# **Results, 1995 ARRL RTTY** Roundup

I can't believe how much fun I had! This contest is an absolute "must" for next year.-Ray, VE3RGL

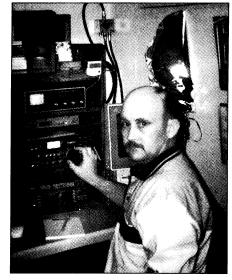
**Contest Manager** 

By Billy Lunt, KR1R and Warren C. Stankiewicz, NF1J Assistant Contest Manager

ave you ever tried a RTTY contest? It's a lot of fun! Now that there are a lot of RTTY boxes out there, more people are trying digital modes. Even at the bottom of the sunspot cycle, when you'd expect HF activity to be at its lowest, participation in this contest keeps growing. We received 420 entries this year, up 8% over last year's 389 entries. These aren't large numbers, but the amazing thing is participation keeps climbing even when you'd expect it the least.

With more people filling the airwaves with RTTY clatter, the obvious happenseveryone works more people than they expected. People who barely qualified for the 50-QSO certificate last year made twice that number of QSOs this year. When you work more stations, you have more fun, and fun is the name of the game. That's why we join in these operating events-to have fun!

How did we get so many people on RTTY? Most of us started working on it long before the contest period. If you spend a little time talking up the contest and enticing a few of your local hams to shake the



DJ, NØIQX, claims, "The best part of the contest is when the mailman starts to deliver the QSL cards." He sure helped a lot of people who needed South Dakota this year!

dust off their dormant multimode controllers, it will do a lot more than give you a QSO. After all, there's more than one ham out there who started out to make just one or two contacts only to find that, like potato chips, this is addictive! If you're not active on RTTY yet, get on! Before you know it, you'll be rabidly hunting down contacts with the rest of us.

Take the story of Ray, VE3RGL, for example, in the sidebar, "Intimidated by RTTY?" You don't have to be a technical wizard to figure this stuff out. We'll bet that, with a little work and some time spent studying the manual, you can be out there having just as much fun as he had. If you're a veteran "green-key pounder," why not

Top 10 So Single Opera		Multioperate	76					
W/VE-Low		•	W/VE-Low Power					
AA5AU KA4RRU	93,955 65,424	WA2UKP WS1E	54,438 51,243					
NM3E KK4DK	53,044 52,668	KFØLZ WAØVGR	45,276 36,573					
KJ5QN KØBX	48,126 47,940	N1JEB KS5V	35,003 32,092					
N4IQ	47,724 44,226	KB9ATR KBØJSU	23,048 18,560					
W5VZF N6HC	42,276	WW1Y VE3UR	18,176					
KG5EG W/VE—High	42,120 Power	W/VE—High						
N9ITX/7	84,320	AB5KD	147,616					
N5RZ	83,607	K1IU	112,332					
WB7AVD	81,048	W4AQL	94,545					
K4HSF	79,776	WXØB	85,338					
AB8K	72,400	N9NCX	66,381					
VE3XO	70,752	AA6KX W5GAD	62,244					
VY2SS NN2G	66,703 64,582	KQ4QM	55,860 47,730					
AA5ZQ	64.512	KI5TI	39,975					
KN6DV	63,960	VE3FJB	38,654					
DX-Low Pov	ver	DX—Low Po	wer					
YW5RY		V31RY	36,260					
	60,490 42,210							
YW5RY VP5JM YV5NFL	60,490 42,210 35,186	V31RY	36,260					
YW5RY VP5JM YV5NFL EA7GXD	60,490 42,210 35,186 30,780	V31RY TA2II IK1TWC	36,260 15,502 9,234					
YW5RY VP5JM YV5NFL EA7GXD GØARF	60,490 42,210 35,186 30,780 30,544	V31RY TA2II IK1TWC <b>DX—High Pc</b>	36,260 15,502 9,234					
YW5RY VP5JM YV5NFL EA7GXD GØARF V31JU	60,490 42,210 35,186 30,780 30,544 27,608	V31RY TA2II IK1TWC <b>DX—High Pc</b> KP2N	36,260 15,502 9,234 wer 101,238					
YW5RY VP5JM YV5NFL EA7GXD GØARF V31JU YU1NR	60,490 42,210 35,186 30,780 30,544 27,608 24,108	V31RY TA2II IK1TWC <b>DX—High Pc</b>	36,260 15,502 9,234 wer 101,238 45,444					
YW5RY VP5JM YV5NFL EA7GXD GØARF V31JU YU1NR SV2BFN	60,490 42,210 35,186 30,780 30,544 27,608 24,108 23,436	V31RY TA2II IK1TWC <b>DX—High Po</b> KP2N GW5NF	36,260 15,502 9,234 wer 101,238					
YW5RY VP5JM YV5NFL EA7GXD GØARF V31JU YU1NR SV2BFN PAØXPQ	60,490 42,210 35,186 30,780 30,544 27,608 24,108 23,436 22,989	V31RY TA2II IK1TWC DX—High Pc KP2N GW5NF J68BU IK2BUF LX4B	36,260 15,502 9,234 wer 101,238 45,444 41,550					
YW5RY VP5JM YV5NFL EA7GXD GØARF V31JU YU1NR SV2BFN PAØXPQ IK1HSR	60,490 42,210 35,186 30,780 30,544 27,608 24,108 23,436 22,989 20,448	V31RY TA2II IK1TWC DX—High Pc KP2N GW5NF J688U IK2BUF IK2BUF LX4B RK9CWA	36,260 15,502 9,234 101,238 45,444 41,550 33,282 14,880 14,308					
YW5RY VP5JM YV5NFL EA7GXD GØARF V31JU YU1NR SV2BFN PAØXPQ IK1HSR <b>DX—High Po</b>	60,490 42,210 35,186 30,780 30,544 27,608 24,108 23,436 22,989 20,448 wer	V31RY TA2II IK1TWC DXHigh Po KP2N GW5NF J68BU IK2BUF LX4B RK9CWA LZ1KBB	36,260 15,502 9,234 wer 101,238 45,444 41,550 33,282 14,880 14,308 7,830					
YW5RY VP5JM YV5NFL EA7GXD GØARF V31JU YU1NR SV2BFN PAØXPQ IK1HSR <b>DX—High Po</b> HH2PK PW2A	60,490 42,210 35,186 30,780 30,544 27,608 24,108 23,436 22,989 20,448 wer 102,900	V31RY TA2II IK1TWC DX—High Pc KP2N GW5NF J688U IK2BUF IK2BUF LX4B RK9CWA	36,260 15,502 9,234 101,238 45,444 41,550 33,282 14,880 14,308					
YW5RY VP5JM YV5NFL EA7GXD GØARF V31JU YU1NR SV2BFN PAØXPQ IK1HSR DX—High Po HH2PK PW2A (PT2BW,op) SW1MM	60,490 42,210 35,186 30,780 30,544 27,608 24,108 23,436 22,989 20,448 wer 102,900 41,940	V31RY TA2II IK1TWC DXHigh Po KP2N GW5NF J68BU IK2BUF LX4B RK9CWA LZ1KBB	36,260 15,502 9,234 wer 101,238 45,444 41,550 33,282 14,880 14,308 7,830					
YW5RY VP5JM YV5NFL EA7GXD GØARF V31JU YU1NR SV2BFN PAØXPQ IK1HSR <b>DX—High Po</b> HH2PK PW2A (PT2BW,op) 5W1MM (JR6FIP,op)	60,490 42,210 35,186 30,780 27,608 24,108 23,436 22,989 20,448 wer 102,900 41,940 29,394	V31RY TA2II IK1TWC DXHigh Po KP2N GW5NF J68BU IK2BUF LX4B RK9CWA LZ1KBB	36,260 15,502 9,234 wer 101,238 45,444 41,550 33,282 14,880 14,308 7,830					
YW5RY VP5JM VV5NFL EA7GXD GØARF V31JU YU1NR SV2BFN PAØXPQ IK1HSR DX—High Po H42PK PW2A (PT2BW,op) 5W1MM (JR6FIP,op) PA3ERC	60,490 42,210 35,186 30,780 27,608 24,108 22,408 22,436 22,989 20,448 wer 102,900 41,940 29,394 26,676	V31RY TA2II IK1TWC DXHigh Po KP2N GW5NF J68BU IK2BUF LX4B RK9CWA LZ1KBB	36,260 15,502 9,234 wer 101,238 45,444 41,550 33,282 14,880 14,308 7,830					
YW5RY VP5JM VV5NFL EA7GXD GØARF V31JU YU1NR SV2BFN PAØXPQ IK1HSR <b>DX—High Po</b> HH2PK PW2A (PT2BW,op) PM3ERC OH2GI	60,490 42,210 35,186 30,780 30,544 27,608 24,108 23,436 22,989 20,448 wer 102,989 20,448 wer 102,900 41,940 29,394 26,208	V31RY TA2II IK1TWC DXHigh Po KP2N GW5NF J68BU IK2BUF LX4B RK9CWA LZ1KBB	36,260 15,502 9,234 wer 101,238 45,444 41,550 33,282 14,880 14,308 7,830					
YW5RY VP5JM VV5NFL EA7GXD GØARF V31JU YU1NR SV2BFN PAØXPQ IK1HSR <b>DX—High Po</b> H12PK PW2A (PT2BW,op) 5W1MM (JR6FIP.op) PA35ERC OH2GI SP4CHY	60,490 42,210 35,186 30,780 27,608 24,108 23,436 22,989 20,448 wer 102,900 41,940 29,394 26,676 26,208 24,163	V31RY TA2II IK1TWC DXHigh Po KP2N GW5NF J68BU IK2BUF LX4B RK9CWA LZ1KBB	36,260 15,502 9,234 wer 101,238 45,444 41,550 33,282 14,880 14,308 7,830					
YW5RY VP5JM VV5NFL EA7GXD GØARF V31JU YU1NR SV2BFN PAØXPQ IK1HSR <b>DX—High Po</b> HH2PK PW2A (PT2BW,op) PM3ERC OH2GI	60,490 42,210 35,186 30,780 30,544 27,608 24,108 23,436 22,989 20,448 wer 102,989 20,448 wer 102,900 41,940 29,394 26,208	V31RY TA2II IK1TWC DXHigh Po KP2N GW5NF J68BU IK2BUF LX4B RK9CWA LZ1KBB	36,260 15,502 9,234 wer 101,238 45,444 41,550 33,282 14,880 14,308 7,830					
YW5RY VP5JM VV5NFL EA7GXD GØARF V31JU YU1NR SV2BFN PAØXPQ IK1HSR DX—High Po HH2PK PW2A (PT2BW,op) 5W1MM (JR6FIP,op) PA3ERC OH2GI SP4CHY S53MJ OH2LU	60,490 42,210 35,186 30,780 30,544 27,608 24,108 23,436 22,989 20,448 wer 102,900 41,940 29,394 26,676 26,208 24,163 21,087	V31RY TA2II IK1TWC DXHigh Po KP2N GW5NF J68BU IK2BUF LX4B RK9CWA LZ1KBB	36,260 15,502 9,234 wer 101,238 45,444 41,550 33,282 14,880 14,308 7,830					

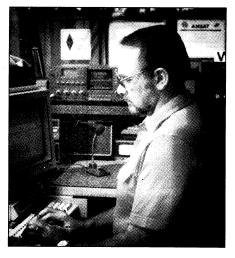
invite some of the people in your area into your shack for a little demonstration? RTTY operating also makes a great topic for a club meeting.

Another factor adding to this contest's growing reputation are the manners exhibited. The orderly pileups, lack of QRM and overall friendliness shown to one another on the air made this a pleasurable experience for everyone. More than one comment came into the Contest Branch remarking on the courtesy and decorum you all showed to one another. Perhaps we can make contesting the sport of gentlemen once again.

## If You Got On This Year, You Know What We Mean!

The RTTY paper chasers among us had another banner year. We received logs from more than half the number of countries you'd need for DXCC. By how many countries did your total go up? If you're still trying to nail down that Worked All States (WAS), well, every state in the Union was on sometime during the contest: here's hoping you found the ones you were looking for.

There are those of us, though, who seem less absorbed by chasing those awards as they are by the struggle against their fellow



William, WA4MCZ, cries, "Thank goodness I solved my RFI problems on 80 and 40, or I would have been in deep yogurt!

#### **Region Leaders**

Boxes list call sign, score, class (S = Single Operator, M = Multioperator) and power (A = Low Power, B = High Power).

Northeast Regio (New England, I Atlantic Division and Quebec Sec	Hudson Ins; Mari		Southeast (Delta, Roa Southeaste	noke and	ons)		Central Re (Central ar Divisions;	nd Great La			Midwest R (Dakota, N Mountain : Divisions; Saskatche	lidwest, Ro and West ( Manitoba	≩ulḟ and		West Coas (Northwest Southwest Alberta, Br Northwest Sections)	ern and ern Divisio itish Colur	nbia	
N1JAC 34, N1OAZ 30, W1BYH 27,	,000 S ,843 S ,462 S	5 A 5 A 5 A 5 A 5 A	AA5AU KA4RRU KK4DK KJ5QN N4IQ	93,955 65,424 52,668 48,126 47,724	ទទទទ	A A A A A	N9CKC KA9LAQ N9BHH WB8YJF N9GEU	38,700 26,128 21,516 20,160 17,841	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	A A A A	KØBX KG5EG NØIOS AIØY K5ED	47,940 42,120 31,820 31,815 31,119	s s s	A A A A	N6HC KE7GH AA7UN WA6VZI WA6SDM	42,276 38,927 35,091 32,864 32,305	5 5 5 5 5 5 5	A A
NN2G 64, NO2T 57, N2DL 48,	,582 S ,096 S ,410 S	6 B 6 B 6 B 6 B 6 B	K4HSF KB4GID N4ONI KL7TF/4 WA4MCZ	79,776 62,582 61,938 59,310 52,584	ទទទទ	B B B B B B	AB8K VE3XO WE9V AA9JY W9IL	72,400 70,752 57,049 46,916 43,658	S S S S S S S	B B B B B	N5RZ AA5ZQ NA4M NØIT VE5SF	83,607 64,512 49,950 21,184 18,104	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	B B B B B B	N9ITX/7 WB7AVD KN6DV VE7SAY WA7FAB	84,320 81,048 63,960 50,244 38,924	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	B B B B B B
WS1E 51, N1JEB 35, WW1Y 18,	,243 N ,003 N ,176 N	1 A 1 A 1 A 1 A 1 A					KB9ATR VE3UR	23,048 16,147		A A	KFØLZ WAØVGR KS5V KBØJSU KOØZ	45,276 36,573 32,092 18,560 9,776	M M M	A A A A A A				
WB2EAR 24, N3KVF 8,	,332 M ,820 M ,004 M ,500 M	/В /В	W4AQL W5GAD KQ4QM KI5TI	94,545 55,860 47,730 39,975	M M M	B B B B	N9NCX VE3FJB K4KJQ W8UMD	66,381 38,654 37,800 20,922	M M M	B B B B	AB5KD WXØB	147,616 85,338		B. B	AA6KX WD6L	62,244 11,570	M	

ham, Murphy, and the elements (both weather and antenna). Contesters live to contest, and we all want to win! If on-theair competition is your bag, check out this year's finishes. The records fell by the handful this year. Not only did participants set three new overall scoring records out of the four categories (congratulations, Don, AA5AU; Ron, AB5KD [with the help of Jay, WS7I]; and Pat, HH2PK), but 21 division records were broken, as well. A quick scan through the Top 10 or Regional boxes shows some real cliffhangers. We've said it before and we'll say it again-just a couple of QSOs or a multiplier can make a difference.

So what's your excuse? Blow the dust off your RTTY box and get ready. The next RTTY Roundup will be here before you know it. We'll look for you then!

#### Feedback

See August 1994 *QST*, pages 96-99. N9NCX was a multioperator, high-power effort with KB9FXB. They won the Illinois Section and finished in fourth place, W/VE, in the 1994 ARRL RTTY Roundup.

#### **SOAPBOX**

Thanks to the storms here in California, we had to operate on generator power for nearly the entire contest. We remained on the air, despite high winds and rain. We were lucky all the wire antennas remained up during the blustery weather and we enjoyed operating under adverse conditions (KI6CK). This was my fourth year in the RTTY Roundup and I loved it. Many may think the sunspot cycle is near the bottom, but it doesn't mean there isn't any activity on this mode of operation. I had another great time (NN2G). The father of Murphy visited, as a lightning strike had wiped out about everything in my shack. We were lucky everything seemed to work well and nothing blew up. Our total QSO count was down from previous attempts and some others we checked with had the same problem (KI5TI). This was my first attempt at RTTY and after I made the first contact, it inspired me to put in an honest effort. I had a great deal of fun (VA3GL). It was fun working from my new QTH and I was surprised to hear all the new call signs operating in the contest (N1JEB). Conditions were relatively poor during my operating time. I

114 QST-

found that although conditions were slack, I was able to do well (AA5AU). The was my second year operating the contest, and the learning curve is getting easier. Maybe 10 meters will be a little better next year and I'll be able to make some contacts there (V31JU). I had the greatest time this year in the contest. It was the best year I've ever had, and I'm looking forward to the next contest with eager anticipation (KA4RRU). This was my first attempt at the RTTY Roundup and I found the operators were sensible and mature in their attitudes. It was a lot of fun and I plan to be back next year (WD6L). The contest was a lot of fun, although the conditions were a little bit lacking. I only had one minor problem, but that was within my own household. I created a little TVI during the prime-time TV shows (DL7VOG). I worked a lot of Europeans, but the propagation to the US was limited. We were only able to make contact with

two US stations. We hope next year we'll be able to do better (RK9CWA). This contest is better than Field Day! I was surprised to work a ZL on 40 meters (ÅB5VC). I didn't have much interest in RTTY until I tried my hand in the Roundup. I found that once I got started, it was an exciting contest. I also noticed how everyone who operated was really courteous, more so than in some other contests. What a treat that was! (N3BDA). This was my first RTTY contest and I found it very enjoyable (IK7XCW). We had anticipated that we wouldn't do as well as last year. We certainly found that to be wrong! The RTTY Roundup is still the best of them all (AB5KD). This was my first try at RTTY. It was great fun and exciting (NY3C). This year I moved my operations indoors. The conditions were fantastic and I was on for about 11 hours. I worked 49 of the 50 states (KFØLZ). The contest is starting to expand, making it a lot more fun to participate

## Intimidated by RTTY?

We suspect there are a lot of hams who just never fully explore the capabilities of their digital-mode equipment. Oh, sure, they may get on packet, and maybe fool around with some of the other features, but many never make the final step toward actually getting on the air and making contacts. If this sounds like you, check out the story of Ray, VE3RGL, and his experiences in this year's RTTY Roundup:

"This is my first RTTY contest and the third time I've operated on this mode. I spotted the rules in *QST* and decided I'd give it a try. My station consists of an ICOM IC-735, an AEA PK-232MBX and a 286 computer running the latest version of *LAN-Link* software. My antennas consist of an inverted **V** for 80 and a quad loop for 40, 20 and 15 meters, on a 64-foot tower.

"In preparation for the contest, I repaired the 80-meter inverted V, and predetermined and marked the antenna tuner settings for quick band changes. I studied the software manual to determine the most effective way to use it. I decided to stick to Baudot this time, to avoid confusion. Maybe next year I'll try the other modes.

"I spent the first hour observing how the participants exchanged their information, and got a general feel for the pace of the contest. I joined in during the second hour and made many mistakes—but I eventually got rolling in about 30 minutes or so. Once I caught on to the timing of exchanging information, getting through pileups and real-time use of my software, everything seemed to go along pretty smoothly.

"I spent most of my time hunting for calls, but I did give calling CQ a try. The response was incredible and I quickly learned my typing speed limits! I now see the strategic differences and uses of hunting and CQing, and how they should be used together. Next year I'll be better prepared.

"I can't believe how much fun I had. This contest is an absolute must for next year."

(WM2U). The contest was, as usual, a great deal of fun (KB4GID). The contest this year was excellent and I made more QSOs than in the past (AAØPB). This was my first experience with RTTY and with my new software. I was surprised to tune up and get on the air without any major problems. It was a ball. I'm already making plans for next year and improv-ing my skills (N5XUS). This contest was more fun

that ever. I hope next year I'll have some software to make my operating a bit easier (KAØOAM). My major problem this year wasn't with the contest, but with a football game I was watching. Next year, I'll change priorities and put in a full honest effort (KE8PW). I found operating conduct up to the usual high standards. This is one contest I enjoy because it starts the New Year off right. It also gives

me a change to contact old friends and make new contacts. The newcomers learn rapidly, and the mode makes for a fun and friendly weekend (GØARF). This contest has great rules, but it was a pity about the propagation. The highlight of the contest was being called by 3DAØCA. I heard hundreds of other sta-tions, but it doesn't look like many stations had their antennas pointed my way (VIØANT).

August 1995

115

## Scores

Scores are listed by DXCC countries and ARRL\RAC sections. Line scores list call sign, score, QSOs, multipliers, hours and power (A = Low Power, B = High Power). Division and continental leaders are listed in **boldface**; new division records are indicated with an asterisk.

B = High Power). Division an	d continental leaders are listed i	n <b>bolatace</b> ; new division records		
Antarctica	Belgium	South America	WB2ZQP 14,322 217 66 20 A N2PEB 12,566 206 61 16 A	5
VIØANT (VK4EET,op) 1,008 48 21 24 B	ON6CR 364 26 14 24 A	Chile	WF2L 7,912 172 46 17 A	Arkansas
	Denmark	CE8SFG 8,700 150 58 24 B	WA2EYA 6,500 130 50 24 A WN2R 4,905 109 45 23 A	KJ5QN 48,126 617 78 24 A
Asia	OZ5MJ 6,264 116 54 24 A	Argentina	KB2ETO 2,475 75 33 14 A	WB5IGF 37,113 417 89 24 A
Oman A45ZX 7,038 138 51 24 B	Netherlands	LU8FDZ 1,960 56 35 24 A	KF2TF 70 10 7 24 A	WA5RHG 6,435 143 45 17 A
	PAØXPQ 22,989 291 79 24 A PA3EVY 8,757 139 63 24 A	Brazil	KA2DWV 3,528 84 42 13 B	K5JH ′ 5,891 137 43 14 A
Japan	PA3ERC 26,676 342 78 24 B	PW2A (PT2BW,op) 41,940 466 90 15 B	3	KA5QOF 5,304 104 51 20 A
JA3DLE/1 4,756 116 41 13 A JE2UFF 1,988 71 28 10 A	Slovenia		Delaware	Louisiana
JH7QXJ 1,768 68 26 22 A JA1SJV 580 29 20 24 A	S53MJ 21,087 297 71 24 B	Venezuela YW5RY 60,490 526 115 23 A	WA3ZKZ 17,820 270 66 18 A	*AA5AU 93,955 989 95 24 A K5CZD 3,150 70 45 20 A
JARSJV 580 29 20 24 A JA8CJY 110 11 10 24 A	S57W 11,918 202 59 24 B	YV5NFL 35,186 482 73 18 A	NY3C 3,910 85 46 8 A	KA5CQJ 45,214 611 74 17 B
JHØESK 42 7 6 24 A	Sweden	w	Eastern Pennsylvania	W5GAD (WU3V,K5EF,KC5ARK, N5s NBC,OGW,UXT,VVB,YIC,
Turkey	SM4RGD 7,310 170 43 24 A SM7BHM 4,588 124 37 24 A	1	*NM3E 53,044 596 89 24 A	W5s KSI,RMX,WX5L,WB9VTN,ops)
TA2II (+TA2s CMM,IJ) 15,502 337 46 24 A	SM5AAY 2,940 84 35 24 A		KC3ST 13,000 200 65 24 A WA3YON 8,349 121 69 24 A	55,860 735 76 24 B KI5TI (+KI5XP)
	Poland	Connecticut N8WXQ 8,758 151 58 24 A	N3HSH 3,914 103 38 24 A	39,975 533 75 24 B
Asiatic Russia RK9CWA (RA9DK,RW9CF,UA9CGA,	SP3BGD 6,579 129 51 24 A	AA1CB 5,198 113 46 24 A	N3BDA 2,457 63 39 6 A KE3OA 2,242 59 38 11 A	Mississippi
ops) 14,308 292 49 24 B	SP7LZD 1,792 64 28 24 A SP2UUU 570 30 19 24 A	KA1IXG 4,176 116 36 24 A KA1CZF 3,060 90 34 9 A	N3FOG 1,364 44 31 4 A	W5VZF 44,226 567 78 24 A
Kazakhstan	SP2EIW 99 11 9 24 A	AA1JM 2,211 67 33 8 A	K3WW 23,247 287 81 17 B	N5KKG 11,664 216 54 24 A KB5IXI 9,805 185 53 24 A
UN5PR 6,532 142 46 16 B	SP4CHY 24,163 331 73 24 B SP3EJJ 9,558 162 59 24 B	W1TSJ 1,920 60 32 7 A WR1B 156 13 12 3 A	W3FV 12,915 205 63 24 B N3KVF (+WD3U)	KA5LGP 3,696 84 44 24 A
Europe	SP5GRM 3,081 79 39 24 B	Eastern Massachusetts	8,004 138 58 24 B	New Mexico
Fed. Rep. of Germany	Greece	N1LDZ 24,120 360 67 22 A	Maryland-DC	AB5VC 6,348 138 46 24 A AA5ZQ 64,512 768 84 24 B
DL9GGA 6,160 140 44 22 A	SV2BFN 23,436 378 62 24 A	KB1KM 5,220 116 45 14 A WA1IML 5,184 108 48 24 A	N3UN 24,600 328 75 24 A	*KFØLZ (+KC5IEL,NØOSW)
DL7VOG 5,520 115 48 24 A	European Russia	WU1F 4,600 100 46 8 A	AA3EV 13,920 240 58 24 A N3II 11,375 175 65 24 A	45,276 686 66 24 A
DL4ABJ 4,515 105 43 24 A DF5BX 1,798 62 29 24 A	UA4ANZ 651 31 21 20 A RU3AT 2,040 85 24 24 B	KD1KJ 2,257 61 37 12 A NO1J 960 40 24 3 A	WA3FYZ 3,666 94 39 24 A	North Texas
DJ3IW 12,090 186 65 16 B DJ6JC 10,370 170 61 24 B		KD1GG 27,027 351 77 24 B	Ŵ3GG 8,400 168 50 24 B	KB5F 16,008 276 58 21 A KI5MS 13,851 243 57 17 A
DJ5CK 8,614 146 59 14 B	<b>Ukraine</b> UR5LBX 1,690 65 26 24 A	W1AX 2,553 69 37 24 B WO1L (+op) 7,293 143 51 12 A	Western Pennsylvania	WXØB (+N5OAO)
Spain	UT1WZ 1,564 46 34 24 A	Maine	WW3S 3,515 95 37 24 A K3UA 1,025 41 25 2 A	85,338 862 99 24 B
EA7GXD 30,780 228 135 24 A	UTØI (UT2IZ,op) 19,691 203 97 24 B	Maine N1RCT 17,236 278 62 24 A	WA3INX 36 6 6 1 A W3FSB 1 1 1 1 A	Oklahoma N6EU 14,931 237 63 15 A
EA2IA 10,788 186 58 24 A EC2BAW 567 27 21 24 A	Latvia	W1VXV 8,540 140 61 24 A	KA3JFI 30,420 390 78 24 B	N6EU 14,931 237 63 15 A W5TZN 2,576 92 28 4 A
EA4BNQ 340 20 17 24 A	YL3FW 5,472 114 48 24 A	New Hampshire	4	AB5TF 2,176 68 32 24 A KN5W 1,736 56 31 24 A
EA3BT 7,739 109 71 24 B EA7ADH 1,593 59 27 24 B	YL2KF 2,100 70 30 19 A	N1OAZ 30,843 447 69 24 A N1MEO 13,380 223 60 24 A	Alabama	South Texas
France	Yugoslavia	N1OEZ 3.080 88 35 17 A	KE4BM 24,710 353 70 21 A	AA5VN 13,716 254 54 24 A
F5TCN 110 10 11 24 A	YU1NR 24,108 246 98 24 A YU1BO 2,457 91 27 24 A	*WS1E (+NET) 51,243 551 93 24 A	W4DEC 21,420 315 68 24 A AB4QL 1,431 53 27 5 A	N5XUS 11,058 194 57 18 A
England		WW1Y (+op)	WA4CQG 25,410 363 70 24 B	WA5IZE 5,292 108 49 21 A KK5CA 4,305 105 41 10 A
GØARF 30,544 368 83 21 A	North America	18,176 284 64 24 A N1KLP (+op)	Georgia	KG5IT 3,198 78 41 24 A W5QZ 2,923 79 37 5 A
G4XDD 5,353 101 53 24 A GØLII 2,695 77 35 24 A	Barbados 8P6SG 15,840 288 55 24 A	5,500 110 50 24 B	KD4W 42,000 525 80 22 A	NA4M 49,950 666 75 19 B
Scotland	8P6SA 2,916 81 36 15 A	Rhode Island	N4XQN 3,634 79 46 24 A KR4JX 2,109 57 37 15 A	WB5VZL 1,980 55 36 24 B *KS5V (+N5XTJ)
GMØ/WN1G 7,800 120 65 24 A	Haiti	*K1IU (+WF1B) 112,332 1012 111 24 B	KB4GID 62,582 754 83 24 B	32.092 452 71 24 A
Wales	HH2PK 102,900 1029 100 24 B	Vermont	KL7TF/4 59,310 659 90 24 B	*AB5KD (+WS7I) 147,616 1318 112 24 B
GW4KHQ 12,312 228 54 24 A	Dominican Republic	KL7DN/1 14,238 226 63 24 A	K4ZTL 2,183 59 37 6 B <b>*W4AQL (KC4QYR,KS4IS,N7FYT</b> ,	West Texas
GW5NF (+GW4BJQ,G4VXE) 45,444 541 84 24 B	HI8ROX 224 16 14 5 A	N1FKR 5,490 122 45 10 A	N9HZQ,ops)	*K5ED 31,119 451 69 18 A
Switzerland	Panama		94,545 955 99 24 B	WF5E 16,472 232 71 23 A K5GJ 7,360 160 46 23 A
HB9DCO 3,080 70 44 24 B	HP3/KG6UH 1,550 50 31 24 A	Western Massachusetts N1JAC 34,000 425 80 19 A	Kentucky W4TOY 15.996 258 62 17 B	N5RZ 83,607 961 87 23 B
italy	St Lucia	W1BYH 27,462 398 69 13 A	*K4KJQ (NM3U,KC4JNR,KD4s CSW,	6
IK1HSR 20,448 284 72 24 A	J68BU (KS9W,N9JCX,W9KDX, WA9AKT,ops)	WA6ILT/1 11,055 201 55 20 A W1HFN 9,490 146 65 19 A	DBN,KE4OOH,WA8FJK,ops) 37,800 504 75 24 B	East Bay
I2HWI 8,250 150 55 24 A IK2QCF 4,953 127 39 24 A	41,550 554 75 24 B	N1JEB (+AA1AA,N1JIT)	North Carolina	W6/GØAZT 18,900 270 70 16 A
IT9JLW 2,640 80 33 24 A	Alaska		K4JYS 32,204 388 83 15 A	Los Angeles
IK2HKT 4,324 94 46 24 B	KL7WP 294 21 14 8 A AL7BB 6,132 146 42 24 B	2	WA4ZXA 26,645 365 73 23 A	KN6DV 63,960 820 78 24 B
IK1VGG 2,368 74 32 24 B IK2REA 646 38 17 24 B		Eastern New York	KS4S 8,592 179 48 24 A KO4AK 5,978 122 49 11 A	KF6HI 18,285 -265 69 19 B
IK1TWC (+IK1TZO)	Virgin Islands KP2N (+NP2E)	WM2U 19,565 301 65 24 A N2KAD 12,760 220 58 24 A	KR4HJ 3,800 95 40 24 A KN4GC 10,455 205 51 23 B	Orange
9,234 171 54 24 A IK2BUF (+IK2s ACH,MPV,SGF)	101,238 1077 94 23 B	AA2GS 11,210 190 59 18 A	*KQ4QM (+KF4KL)	N6HC 42,276 542 78 19 A WD6L (+NET)
33,282 387 86 24 B	Puerto Rico	N2LBZ 7,748 149 52 24 A	47,730 555 86 24 B	11,570 178 65 24 B
Norway	KP4QK 2,665 65 41 8 A	NM9J 1,716 52 33 6 A KB2EEU 714 34 21 4 A	Northern Florida	Santa Clara Valley
LA3YU 3,696 112 33 15 A LAØBX 1,560 60 26 7 A	Belize	N2DL 48,410 515 94 24 B	WJ1Y/4 2,765 79 35 22 A KX5U 2,470 65 38 24 A	WA6SDM 32,305 455 71 23 A KI6CK 12,978 206 63 24 A
LA7AJ 8,232 168 49 24 B	V31JU 27,608 476 58 24 A V31RY (AAØKL,AEØB,WNØB,ops)	NA2M 27,450 366 75 24 B *WA2UKP (+WA2JQK)	*K4HSF 79,776 831 96 24 B	AA6TY 7,560 140 54 22 A
Luxembourg	36,260 518 70 24 A	54,438 633 86 24 A WB2EAR (+NET)	South Carolina	KO6CL 2,698 71 38 17 A N6ZFT 1,914 58 33 13 A
LX4B (LX1s KQ,TI,VF,ops) 14,880 160 93 24 B	Anguilla	24,820 365 68 24 B	N4IQ 47,724 582 82 24 A WA4BHK 11,115 195 57 16 A	N2ALE/6 840 40 21 24 A
	VP29EI (I5JHW,op) 16,632 308 54 24 A	NYC-Long Island	KC4UH 29,078 434 67 17 B	*AA6KX (+KE6MOH) 62,244 798 78 24 B
<b>Lithuania</b> LY1BZB (LY1FF,LY2BKF,LY3NFW,	VP2E/NM7N 1,980 66 30 24 A	WY2E 22,308 338 66 24 A	Southern Florida	San Diego
ops) 6,864 156 44 24 B	Turks & Caicos Islands	KW2P 20,235 285 71 24 A KC2KY 17,546 283 62 22 A	* <b>KK4DK 52,668 627 84 24 A</b> KR4U 10,920 210 52 15 A	KD9E 16,764 254 66 24 A
Bulgaria	VP5JM 42,210 630 67 24 A	N2LEB 5,989 113 53 24 A	K8OSF 2,812 76 37 9 A	W6CN 6,292 121 52 18 A AC6HI 2,244 68 33 9 A
LZ1MC 1,566 58 27 24 A	Oceania	NN2G 64,582 659 98 24 B	W3DHN 2,574 66 39 15 A W1UDB/4 984 41 24 24 A	W6IWO 13,104 208 63 24 B
LZ1KBB (LZ3FN,LZ4AX,LZ5VK,ops) 7,830 174 45 24 B	Western Samoa	Northern New Jersey KD2YG 12,950 185 70 24 A		San Francisco
Finland	5W1MM (JR6FIP,op)	KF2QS 9,300 186 50 23 A	<b>Tennessee</b> Ka4HMV 2,541 77 33 10 A	W6JOX 11,742 206 57 22 A W6OTC 15,407 217 71 24 B
OH2GI 26,208 336 78 19 B	29,394 414 71 21 B	AA2RZ 6,500 125 52 24 A WG3I 5,076 108 47 24 A	WB4TDB 425 25 17 24 A	
OH2LU 20,440 280 73 15 B	Hawaii	N2ELW 4,472 104 43 24 A	WA4MCZ 52,584 626 84 23 B K4IBP 44,634 519 86 24 B	Sacramento Valley N6GG 1,352 52 26 24 B
	AH6JF 4,305 123 35 24 B	WA2VYA 570 30 19 3 A	N4TG 27,738 402 69 24 B	,
OK2KDS (OK2VWB,op) 154 14 11 24 A	Australia	N2MZH 36 6 6 1 A NO2T 57,096 549 104 24 B	Virginia	7 Arizona
Slovak Republic	VK6GOM 7,515 167 45 21 B	N2VYU 7,880 197 40 7 B	*KA4RRU 65,424 752 87 24 A N6MW 8,996 173 52 15 A	<b>Arizona</b> KE7GH 38,927 581 67 24 A
OM3CPS 1,710 57 30 24 A	New Zealand ZL2AMI 11,592 184 63 24 A	Western New York	WD4KXB 7,228 139 52 24 A KR4CZ 6,580 140 47 15 A	WA6VZI 32.864 416 79 24 A
		KE2UV 24,012 348 69 24 A KF2OG 15,753 267 59 23 A	N3MA 759 33 23 3 A	N7UJJ 17,690 290 61 24 A KC7MJ 10,773 189 57 12 A

WB8SVK	7,252	148	49	15		W8HCS	9,000	180	50	24 A
W4VZR	1,218	42	29	5	A	Ohio				
Eastern '	Washin	gton				WB8YJF	20,160	315	64	24 A
N7RWH	8,250	165	50	24		W8IDM	10,920	210	52	11 A
W1TR	6,298	134	47	24		KABOUT	10,080	180	56	17 A 6 A
WB7AVD	81,048	921	88		В	W8PBX KE8PW	9,828 6,700	182 134	54 50	бА 14 А
K7DSR KB7HJM	5,934 1,152	138 48	43 24	24 24		W8EXI	5,715	127	45	24 A
KD/HJM	1,152	40	24	24	•	KF8TM	4,116	98	42	11 A
Idaho						KD8FJ	3,977	97	41	16 A
AA7UN	35.091	557	63	24	A	AG8Y	3,198	82	39	24 A
W7QDM	11,760	210	56	24	Α	AF8A	2,541 288	77 48	33	24 A
Montana						KF8BW AB8K	72.400	48 724	6 100	24 A 24 B
						WSUMD	72,400	/24	100	24 0
WA7DEO AA7BG	5,060 4.551	115 111	44 41	17 24		(KB8KNC,N	I8KPJ.W	B8EN	R.N9	AG.
N9ITX/7	4,551 84.320	992	85	24		KAØJTW,	ops)			
	04,520	332	00		0		20,922	317	66	24 B
Nevada						West Vir	ainia			
W4JLS	726	33	22	4	Α	WB8WRY	26.910		65	23 A
0						K3JT	13,468		52	23 A 24 B
Oregon					-	11001	10,400	200	52	24 0
WA7FAB	38,924	526	74	15	в	9				
Utah						-				
KB7OKD	858	39	22	8	A	Illinois				
				•		N9BHH	21,516	326	66 50	24 A 24 A
Western			1			WA9AXL W9FFQ	6,750 5.450	135 109	50	24 A 12 A
W7LD	24,034		61	24		KDØAV	5,368	122	44	24 A
KB7OLZ	4,173	107	39	24		KA9MNX	2,376	66	36	24 A
W7LZP	35,003	493	71	24	в	AA9JY	46,916	634	74	24 B
Wyomin	a					W9IL	43,658	526	83	24 B
N7GVV	6.116	139	44	12	A	*N9NCX (+				
man	0,110	100					66,381	763	87	24 B
8						Indiana				
Mishing	_					N9GEU	17.841	313	57	24 A
Michigar			• •				,041	210	5,	
N8FEH	17,141	281	61	21	A					

.

KC9UU KE9CU WB9CEP K9VQK KB9ATR (• WB9CHW			58 45 59 31 (D, 67	20 24 24 24 24 24 <b>24</b>	A B B
Wiscons	in				
*N9CKC KA9LAQ KB9DMV KB9S WE9V	38,700 26,128 12,078 1,792 57,049	516 368 198 56 641	75 71 61 32 89	24 24 21 24 24	A A A
Ø					
Colorado KG5EG AAØPB NØIBT KØZL	<b>42,120</b> 5,264 2,250 1,560	<b>540</b> 112 75 52	<b>78</b> 47 30 30	14 12 13 24	A A
<b>lowa</b> KØOAM WKØF AAØN KB5HVN WWØE	23,826 19,314 10,450 4,848 4,756	361 333 190 101 116	66 58 55 48 41	24 24 24 14 8	A A A
<b>Kansas</b> WK5M NØFMR K6WZ	29,988 10,400 16,640	476 208 260	63 50 64	24 24 22	A
Minneso	ta				
NØIOS AIØY NØAEV	<b>31,820</b> 31,815 7,920	<b>430</b> 505 176	<b>74</b> 63 45	<b>23</b> 21 23	A A A

WAØBNX WBØIQT KEØLX WEØQ WØML W2JGR/Ø *WAØVGR	`36,573		52 50 42 40 <b>43</b> 37 <b>73</b>	4 24 24	A A B B	On VE: VE: VE: VE: <b>VE</b> :
Missouri *KØBX KIØW NØIT KØJPL KOØZ (+NF	47,940 14,160 21,184 8,855		<b>85</b> 59 <b>64</b> 55		B	VE AB TI
North Da KE6WU/Ø	9,776		47 41	13 14		VE VE Sa
Nebraska WBØFNZ KBØJSU (4	20,827	,ŻŻT)		24 <b>24</b>		VE All VE VE
South Da KØCVF NØIQX	4,182 3,996		41 37	20 15		
VE Prince E VY2SS	dward   66,703		<b>d</b> 91	24	в	Br VE VE VE
Quebec VE2BOB VE2AXO VE2OWL VE2CUA	11,232 11,000 1,173 3,078	51	52 55 23 38	8	A	No VE Ct AA W7

tario						
3RGL 3GL	16,560 5,865 4,242		60 51	22 17	Α	
<b>3VAC</b>			42	16		
SHOL	2,108			14		
3EVV 3XO	966 70,752	42 737	23 96			
	/E3s ELI	.IPT		24	•	
	16,147		67	24	A	
	/A3CW,\	/E3s				
G,IJM,MI	KX,NDA,					
IR,VSM,	YBH,VE7			~ *	-	
	38,654	502	77	24	в	
nitoba	I					
4JC	10,846	187	58	23		
4GN	1,943	67	29	8	Α	
skatch	ewan					
5SF	18,104	292	62	24	в	
berta						
6KRR	26,784	432	62	24		
6ZX	21,450	330		24		
6EZ	8,533		53			
6JAV 6JY	8,415 6.912		55 54	13 24		
6LB	3.690	90	54 41	24		
	olumbi					
7OR	20,352		64	24		
7SAY 7QO	50,244 22,425		79 65	24 24		
/40	22,425	345	05	24	D	
rthwes	st Terri	torie	8			
BNC	945	45	21	24	в	
ecklog	IS					
	A, KD8F	W, LA	3RIA	١,		
LHÓ, ZS	SGYA.			57	-	
					_	