Alabama</b>		W5RTO	50,120-352-70-22	W7IEU	3618- 67-27-12
<b>Maine</b>		K4MG	7770-105-37-11	K5PFL	43,332-308-69-	K7TAK	2376- 54-22-10
W1VF	7462- 76-41-13	WB4ADT	4002- 69-29- 4	W5ZNY	25,559-208-61-15	W7FIM	900- 30-15- 6
K1ROE (+K1MTJ)	46,345-325-65-34	<b>Georgia</b>		K5DEG	21,336-189-56-	K7GGA	30- 5- 3- 1
<b>New Hampshire</b>		W4YWX	32,940-267-61-18	W5RPJ	4092- 62-33- 8	K7JCA (+W7EXM Auggie)	38,056-275-67-28
W6MZW/I	16,074-168-47-	WB4RUA	18,411-179-51-12	W5SLTQ	3540- 59-30- 8	W7RM (+W7AGW)	27,877-227-61-14
W1FZ	12,402-159-39-11	W4AQL (WB4JSK, opr.)	18,078-195-46-12	W5WQF	1840- 40-23- 3	<b>Alaska</b>	
W1MUL	1596- 38-21- 3	W4APG	12,330-137-45-20	W5YG (WB2NTC WA5s RRL)	27,816-225-61-27	K7LCL	781- 31-11-
W2MKN/I	1056- 33-16-10	<b>Kentucky</b>		<b>6</b>		<b>8</b>	
<b>Rhode Island</b>		K4GSU	75,096-514-72-29	<b>East Bay</b>		<b>Michigan</b>	
K1IKN	11,268-155-36-16	W4GSH	38,130-306-62-18	K6ILG	14,190-165-43-21	K8VOP	24,000-240-50-17
W1OP (K1HZN WA1s PJD QOG RfT)	14,952-178-42-24	K4FU	31,978-271-59-14	W6CCM	1056- 33-16- 5	W8TBZ	23,712-228-52-25
<b>Vermont</b>		WB4ASW	20,424-231-52-19	W6RQZ	400- 25- 8- 3	K8LIQ	23,500-235-50-32
W1ABV/I*	22,646-231-48-12	W4YOK	12,384-144-43- 8	<b>Los Angeles</b>		W8BDSG	8296-244-34- 9
W3KE/I	2300- 50-23- 3	W4KFB	1890- 45-21- 8	W6DGH	30,303-239-63-15	W9AQW/8	8208-108-38- 6
<b>2</b>		W4AJJ	40- 5- 4- 1	W9LVT/6	9438-121-39-10	W8WVU	4466- 77-29-
<b>Eastern New York</b>		<b>North Carolina</b>		W6YY (WA6MBP, opr.)	7632-106-36-10	W8AUSU	192- 12- 8-
W2PV (WB2OFU, opr.)	61,488-400-72-	W4TMR	34,257-299-57-30	W6DOX	6572-106-31- 5	W8SIX (+WA8WCZ)	35,518-301-59-
WA2SPL	55,141-387-67-	K4ZCP	30,752-242-62-14	W6ZVC	5974-103-29-10	W8HID (WA8YUZ WB8MJJF)	28,242-260-54-19
W2HHC	28,249-262-53-29	K4EQA	15,456-165-46- 9	W6SGJ	5000-100-25-15	K8BYI (WB8KZ WA8s ROI)	23,600-236-50-30
W2LWI	8056-106-38- 7	K4ADT	3720- 62-30- 4	K6DDO	4692-102-23-10	ZDR WB8s DMC LZV QET)	23,600-236-50-30
K2HOQ	5644- 80-34-10	K4CAX	2832- 59-24- 3	K5MHG/6	336- 21- 8- 5	K8NTK (WB8JW WB8s AKH LCN)	4428- 82-27-13
W2ACQ	5504- 86-32- 6	<b>Northern Florida</b>		<b>Orange</b>		K8HPS (WB2EYD WB8JCD)	3200- 64-25-17
W2AKUL	1320- 33-20- 4	WB4VUP	22,472-212-53-22	W6AMO	10,656-144-37-13	<b>Ohio</b>	
W2FW	256- 16- 8-	W4GGU	19,900-199-50-14	WB6FNI	2928- 61-24-	K8CCV	51,750-372-69-31
<b>N.Y.C.-L.I.</b>		<b>South Carolina</b>		<b>Santa Barbara</b>		W8DB	45,158-334-67-16
W2GP	11,248-152-37-12	W4LDM	24,168-209-57-13	W6UA (W6UM, opr.)	20,185-182-55-	WB8JJA	10,686-137-39- 9
W2KTU	5460- 91-30- 8	<b>Southern Florida</b>		W6JEO	1312- 41-16- 9	<b>3200- 64-25-17</b>	
W2AYJN	3904- 61-32- 3	W4BRB	25,193-202-61-10	<b>Santa Clara Valley</b>		<b>3200- 64-25-17</b>	
W2CQU	2964- 57-26- 8	K4IRO	24,136-208-56-17	W6PGB	15,916-173-46-	<b>3200- 64-25-17</b>	
		W4OZF/4	23,691-219-53-28	W6PAA	10,560-120-44- 6	<b>3200- 64-25-17</b>	
		K4KO	7527- 95-39-15			<b>3200- 64-25-17</b>	
		W4VJH	4288- 67-32-			<b>3200- 64-25-17</b>	
		K4NE	3596- 62-29- 5			<b>3200- 64-25-17</b>	

could not pull thru even tho they were as loud as 10 or 10 dB over 9. LU6EF, tho he worked nobody, wants it to be known that he heard W5RTQ, WA2WLN/2, W4BRB, W4EX and KV4FZ. — (LU5HFH). Very interesting contest. I worked my first W and VE stations on Top Band. Best conditions about 1/2 hour before sunrise. — (OH2BO). KH6 stations driven off air by 1200 GMT Saturday morning due to static discharge. This was peak time for East Coast. More activity noted but many stations did not look on high end of band. — (KH6CHC). Working OH2BO made it worth the aggravations and lost sleep. — (VO1KE). Two miles from WM and missed it! Next year I won't drive so far north. — (WA1ABV/1). Haven't had more fun since I worked my first SS contest. — (K3CY). Had a ball and expect to do it again next year. — (W3KV). Spent first hour of contest taking an exam. Spent next 2 hours fixing the antenna after some ambitious residents of my dorm had cut it down. Never did get the SWR below 4 to 1 and could not work EU very well even though they were all loud. — (WA1JYY, opr. of WA1JUY). One of the best ARRL contests going. — (WA2UO). As always a most enjoyable contest. — (W4TMR). Don't know which is most fun . . . working EU on 160 or via Oscar 6. Great contest, can't wait until next year. — (K4ZCP). Keep it like it is. — (K4FU). Gets tougher each year. More and more local stations on each year. Squeezing in 6 or 7 strong ground-wave stations in a 25 kHz segment leaves little elbow room to say the least. The potency of ground-wave signals on 160 is really something else. — (W5RTQ). Think I shall see if I can get a church in Wyoming. Have almost always missed that state. — (W0AIH). Lost antenna in ice storm a few days before contest. It was tangled rather bad in guy wires but did get it to load for two hours of operation. — (W0NFL).

K1PBW	82,871	WA2WLN/2	95,920
W3IN	78,432	WB8APH	84,777
K4GSU	75,096	WA8IJI	69,450
WA9MCC/9	72,451	W4PRO	57,753
VE3BMV	65,895	K1RQE	46,345
W9DL	65,016	K8KAS	44,550
W2PV	61,488	W8LT	42,780
WA2UOO	58,625	W6NUT/6	41,820
W0OAW	58,248	K7JCA	38,056
WA2SPL	55,141	W8SJJX	35,518

W3IN	Atlantic	WA2WLN/2
WA9MCC/9	Central	W9YB
W0OAW	Dakota	
W5SUS	Delta	W5GWD
K4GSU	Gr. Lakes	WA8IJ1
W2PV	Hudson	W2MPP
WA0V DX	Midwest	
K1PBW	New Engl.	K1RQE
K7IDX	Northwestern	K7JCA
WA6JVD	Pacific	W6NUT/6
W4TMR	Roanoke	WB8APH
WA0CVS	Rocky Mt.	W0MS
W4YWX	Southeastern	
W7NQ	Southwestern	
W5RTQ	West Gulf	W5YG
VE3BMV	Canadian	

W8PCS	7560- 90-42- 7	W9UDK	2208- 46-24- 3
W8AQ	6160- 77-40- 7	W9HVP	990- 33-15-
W8EX	4880- 71-34-		
W8PM	2900- 58-25- 3		Indiana
W8CBC	2200- 44-25-	W9BRN	51,389-379-67-27
W8VZE	504- 21-12- 3	W2EQS/9	39,060-307-63-
W81JI (+WB8s JKA QMC)	69,450-448-75-15	W9SFR	21,465-201-53-10
K8KAS (+W8JSX)	44,550-333-66-12	W9EED	20,246-191-53- 8
W8LT (WAILKU WBERD WB8s		W9ABWY	13,416-156-43- 5
DEA FWQ INY JRS JXS RDT		W9STW	4420- 65-34-
T. Merrick)		W9UC	700- 25-14- 3
		W9GFS	198- 11- 9-4
		W9YB (WA5BRB WA7USG	
		WB9DXK)	
W8AYWX (+W8IDM)	42,780-342-52-22		31,590-291-54-32
WB8GUJ (+WB8s GQH JJI JJJ	29,972-254-59-22	W9MDW (+W9SLU)	
KGO MVR)			5580- 93-30- 9
	10,212-138-37-14		Wisconsin
W8EDU (WA3BGE WA8TKW)	3960- 66-30- 4	WA9MCC/9	72,451-460-77-26
		WB9AVN	19,136-208-46-17
West Virginia		WA9BZY	15,000-150-50-24
W8JWX	1760- 44-20-	WB9FTD	6208- 97-32- 8
WB8APH (+K3RUQ)	84,777-528-77-34	K9WFH	1344- 42-16-
		W9MUA	540- 18-15- 3
		W9DK (WA9SWX WN9MFB)	
			29,400-294-50-26
	9		0
	Illinois		Colorado
W9DL	65,016-447-72-23	WA0CVS	48,960-360-68-24
W9FIU/9	48,824-358-68-	WB9BJ	408- 17-12- 4
W9ABA	30,360-253-60-24	W0MS (+WB0CMM)	18,522-189-49-
W9GYY	24,472-217-56-23	WB0HBJ (+WB0DJD)	468- 18-13- 8
W9PNE	20,628-191-54-18		
W9BMY	14,878-173-43-16		
W9AR1	11,176-127-44-10		
W8TDR/9	10,742-131-41-13		
W9REC	9460-110-43-16		
W9IOG	8424-108-39-13		
W9DCN	7194-109-33-13		
W9WYB	4726- 68-34- 8		
W9TAL	4104- 76-27- 5		
K9KEP	3658- 59-31- 9		
W9BKXX	3408- 71-24-29		
K9AKC	2280- 60-19- 9		
			Iowa
		WA0VDX	44,689-332-67-17
		W0II	14,496-151-48- 8
		W0MOQ	9064-103-44- 5
		W0NFL	3904- 61-32- 2
			Kansas
		K0KU (WA0TKJ, opr.)	41,844-317-66-78

WØQGV <sup>R</sup>	11,970-133-45-11		<b>Wales</b>
WØPSF/ <sup>ø</sup>	2226- 53-21- 6	GW3UCB G4BRK)	(G3s WKH WXS ZXZK)  3072- 64-24-11
<b>Minnesota</b>			
WØOAW	58,248-400-72-20		<b>Switzerland</b>
WØAIH	54,031-376-71-15		
W2TA/ <sup>ø</sup>	39,650-305-65-20	HB9NL	418- 19-11-
KØIJP	25,812-236-54-		<b>Japan</b>
KØIEA	23,744-212-56-20		
WØHW	19,440-180-54- 8	JA7NI	70- 7- 5-
WØIH	6400- 80-40-14	JA2UEO	30- 5- 3-
WØRHI	1886- 41-23- 5	JA7MJ	4- 2- 1-
<b>Missouri</b>			<b>Argentina</b>
KØJPL	11,176-127-44-11	LUSHF1	2376- 44-27-
WØBV	4560- 76-30- 5		<b>Austria</b>
<b>Nebraska</b>		OESKE	224- 16- 7- 3
WØMSC	21,280-190-56-17		<b>Finland</b>
WØVEA	240- 12-10- 5	OH2BO	18- 3- 3-
<b>North Dakota</b>			<b>Czechoslovakia</b>
WØZTL	13,800-138-50- 8	OK1ATP	756- 27-14-
<b>South Dakota</b>			<b>Netherlands</b>
WAØCPX	11,266-131-43- 9	PAØHIP	272- 17- 8- 6
<b>DY</b>			<b>Venezuela</b>
Ireland		DL2GG/YV5	6528- 96-34-
EI9J	272- 17- 8-		<b>Check Logs</b>
<b>England</b>		VE7XN WA4DRU	
G3XYV	1596- 42-19- 3		

event violations occur, the licensee is obligated to show the FCC how he will prevent such occurrences – in other words, tighter control. It is possible that we will see a notice of proposed rulemaking from FCC very soon on this subject. Staff level discussion with FCC continue toward this end. – *WIICP/WR1ABH*