# Results, Tenth IARU HF World Championship 

By Billy Lunt, KR1R

Contest Manager
and
Warren C. Stankiewicz, NF1J
Assistant Contest Manager

24 hours of contest propagation just like the "good old days"!

Wow! This year's IARU contest was not what any of us expected. It was incredible! July never brings great conditions, and around this point of the sunspot cycle, they're usually even worse. Not this year! We had-great, wonderful, incredible, unbelievable (take your pick of adjectives here)-propagation. Who would have expected to run Europeans on 15 meters in July? Or to make as many contacts as they did on 10 meters? Heck, we didn't have conditions like these in the DX Contest back last winter! We may not even know what happened, but to tell the truth, who cares! The bands were great, and we made the most of it! It wound up being a hot contest for a hot weekend!

Participation was up nearly $10 \%$ this year, and that sure helped. Either a lot of folks stumbled onto the contest by accident, or operating events like these are attracting more and more people. We heard from a lot of "first-timers" this year. Is it the shorter time period that makes the difference? Does summer bring a different crop of contesters? Comments were favorable (with a lot less complaints!) about the operators and the operating.

Twenty meters being open during the entire contest was a major attraction, but the big propagation story has to be the 15 and 10 -meter bands. Were they open where you are? More importantly, did you remember to check them, or did you just write them off as unusable? Most of the top European folks were able to rack up anywhere from 200 to 400 QSOs on 10 meters, and totals of 600 to 1000 QSOs on 15 meters were not uncommon.

Admittedly, it wasn't as good here in the US and Canada-but you should have been able to make at least 50 QSOs or so on 10 , if you were lucky; and some foiks had QSO totals on 15 meters in excess of 300 . If you were running with the pack on 20 and 40 and didn't think to check 10 or 15 , you should know better by now! It's experiences like these that differentiate between the top contesters and the rest of us. Who would have known you'd be able to work folks on those bands? They sure knew!

Another thing that sure helped boost scores were all those IARU HQ stations on the air this year. You should have been able to log a handful-after all, 27 of them were active, and 22 submitted logs. The

Hungarian crew at MRASZ kept their longstanding win streak intact, easily topping anyone (and anything) the other societies could throw at them. The "We Try Harder" competition for number 2 took a twist this year, though. Perennial runners-up DAØHQ found themselves slipping to fifth, with the Slovaks at OM5HQ, the Ukrainian operation at EM5HQ, and the Romanian ARF's YRøA all putting forth excellent efforts. ARRL's Headquarters station, W1AW, also did extremely well this year, making the most QSOs but finishing eighth, with 6.8 million
points. For a blow-by-blow description, check out the sidebar, "The Way to Win at W1AW." Our thanks to our IARU sister-societies everywhere for helping to make this contest successful. It sure pays now to do a little multiplier hunting for the HQ folks.

Speaking of winning streaks, we saw another long-standing one broken in the Mixed Mode category: Rad, YU1RL, went to EA9IE and stopped Gyozo, HAøMM, in his tracks! Just when you thought you could win with 2 million points, he comes in and makes almost 3 million! Henry, YT1AD, wasn't too


John, WB2K, may not have a lot of awards mounted on the wall, but he sure nailed down the top spot in the W/VE phone-only competition.

## Top World Scores

| xed |  | cw only |  |
| :---: | :---: | :---: | :---: |
| Call | Scor | Call | core |
| EAgIE | 2,911,184 | HAODU | 1,877,533 |
| (YU1RL,op) |  | Rzgu |  |
| HA®M | 1,977,150 | (R29 |  |
| YT1AD | 1,970,724 | S59AA | 1,374,206 |
| UTSUG | 1,765,752 | C47\% |  |
| TM1C | 1,669,920 | (5B4WN, |  |
| (G®JFX, op | at F6CTT) | YT50BB |  |
| UA3RAR | 1,598,625 | (21) |  |
| KF3P | 1,500,736 | N21C/O | 1,203,734 |
| S53R | 1,305,103 | P40Z | 1,198,392 |
| LY6M | 1,272,154 | OH1NOR | 1,120,560 |
| (LYY1DS,op) |  | SLOCB | 1,098,165 |
| OH6WZ | 1,239,24 | (SMO |  |


| Phone Only |  | Multioperator |  |
| :---: | :---: | :---: | :---: |
| Call | Score |  |  |
| UT5DK | 1,462,344 |  |  |
| OH1EH | 1,416,524 | UU5J | 2,702,612 |
| OHELNI | 1,104,752 | RS3A | +1,965,816 |
| 5NøMVE | 846,264 | IR4T | 1,937,796 |
| EM0F | 834,677 | RY6Y | 1,790,712 |
| XøFF,op) |  | RK9XWH | 1,481,385 |
| DL8PC | 826,619 | RU3A | 1,466,630 |
| LY1DT | 759,744 | RW®A | 1,407,352 |
| $5 \mathrm{~N} ø \mathrm{GC}$ | 755,760 | wXox | 1,379,856 |
| S59L | 742,350 |  | 1,359 |
| 2k | 729,90 | RU9D | ,272,556 |

Top W/VE Scores

| Call | Score |
| :--- | ---: |
| KF3P | $1,500,736$ |
| KFØH | 932,252 |
| AA4NC | 919,512 |
| KØIJL | 676,021 |
| (AAØBY, op) |  |
| KZ1M | 577,729 |
| WZ4F | 558,688 |
| WX9E | 518,122 |
| (at KS9B) |  |
| N9AG | 513,472 |
| K3WW | 507,756 |
| N5EA | 411,152 |
| Phone Only |  |


| Phone Only | Multioperator |  |  |
| :--- | ---: | :--- | ---: |
| Call | Score | Call | Score |
| WB2K | 729,904 | WXOX | $1,379,856$ |
| WS1A | 602,030 | KN2T | $1,148,904$ |
| W3BGN | 526,560 | N3BB | $1,059,122$ |
| K4VUD | 489,375 | W5WMU | $1,010,316$ |
| WA7FOE | 486,552 | K9SD | 798,187 |
| VE6JY | 473,434 | NCOP | 669,123 |
| N4UH | 380,256 | KA4RRU | 605,665 |
| KB4WQO | 370,364 | WT2Q | 602,426 |
| WB2NQT | 365,960 | WOAIH | 580,152 |
| K6SVL | 296,055 | N3KZ | 520,884 |

## IARU Headquarters Stations

HG95HQ (HA1s FF, WD, YA, HA2RX,HA4YD,HA5s AWH, BGG,BSW,BWW,CQA,FM,GF,IW,KS,LN,MK,ML,NG, OM,TI,UA,WE, YLN,ZD,HG5s CCC,CNC,HA6s DX,FQ, GK,IAB,ND,NF,NL,NQ,NY, OB,OI,OQ,OY,PN,PX,BA,VH, WI,WP,WQ,WX,ZS,ZV,HG6IPQ,HA7S JES,PO,RY,VB, HA8s IB,IE,HA9AX,ops)

9,287,492 9348314
OM5HQ (OM3s JW,KAG,KAP,KCM,KFF,KII,KZY,RJB, RKA,RMM,ops) $\quad 8,095,005 \quad 8517 \quad 305$
EM5HQ (US1s IDX,ITU,UT2s IA,ID,II,IJ,IM,IO,IV, UR3IKY,UR5IFZ,UT5IZO, US8ISC, UTBS IA,IM, UX8IX,U'S-1-602,-603,-700,ops)

8,052,860 7904274
YRøA (YO2s ADQ,ARA,AVM,BBT,BEO,BP,CBF,DFA GL,YO3s APJ,BWK,CDN,FF,FRI,FU,FWC,ATW, HW,NF,SI,XF, YO4s ATW,HW,NF,SI,XF,YO5s CUQ, DMB,TE, YO6S AWR,FUE,YO7UP,YO8S AXP, BAM, BIG,CT,EQ,WW,ops) 7,918,772 7659284 DAøHQ (DL1s ASA,AUZ,AWI,DTL,EMY,DK2OY, DL2s EBY,HTO,MEH,OBF,DL3s APO,DXX,OI,RMA, DL4s MM,RDJ,DL5s ANT,AOM,ATD,AXX,XU,DK6WL, DL6MYL,DF7RX,DJ7AA, DL7s UTA,VNF,VOA, DL8s HWA,MVG,DL9AWI,ops)
$7,258,828 \quad 9233292$
S50HQ (S50s A,R,S51s AY,IX,OI,ZO,S52ZO,S56A,
S57s AL, O,W,S58s A,AB,FA,S59A,ops)
$7,022,966 \quad 7789298$
SPOHQ (SP2s EBG,FWC,SP3s ASN,GEM,HLM,RBI, RBR,SP5s BYY,INQ,JTM,SP6s CZ,HEQ,HFZ,VGP, XRZ,SP7GIQ,SP8NR,SP9s EIJ,IUM,ops) 6,882,645 $7305 \quad 295$
W1AW (K1s CC,KI,TO,ZZ,W1s OD,RM,AA2Z,K5FUV, N6BV,ops) 6,839,532 9745252 LZ7A (LZ1s GL,LF,MC,PJ,ZD,LZ2s JE,UU,ZF,LZ3s FN, FM,GU,LZ4s AX,ZF,ops)
$3,440,310 \quad 4872 \quad 246$ ER7A (ER1s AP,DA,M,OO,ER3S AL,DX,ED,KS,OO,ZZ, ER5s AA,AL,DX,OK,WU,ops)

| $1,478,750$ | 2782 | 168 |
| :--- | :--- | :--- |

YUøHQ (YU7s AV,BJ,GO,GW,NF,NW, YZ7UN,
$\begin{aligned} & \text { 4N7DW,ops) }\end{aligned} \underset{1,214,748}{ } \quad 2396 \quad 153$
IY2ARI (I2MQP,IK2VJF,ops)
1,031,240 $2000 \quad 145$
SK3HQ (SM3s CER,DMP,RAB, ops) $821,548 \quad 1627$
LT4E (LU2BDG,LU4AHV,LU6BEG,LU8AQE,ops) 683,410 1139
GB5HQ (G1AOF,G3TRU,G4WSE,G0s DBE,IEQ,KXL,
PZO,STU,WAB,ops) 647,946 1495142
8J3XHQ (JA3s MAU,SVG,JF3EIG,JG3RPL,JH3HOA,
JI3s ERV, XOM,JJ3WPF,JP3s DZA,TEN, JQ3HDD,ops)
4V1ø0RC (HH2s B,JO,JR,ops) 239,946 $2758 \quad 87$

$\begin{array}{llll}\text { LXØRL (LX1s KQ,TI,ops) } & 204,972 \quad 706 \quad 87\end{array}$ LY1RMD (LY1DC,op) 189,288 73599 XJ7RAC (VE7SBQ,op) 129,356 $452 \quad 73$ | HB9A (HB9DDZ,op) | 74,998 | 372 | 77 |
| :--- | :--- | :--- | :--- |

far behind НАØММ in the race for second, either, falling just 7 k short. Whew! It's pretty obvious to us that one way to ensure a good score is to be in one of those locales with a direct shot to Europe.

These folks weren't the only ones to turn in great scores. Tyler, KF3P, came out of nowhere to win the US mixed mode, and John, WB2K, jumped up a couple of spots to win on phone. Steve, N2IC/ $\varnothing$, had the best of both worlds: not only were the bands (especially 20) open to Asia, but he was able to work Europeans, too! That was enough for first place W/VE on CW!

So, are you feeling lucky? Out for blood? Or just looking for a good excuse to get out of the hot July sun? Whichever way you feel, the next IARU HF World Championship is only a couple of months away-July 13-14. Why, it'll be here before you know it. In fact, the IARU records are now available in the new ARRL Contest Yearbook. What better way to motivate yourself to get on the air?

## SOAPBOX

I wasn't able to work the entire contest, but did enjoy picking here and there. I also found that the conditions from this area weren't too bad for this part of the sunspot cycle (KL7Y). This was our team's first effort from Alaska, but we'll be in there during the next contest (KL7/DF4ZY). The band conditions were not that great, but still enjoyable. There certainly was a dearth of Western European stations. Thank goodness there were a lot of Russian stations on the air to fill the gaps. This was a great contest, though (VE3CWE). This was my first IARU contest and I had so much fun that I will be back for the next one (VE9ZL). I was able to make about the same amount of contacts as last year. The bands did not seem as active as they were last year. It certainly seemed good to see all of the Headquarters stations on the air (N4TQO). I am 14 years old and I have been a ham for one year. These were the best band conditions I've ever operated in. I'm looking forward to participating in the contest next year (AC6NS).I only had a few hours to participate in the contest but hope to put an honest effort in next year (K70X). This was a limited operation for me due to a busy schedule, but I still had a lot of fun (N6TR). This is an excellent contest for those that have a modest station and I wish I had had more time to operate (N7ENU). The propagation was just good enough to let you know that the stations were out there, but not good enough to copy them well. The multipliers just were not there, and again this year there were very few Central and South American stations heard (N5EA). It certainly was a hot contest, as it was $93^{\circ}$ in the shack. My air conditioner bit the dust on Friday evening before the contest and I didn't
get back on line until late Saturday afternoon, but the contest was already 10 hours old by that point (N5NMX). This is a fantastic contest and the rules are terrific. The propagation conditions were excellent and I'll be back for the next contest (N3BB). The only thing that I have ever done is CW ragchewing. This was my first contest and I found it a great deal of fun-I'1l be back for next year's (KGØKR). The contest was superb and it seems that summertime conditions during the sunspot cycle minimum were excellent (K7SV). This is one of my favorite contests and I had a lot of fun (NZ5O). I worked with only 100 W , and, considering the sunspot cycle, I was very satisfied with the responses that I received-especially since this was only my second contest (KB8QO). This was a great time and a great contest, and 20 meters was still the workhorse, as usual. Any one who misses this contest is missing a summer classic (K8GL). I find that when the conditions are right this contest is more fun than any other. Conditions were more than right, they were superb on all bands for the entire period. Thanks to the Russians and Europeans for their usual good showing (N9AG). This was my first IARU contest and it positively will not be my last (N9XBM). This was my first attempt at this contest and it took a while to realize that the multipliers are more important than the contacts. I never thought I'd work that many stations from my own zone and in between the DX stations. There were good band openings and strong signals, but not like the big sunspot days. I look forward to a bigger score next year, somehow (KJ9C). This was a great contest, considering that the band conditions were not very good. There was lots of activity (AA9BJ). This was my first contest and I found it really exciting and fun to operate. I plan to enter it again next year (XE2CWW). It was a great pleasure--I enjoyed a very good time in this contest and appreciated being able to participate (XE2Z). The conditions this year were again excellent and the only problem that I had was with my 160 -meter dipole just before the contest (OH6NIO). I tuned up and down the bands looking for a VK or ZL on several bands but without any luck. There was a great opening on 20 meters to W6 in the morning here and this allowed me to better my scores over the past couple of years (OZ5EV). This was my first time operating in the contest because of my busy schedule and I enjoyed the time that I operated CW (OH6YF). This is one of the most pleasant contests of the year, and it was a pleasure to work all six bands (SM4BTF). This was an excellent contest and I enjoyed it very much. I look forward to next year's (UÁ1PAC). My time was limited, but I was able to make a few contacts and make a few people happy with the points from my area. I will be back next year and hope to do better (PA3AEB). This is my very best contest effort of the year and I enjoyed it very mach (F5JBR). There seemed to be quite a bit of activity on the bands. I would like to have a stacked array, but you have to do the best with what you have. I enjoyed the contest except around 0500 Z , when the pain really set in (GØLII). This was my first contest alone and I enjoyed it very much (PA3EXI). This has always been a very pleasant contest (ON5CZ). There was lots of activity, plenty of big signals and lots of fun in this contest (PA3DWJ). This year the contest was a real summer sizzler, it was $30^{\circ} \mathrm{C}$ outside and $40^{\circ} \mathrm{C}$ inside the


Mario, 5B4WN, operating C47W, should have been an easy Zone 39 multiplier!


Zone 39 multip
Need Vietnam? Nickolai, 3W5FM, handed out a few QSOs.
shack. The propagation was excellent on 20 meters and held in there all night long. I know that I will be back next year to try and break my previous record (DL3KDV). This was a great contest but I was handicapped by a visit by my mother-in-law (DL7ANQ). I really enjoy low-power contesting, and so did my neighbors (S57U). I really enjoyed the contest and especially working 15 meters (SO5TW). This was a most enjoyable contest and I was able to work my first Americans on 40 meters with only 15 W (SP2WDW). This was an excellent contest and I enjoyed it very much (SP9MDY). I am 15 years old and visually impaired. I enjoyed the CW part of the contest (SQ9BZK). This was a very exciting contest, but I found 10 and 15 lacking during most of the time (YO5BQ). This was my 18th IARU contest and it was just as exciting as the first one that I entered (YU7SF). Murphy hit twice during the contest, I had to repair the amplifier and lost nearly an hour in the process. Despite the problems, I had fun. There was a great opening to the West Coast on Sunday morning (LY6M). This was an exciting contest and the activity was better than last year (UT5UGR). This was a superb contest. We didn't sleep for 24 hours. There was great activity from the USA and Europe but we didn't hear anything from Japan (RS3A). This was my first contest after serving my required time in the Army. I enjoyed being a civilian, but I especially enjoyed the contest (UA4AVN). There was strong QRN on Saturday night and it left me with a low score on 40 meters. The only ones that I could work were the big guns, but I was compensated by an excellent opening on 10 meters (EA3EJI). The propagation was not too good to this part of the world, but I still enjoyed the contest and I know I will be back ( 7 K 2 DOD ). I found the conditions on 40 and 20 meters to be excellent. It was great to work many fine USA stations. I tried using the computer to key the rig, but it was very hard to get used to (JHØGHZ). I only had a few hours to enjoy the contest from the field, but it was fun under these conditions (JI3KDH/3). I used only a 6 -foot-long, 10-foot-high whip antenna. Even though my station was a weak one, there were many stations that heard me and it made for an exciting contest for me (JL7PVR/1). The propagation was just barely good on 20 meters, which I enjoyed even though I only operated during the last half hour of the contest. It was the signals from W1AW that piqued my interest to join the contest (JF1SQC).

## Feedback-1994 IARU HF World Championship

See February 1995 QST, pp 100-104.
WB2K's score was 820,068 . This made him the Eastern Pennsylvania CW leader, as well as fourth place W/VE and seventh place overall. WX9E was left out of the results for Illinois. His line score was 35,640-204-60-A.

## The Way To Win At W1AW

Well, not exactly. This year's ARRL effort was a bit different than those of the past-rather than trying to deal with the limited resources (and limited space) at W1AW, this year the show went on the road-to the superstation of Tom, K1KI. Tom says, "Our basic goal was to put more QSOs into the W1AW log than in previous years, and we sure met our goals! Conditions were much better than we expected-it's hard to believe we made nearly 10,000 QSOs in 24 hours."

So they may not have won, but they sure had one whale of a time! Without any further ado, here's a band-by-band (and blow-by-blow) description of what it was like, through Tom's eyes:
"We didn't spend enough time on 160. We timeshared this band with 80 CW , and the rates were better on 80 . We heard several European HQ stations we couldn't work because of QRM. Our last European QSO was at $0415 Z$ with TM1C (shortly after their sunrise).
"We worked our first European on 80 at 2330Z, and our last at 0445Z. It was pretty noisy all night. We worked KL7Y at 0830Z. We were able to keep USA runs going all day long-it was sort of like Sweepstakes!
"On 40, the band was open to Europe from 2115 to 0604Z. We worked a couple of JAs, but conditions were not so good-we stole the SSB amplifier for 80 CW Saturday evening. 5W1AU QSYed from 20 to 15 to 40 for us, but he had no key and the SSB QSO through the broadcast QRM was difficult, especially for a dedicated CW operator!
"We didn't work our first European on 20 meters until QSO number 48, but they were there for almost 24 hours. The USA runs were longer and louder, however. The JA run Sunday morning was just like the good old days! After working an HL, we asked if there was a DU on frequency, and DU1SSG called in.
"On 15 meters, the Europeans were weak most of the day, but they kept calling. We must have worked enough W4 QSOs for the Worked All W4 Award. After 0600 Z ( 2 AM, local time!) the VKs faded, and the Europeans came back in through the end of the contest. We worked a few JAs and got ready for a big JA run that ended with just six JA QSOs.
"I'm certain that we qualified for the Worked Almost All Newcomers Award on 10 meters. There seemed to be an endless list of KE4xxx QSOs, but it was actually only 50 (plus two KF4xxx stations). Midnight brought a pipeline into W9 and we sent people from 20 and 15 to 10 . We even found KH6, FO, and VK! The rate dropped below 20 at 0645Z, so we got some sleep and started up at 1000 Z with some more European stations.
"Our rate for the entire contest was 409; our best hour (1447Z to 1547Z) had 707 QSOs, and our best minute was $1538 Z$, when we made 19. We didn't get much help from packet, but it all adds up. We also found out that there are limits as to how many amplifiers (six at 1400 W ) can run off my two $220-\mathrm{V}$ circuits. We popped the breakers three times.
"Out of the 9821 QSOs (including duplicates), we worked 6689 unique call signs. Nothing beats working people who say that they've been a ham for 40 , 45,50 or more years and never worked W1AW before. It was really fun! We can do better next time!"


Here's the number one Multioperator team at UU5J: (l-r, sitting) UU5JR, UU5JQ, UB7-067-2; (l-r, standing) UU3JD, UU2JZ, and UU4JDF


If S50HQ was one of your multipliers, you surely must have worked one of these ops: (I-r, first row) S58A, S51ZP, S55T, S52ZW, S51IX, S56A; (I-r, second row) S59A, S57W, S510I; (l-r, third row) S51DB, S50A, S52EZ, S58AB; (l-r, back row) S51RS, S57O, S50R, S51AY, S58FA.
cores
Scores are listed by ITU zone and then by country, ARRL section or Canadian province within the zone. Line scores indicate call sign, final score, QSOs, multipliers and entry class ( $A=$ single operator, mixed mode, $B=$ single operator, phone only; $C=$ single operator, $C W$ only; $D=$ multioperator, single transmitter).

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Zone 1 \& \& \& \& \& AAFFL \& 17,748 \& 105 \& \& \& N10PZ (+NET) \& \& 58 \& \& \& Geor \& \& \& \& \& Grenada \& \& \& \& <br>
\hline ask \& \& \& \& \& \& 295 \& \& \& \& Eastern Mass \& sachuse \& \& \& \& KN4C \& 80,278 \& 363 \& \& \& 7 LK \& 1,708 \& 122 \& B \& <br>
\hline KL7Y \& 216,039 \& 601 \& 101 \& A \& Utah \& \& \& \& \& KB2R (at K1KP) \& 405,288 \& \& 117 \& A \& KDQ ${ }_{\text {KGC }}$ \& 240,142
26884 \& 718 \& 119
52 \& B \& Puerto Rico \& \& \& \& <br>
\hline KL7FAP \& 2,223 \& 39 \& 19 \& A \& WA6HXE \& 21,935 \& 137 \& 41 \& B \& N1HOQ \& 191,805 \& 597 \& 95 \& B \& \& \& \& \& \& WP4LNY \& \& 14 \& \& B <br>
\hline WL7CMK \& 39,292 \& 279 \& 38 \& B \& W7HS \& 29.760 \& 172 \& 40 \& C \& K1VUT \& 538,607 \& 1145 \& 127 \& c \& K ${ }_{\text {K4BAI }}$ \& 394,680
170,841 \& 1008
649 \& 130
93 \& $$
\begin{aligned}
& \mathrm{C} \\
& \mathrm{C}
\end{aligned}
$$ \& KP4Y \& 63,744 \& 359 \& 48 C \& B <br>
\hline KL7IDF4ZY ( \& 7DU, DL \& VM) \& \& \& K6xO \& KITWX,We \& (6MHS) \& \& \& K1JKS \& 293,265 \& \& 115 \& C \& $$
\begin{aligned}
& \text { K4BAI } \\
& \text { AC4PQ }
\end{aligned}
$$ \& 17,804 \& 34 \& 24 \& $$
\stackrel{\mathrm{C}}{\mathrm{C}}
$$ \& \& \& \& \& <br>
\hline \& 151,689 \& 657 \& 59 \& D \& \& 316,110 \& 1171 \& 82 \& D \& W1M \& 121.52 \& 401 \& 76 \& C \& \& \& \& \& \& $$
\begin{aligned}
& \text { ruba } \\
& 4 ø z
\end{aligned}
$$ \& 1,198,392 \& \& 138 C \& c <br>
\hline Zone 2 \& \& \& \& \& Western Was \& shington \& \& \& \& UJV) \& $$
\begin{aligned}
& \text { AK,KE1CN } \\
& .137,544
\end{aligned}
$$ \& $$
\begin{aligned}
& \text { N } 15 \\
& 535
\end{aligned}
$$ \& 88 \& D \& $$
\begin{aligned}
& \text { Kentuc } \\
& \text { KB4W }
\end{aligned}
$$ \& 370,364 \& \& 106 \& \& Costa \& 1,198,392 \& 1786 \& 138 \& c <br>
\hline Alber \& \& \& \& \& WA7FO \& 486,552 \& 1310 \& 114 \& B \& W1FM (+N1SOH) \& \& \& 47 \& D \& K14DC \& 145,704 \& ${ }^{556}$ \& 78 \& \& TI7DBS \& 27,132 \& 19 \& 53 B \& <br>
\hline VE6 \& 69,168 \& 320 \& 66 \& A \& 込 \& ,322 \& 267 \& ${ }^{67}$ \& B \& Maine \& 21,949 \& 147 \& 47 \& D \& $$
\begin{aligned}
& \text { K2YJL } \\
& \text { N4XM }
\end{aligned}
$$ \& 1,400
225,680 \& ${ }_{692}^{93}$ \& r ${ }^{8}$ \& ${ }_{\text {B }}^{\text {B }}$ \& TI4/AA7J \& 25,000 \& 150 \& 50 C \& c <br>
\hline \& \& \& 139 \& B \& N6HP \& 208,000 \& 580 \& 100 \& C \& aine \& \& \& \& \& \& \& \& \& \& \& \& \& \& <br>
\hline \& 213,213 \& 627 \& 91 \& C \& \& \& 783 \& 65 \& C \& GTR \& 156,312 \& 459 \& 104 \& \& \& \& \& \& \& \& \& \& \& <br>
\hline British Col \& mbia \& \& \& \& K170T \& $$
\begin{array}{r}
102,432 \\
59,649
\end{array}
$$ \& 428 \& 66
59 \& C \& New Hampshi \& \& \& \& \& AAANC \& 919,512 \& ${ }_{821}^{1638}$ \& ${ }_{136}^{162}$ \& A \& \& 437,992 \& 1188 \& 106 \& B <br>
\hline VETQO \& 109,986 \& 554 \& 69 \& A \& \& \& \& \& \& KA1FM \& 25,200 \& 180
1309 \& 50 \& A \& KC4YM \& 77,074 \& 340 \& \& B \& Cayman Islan \& nds \& \& \& <br>
\hline XJTCFD \& 113,152
96,748 \& ${ }^{551}$ \& 76 \& B \& Zone 7 \& \& \& \& \& ${ }_{\text {AG11 }}$ WS1A \& 602,030
71,680 \& 1309
322 \& 130
56 \& ${ }_{\text {B }}^{\text {B }}$ \& K4PQL \& 724,196 \& 1310 \& 151 \& C \& ZF2AH \& 15,408 \& 204 \& 24 A \& A <br>
\hline VE7TLK \& 55,500 \& 303 \& 60 \& B \& W5 \& \& \& \& \& WC1M \& 123,840 \& 522 \& 86 \& C \& W 4 4BBJ \& 38,628 \& 252 \& 58 \& c \& \& \& \& \& <br>
\hline 770 \& 35,896 \& 171 \& 56 \& B \& Arkansas \& \& \& \& \& AA1HJ \& 109,446 \& 408 \& 87 \& C \& Northern Flor \& rida \& \& \& \& Zone 12 \& \& \& \& <br>
\hline Zone 3 \& \& \& \& \& 5BR \& 68 \& 240 \& 57 \& A \& ${ }_{\text {AE1D }}$ KB1AXF \& 11,962 \& 128 \& 39 \& C \& AD4RE \& 50,962 \& 204 \& 83 \& A \& Chile \& \& \& \& <br>
\hline nitoba \& \& \& \& \& K5GOE \& ${ }_{8,358}$ \& ${ }^{2} 1$ \& 42 \& B \& N1SNB \& 3,825 \& 76 \& 15 \& c \& K4VUD \& 489,375 \& 125 \& 145 \& B \& CE8EIO \& 30,858 \& 188 \& 37

27 \& B <br>
\hline E4YU \& 29,640 \& 168 \& 52 \& A \& N5XYN \& 26,145 \& 199 \& 45 \& c \& Rhode Island \& \& \& \& \& South Carolin \& \& \& \& \& Ecu \& \& \& \& <br>
\hline \& \& \& \& \& Louisiana \& \& \& \& \& K1PLX \& 165,680 \& 553 \& 109 \& B \& W4JKC \& 116,100 \& 440 \& 90 \& C \& G \& 53,368 \& 598 \& B \& <br>
\hline Zone 4 \& \& \& \& \& NZ50 \& 195,700 \& 587 \& \& B \& WA1MKS \& 13,579 \& 105 \& 37 \& B \& Southern Flor \& rida \& \& \& \& \& 9,557 \& 119 \& 19 B \& B <br>
\hline Quebec \& \& \& \& \& Oz \& $\begin{array}{r}168,960 \\ \hline 3,920\end{array}$ \& 624
118 \& 88
80 \& B \& N9LYE \& \& \& \& B \& N4BP \& ${ }_{207,128}$ \& 800 \& 68 \& C \& C1/KE4EWI \& ¢ \& 56 \& 26 B \& <br>
\hline VE2AWR \& 60,705 \& 411 \& 45 \& A \& \& 3,920 \& 118
55 \& \& \& Vermont \& \& \& \& \& \& \& \& \& \& \& \& \& \& <br>
\hline VE2FFE

$$
\text { NØTT/VE2 }+\mathrm{W}
$$ \& \[

x^{6} 612

\] \& 36 \& 6 \& c \& W5WMU (+WU3 W5MEG N8RR \&  \& \& \& \& N1PBT \& \[

$$
\begin{array}{r}
116.616 \\
49,560
\end{array}
$$

\] \& \[

$$
\begin{aligned}
& 610 \\
& 266
\end{aligned}
$$

\] \& \[

$$
\begin{aligned}
& 86 \\
& 59
\end{aligned}
$$
\] \& ${ }_{\text {B }}^{\text {B }}$ \& Tennessee WA6KUI/4 \& 219,333 \& 733 \& 113 \& A \& Colombia HK3JJH \& 158,356 \& 536 \& 61 \& <br>

\hline \& 177,912 \& 716 \& 76 \& D \& \& 1,010,316 \& 646 \& 177 \& D \& Western Mass \& sachuse \& etts \& \& \& AA4NU (KøEJ, \& 21,700 \& 172 \& \& B \& Peru \& \& \& \& B <br>
\hline Ontario \& \& \& \& \& \& \& \& \& \& \& 577,729 \& \& 137 \& A \& \& 578,816 \& , \& \& \& OA4EI \& 124,872 \& 327 \& 88 B \& в <br>

\hline VE3CWE VA3WTO \& $$
\begin{array}{r}
50,337 \\
223,223
\end{array}
$$ \& \[

$$
\begin{aligned}
& 223 \\
& 719
\end{aligned}
$$
\] \& ${ }_{91}^{63}$ \& A \& WA5OYU \& 121,129 \& 415 \& 89 \& B \& AA1EY WE1B \& 111,398

49,236 \& $$
\begin{aligned}
& 330 \\
& 260
\end{aligned}
$$ \& 109

66 \& c \& NAAK
K4LTA \& 242,865
188694 \& 631 \& 105 \& c \& Venezuela \& \& \& \& <br>

\hline VE3STT \& 2,520 \& 48 \& 18 \& B \& N5QDE \& 59,292 \& 206 \& \& B \& WT2Q (+KB1W, ${ }^{\text {K }}$ \& KY1H,NU1 \& 1P,wm \& 11к) \& \& KO4EW \& 117,231 \& 511 \& 79 \& $$
\mathrm{C}
$$ \& YV1DRK \& 1,812 \& \& \& <br>

\hline \& \& 6 \& \& B \& North Texas \& \& \& \& \& \& 602,426 \& 1246 \& 139 \& D \& \& \& \& \& \& \& 3,718 \& 37 \& 26 B \& B <br>

\hline VE3KP \& 283,318 \& 791 \& 98 \& C \& WB5B \& 249,193 \& 707 \& 97 \& A \& W2 \& \& \& \& \& | Virginia |
| :--- |
| WA4JUK | \& \& \& \& \& B \& 6,405 \& \& \& <br>


\hline \& \& 85 \& 38 \& C \& \& 171,27 \& 57 \& 84 \& A \& \& \& \& \& \& | WA4JUK |
| :--- |
| N4OT | \& \& \& \& A \& Zone 13 \& \& \& \& <br>

\hline \& MV, WHE) \& \& \& D \& A5 \& 20 \& 623 \& 105 \& B \& Eastern New \& York \& \& \& \& WB2NQ \& 366,960 \& \& \& \& Zone 13 \& \& \& \& <br>
\hline XJ3AT (+NET) \& 304,759 \& 903 \& 91 \& D \& WD \& 11,900 \& 108 \& 35 \& B \& KB2HUN \& 47,824 \& 300 \& 61 \& B \& N4MM \& 119,780 \& 342 \& 106 \& B \& il \& \& \& \& <br>
\hline VA3NR (+NET) \& 28,985 \& 175 \& 55 \& D \& W5RNF \& 9,380 \& 104 \& 35 \& B \& N2BZP \& 270 \& 37 \& 10 \& C \& KO4IQ \& 2,556 \& 142 \& 18 \& B \& PY7OJ \& 4,040 \& 87 \& 40 \& c <br>
\hline Zone 6 \& \& \& \& \& WXøB (N \& \& \& \& \& NYC-Long \& land \& \& \& \& K73V \& 633,879
1263 \& 109 \& ${ }_{96}^{153}$ \& C \& PP7CW \& 0,820 \& \& \& <br>
\hline \& \& \& \& \& N6ZZ \& 530,140 \& 129 \& 130 \& C \& ${ }_{\text {K2LE }}$ \& 250,155 \& 589 \& 109 \& A \& W3GOI \& 61,299 \& 350 \& 49 \& \& Zone 14 \& \& \& \& <br>
\hline \& \& \& \& \& \& \& \& 42 \& c \& KA2HMJ \& 148, ${ }^{19}$ \& \& 65 \& $\stackrel{\text { B }}{\text { c }}$ \& W4XD \& 46,308 \& 263 \& 68 \& C \& \& \& \& \& <br>

\hline East Bay \& \& \& \& \& \& \& 84 \& 42 \& \& N2LSK (+KA2GW \& | 148,070 |
| :--- |
| WM,KF2ER | \& \& \& C \& KA4RRU \& X, KJ44VG) \& \& \& \& CE5BPE \& 1,170 \& 17 \& 15 B \& в <br>

\hline KG6LF \& 53,380
5,500 \& 470

68 \& 34 \& B \& Oklahoma \& \& \& \& \&  \& $$
152,789
$$ \& \& 91 \& D \& \& 605,665 \& 1309 \& 145 \& D \& \& \& \& \& <br>

\hline K160Y \& \& \& \& \& NW5H \& \& $$
\begin{aligned}
& 433 \\
& 224
\end{aligned}
$$ \& \[

$$
\begin{aligned}
& 29 \\
& 42
\end{aligned}
$$
\] \& B \& Northern New \& Jersey \& \& \& \& W5 \& \& \& \& \& Argentina \& \& \& \& <br>

\hline Los Angeles \& \& \& \& \& \& 372,294 \& 884 \& 117 \& c \& N2MZH \& 160,632 \& 584 \& \& \& \& \& \& \& \& Lutate \& 9,510 \& 81 \& \& <br>

\hline KJ6HO \& $\underset{\substack{118,224 \\ 53 \\ 5314}}{ }$ \& 508 \& 72 \& A \& W5UDA \& 368,781 \& 837 \& 119 \& c \& W1GD \& 107,378 \& 305 \& 106 \& A \& | Mississip |
| :--- |
| KB5IXI | \& 5,775 \& 75 \& 21 \& A \& LSF (LUIFNH \& 640 \& 80 \& 10 A \& <br>

\hline KC6X \& 40,863 \& 179 \& 53 \& A \& South Texas \& \& \& \& \& W W 2 2K \& 9,006 \& 91 \& ${ }^{38}$ \& A \& \& \& \& \& \& L37N (LUZNI,Op) \& ) 254,944 \& 490 \& 124 \& <br>
\hline K6SVL \& 296,055 \& 1035 \& 81 \& B \& NSEA \& 411,152 \& 1009 \& 112 \& A \& K3FNW \& 123,552 \& 332 \& 158 \& ${ }_{8}^{\text {B }}$ \& W8 \& \& \& \& \& LUBA \& 158,598
147,050 \& 490 \& ${ }^{66}$ \& B <br>
\hline KM6YX \& 242,648 \& 792 \& 98 \& B \& NSNMX \& 216,040 \& 608 \& 110 \& A \& N2INN \& \& \& 50 \& B \& Michig \& \& \& \& \& LU2DW \& 130,392 \& 1571 \& 83 \& <br>
\hline NA2D \& 11,515 \& 105 \& 35 \& B \& WAIPRY \& 10,114 \& 111 \& ${ }^{26}$ \& A \& N2VYU \& 12,882 \& 115 \& 38 \& ${ }_{8}$ \& KG8PE \& 89,551 \& \& \& \& LЗ3HL \& 37,877 \& 187 \& 49 B \& <br>
\hline N613P \& 20,633 \& 112 \& 47 \& ${ }_{\text {c }}$ \& WASIYX \& 33,915 \& 191 \& 57 \& ${ }_{8}$ \& wV2X \& 1,944 \& 32 \& 18 \& c \& WB8E \& 45,016 \& 208 \& \& A \& LU5E (LU5EWO, \& ,op) \& \& \& <br>
\hline N6 \& 20,102
14,840 \& 157 \& 40 \& ${ }_{\text {c }}$ \& K5LTY \& 10,050 \& 132 \& 25 \& C \& Southern New \& w Jersey \& \& \& \& \& \& \& \& \& \& 31,703 \& \& 49 B \& <br>
\hline \& 14,846 \& 16 \& 4 \& c \& \& 6,072 \& 81 \& 22 \& c \& K2PS \& \& 718 \& \& \& N8LIQ \& 26,500 \& 137 \& 53 \& B \& LU2D \& 28,548 \& 116 \& 61 B \& <br>
\hline N6M1 (+K5TTE) \& 181,487 \& 597 \& 97 \& D \& KJ5CR \& 60 \& 4 \& \& C \& WB2DIN \& 68,634 \& 277 \& 82 \& A \& KB8Q \& 12,160 \& 107 \& \& B \& \& 22,231
1 \& 111 \& 47 \& <br>

\hline Orange \& \& \& \& \& (+AA5RB) \& \& \& \& \& W5K1 \& 5,216 \& T \& 32 \& A \& | K8GL |
| :--- |
| AABAV | \& \[

$$
\begin{aligned}
& 586,034 \\
& 383,940
\end{aligned}
$$
\] \& 1141 \& ${ }_{1}^{142}$ \& C \& LS7EE (LU7EE,0 \& 1,254 \& 278 \& 58 \& <br>

\hline E6UP \& 15,457 \& 117 \& 41 \& B \& WQ5Y (+NZ5V) \& 124,120 \& 327 \& 107 \& D \& WR2GTN \& \& 37 \& 136 \& ${ }_{\text {c }}^{\text {c }}$ \& Ohio \& \& \& \& \& \& 183,700 \& 412 \& \& <br>

\hline Santa Barbar \& \& \& \& \& 5HTX (+KC5A \& AMA) \& \& \& \& KN2T (+KD21,KN2 \& 2L,N2ORM \& \& \& \& N9AG \& 513,472 \& \& \& \& LW2DR \& $$
\begin{array}{r}
159,720 \\
560
\end{array}
$$ \& \[

$$
\begin{array}{r}
397 \\
22
\end{array}
$$
\] \& ${ }^{88} \mathrm{C}$ C \& ${ }_{C}^{C}$ <br>

\hline W6TKF \& 54,191 \& 327 \& 47 \& A \& \& 5,436 \& 70 \& 18 \& D \& \& , 148,904 \& 1834 \& 162 \& D \& AABOT \& 171,392 \& 520 \& 103 \& \& \& \& \& \& <br>
\hline WA6FGV \& 63,085 \& 381 \& 55 \& c \& West Texas \& \& \& \& \& Western New \& York \& \& \& \& W8UP \& 45,630 \& 268 \& \& \& Zone 15 \& \& \& \& <br>
\hline KN6WV \& 18,447 \& 133 \& 42 \& C \& AB5WB \& 19,980 \& 180 \& 37 \& A \& AE2T \& \& \& \& \& ${ }_{\text {K8NZ }}$ \& 28,656 \& 127 \& 160 \& ${ }^{\text {A }}$ \& \& \& \& \& <br>

\hline AD6J W6BKY \& $$
\begin{aligned}
& 9,960 \\
& 6,762
\end{aligned}
$$ \& $\stackrel{94}{121}$ \& ${ }_{23}^{30}$ \& c \& w9 \& \& \& \& \& AALGS \& 65,518 \& \[

223
\] \& 82 \& A \& N8LXS

N8BJQ \& 384,087
116,952 \& \& 103 \& ${ }_{C}^{C}$ \& PYIEDB \& 37,99 \& \& 41 C \& <br>
\hline Santa Clara V \& Valley \& \& \& \& \& \& \& \& \& AA2BA \& 34,626 \& 205 \& 58 \& ${ }_{\text {A }}$ \& KFBTM \& 85,041 \& 271 \& \& \& \& \& \& \& <br>

\hline N6IP \& 292,675 \& 707 \& \& \& \& \& \& 34 \& c \& AA2VZ \& 6,399 \& 75 \& 27 \& B \& NBAA \& 45,450 \& 320 \& 50 \& ${ }_{\text {c }}^{\text {C }}$ \& \[
$$
\begin{aligned}
& \text { PQOM } \\
& \text { ops) }
\end{aligned}
$$

\] \& \[

$$
\begin{array}{r}
\mathrm{J}, \mathrm{UA}, \mathrm{PL} \\
778,776
\end{array}
$$
\] \& \& \& <br>

\hline \& 100,659 \& 354 \& 87 \& A \& K9SD (KC9AL \& WW9L,KAOG \& \& \& \& NW2 ${ }^{\text {N2LOQ }}$ \& 4,914 \& 75 \& ${ }_{73} 7$ \& ${ }^{8}$ \& AABSM \& 18,396 \& 137 \& \& c \& \& \& \& \& <br>
\hline AC6NS
N4TOO \& 4,576 \& 72 \& 22 \& A \& KWøA,ops) \& 798,187 \& 1297 \& 169 \& D \& W2OMV \& \& \& ${ }_{89}$ \& \& NF8R (+KABO) \& 457,940 \& 082 \& 140 \& \& Zone 16 \& \& \& \& <br>
\hline QO ${ }^{\text {at }}$ \& \& \& \& \& \& \& \& \& \& N2PEB \& 45,724 \& 208 \& 71 \& C \& West Virginia \& \& \& \& \& Argentina \& \& \& \& <br>
\hline N6NM \& 57,200 \& 278 \& \& c \& \& \& \& \& \& WA2RZJ \& 42,240 \& 203 \& \& c \& K800L \& 89.544 \& \& \& \& LVIV (LUIS VV, \& VK,LU2 \& \& \& <br>
\hline N6NF \& 6,204 \& 101 \& 22 \& c \& Colorado N2IC/6 \& \& \& \& \& W3 \& \& \& \& \& WG88T \& 28,500 \& ${ }_{256}^{203}$ \& 57 \& D \& U5VC,Lu9VY, \& ,741,880 \& \& 15 \& <br>
\hline San Die \& \& \& \& \& \& 3,734 \& \& 173 \& c \& \& \& \& \& \& AA8RT (+KG\%kV \& \& \& \& \& \& \& \& 15 \& <br>
\hline KD60K \& 39,600 \& 266 \& \& B \& \& \& \& \& \& Delawar NY3C \& \& \& \& \& W9 \& \& \& \& \& Zone 17 \& \& \& \& <br>

\hline N6KI AAGEE \& $$
\begin{array}{r}
331,674 \\
7,964
\end{array}
$$ \& 881

100 \& 106
22 \& ${ }_{\text {c }}^{\text {c }}$ \& KFOH WØPPF \& 932,252 10 \& 1719 \& 148

29 \& ${ }_{\text {A }}$ \& NY3C \& $$
\begin{array}{r}
21,408 \\
436,506
\end{array}
$$ \& 196 \& ${ }_{114}^{48}$ \& C \& Illinois \& \& \& \& \& Iceland \& \& \& \& <br>

\hline KE6MWA (+KE6 \& MWB) \& \& \& \& кбоам \& 106,622 \& \& 89 \& C \& Eastern Penns \& sylvania \& \& \& \& WX9E (at KS9B) \& 518,122 \& 269 \& \& \& WJ20/tF \& 41,600 \& 1370 \& 00 \& A <br>
\hline \& 36,912 \& 257 \& 48 \& D \& Кк9\% \& 045 \& 407 \& \& C \& Kзww \& 507,756 \& 1056 \& \& \& NA1R \& 307,375 \& 779 \& 125 \& C \& Zone 18 \& \& \& \& <br>
\hline an Francise \& \& \& \& \& NC®P (tops) \& 669,123 \& 1541 \& 131 \& \& W3BGN \& 526,560 \& \& \& B \& K9MN \& 222,432 \& 720 \& \& C \& Zone 18 \& \& \& \& <br>
\hline \& \& \& \& \& Kansas \& \& \& \& \& N3MLV \& 185,136 \& 431 \& 114 \& B \& \& +10,680 \& \& \& c \& Norway \& \& \& \& <br>

\hline KA6sGt \& 469 \& 27 \& 7 \& c \& KøVGB \& 141,610 \& 425 \& \& \& N3BDA \& 1,480 \& 192 \& \& B \& AA9KH \& 10,588 \& 88 \& \& $$
\begin{aligned}
& \mathrm{C} \\
& \mathrm{c}
\end{aligned}
$$ \& LAABN \& 52,972 \& 33 \& \& B <br>

\hline San Joaquin \& Valley \& \& \& \& WBorju \& 17,358 \& 134 \& 33 \& \& AABB \& 459,655 \& 1409 \& \& \& Indiana \& \& \& \& \& LAAPAD \& 8,000 \& \& 32 \& <br>
\hline KC6CEX \& \& \& \& A \& AACYA \& 57,070 \& 290 \& \& \& KL7HIR \& 176,035 \& 553 \& 109 \& c \& \& 157,388 \& 550 \& \& \& LA4LJA \& 812 \& 29 \& 14 B \& B <br>
\hline WC6U \& \& 479 \& 68 \& c \& AAbra \& \& \& \& \& N3CZB \& \& 25 \& 2 \& c \& N9XBM \& 78,677 \& 502 \& \& \& LA5MT \& \& 403 \& 106 C \& <br>
\hline KBGHRB (AAGAH, \& H,KB6ONP \& ,kcGu \& ${ }^{\text {N, }}$ \& - \& Minnesota \& \& \& \& \& N3KZ (Wl2s E,N, \& ,ops) \& \& \& \& AASAQ \& 294,912 \& 839 \& 128 \& B \& LAEHFA \& 32.538 \& \& 66 C \& <br>
\hline KD6HMN,ops) \& 46,620 \& 240 \& 63 \& D \& $L$ (AAøBY, \& 6) ${ }_{6}$ \& \& \& \& \& 520,884 \& 1299 \& 126 \& D \& KB6C \& 102,980 \& 298 \& \& B \& A (+LA2 \& YYA,LAGZF \& \& \& <br>
\hline Sacramento V \& Valley \& \& \& \& \& 676,021 \& 1463 \& \& \& KB3TS (+KE3RR) \& \& \& \& \& KO9Y \& 259,160 \& 676 \& 110 \& c \& \& 82,315 \& 297 \& 101 \& D <br>
\hline N6JM \& 840 \& 20 \& 15 \& A \& KFET \& 118,800 \& 475 \& \& ${ }_{\text {c }}$ \& NN3Q (+NET) \& 66,000 \& \& \& D \& KJgC \& 54,924 \& 123 \& \& C \& Aland Islands \& \& \& \& <br>
\hline W7 \& \& \& \& \& WAgBNX \& 7,008 \& 65 \& 32 \& \& Maryland-DC \& \& \& \& \& , \& 43,835 \& \& \& C \& OH2VZIOHø \& 15,224 \& 112 \& 44 C \& c <br>
\hline \& \& \& \& \& Missouri \& \& \& \& \& KF3P ${ }_{\text {1,5 }}$ \& ,500,736 \& \& \& \& \& 167,580 \& 566 \& 105 \& D \& Finland \& \& \& \& <br>
\hline Arizona \& \& \& \& \& NSøB \& \& \& \& \& K31XD \& 77,436 \& \& \& \& Wisconsin \& \& \& \& \& OH6WZ \& 1,239,249 \& 1829 \& 187 \& <br>
\hline NTJXS \& , 1924 \& 271 \& \& A \& AACNB \& 25,695 \& 205 \& 45 \& A \& K3Z0 1,0 \& .006,934 \& 1667 \& \& c \& NGBSH \& \& \& \& \& OH6NIO \& 1,227,786 \& \& 161 \& <br>
\hline K17MN \& 23,192 \& 128 \& ${ }_{4}^{2}$ \& B \& WXOX (WX3N,K \& K4V, 4 AG9A \& ,ops) \& \& \& ААЗНM \& 141,592 \& 469 \& \& c \& AA9BJ \& 74,028 \& 404 \& \& c \& ${ }_{\text {OH3KCB }}^{\text {OH6SU }}$ \& 63,630
57,031 \& 331
179 \& 707 \& <br>
\hline k70x \& 5,415 \& 107 \& 15 \& c \& \& 1,379,856 \& \& 204 \& D \& W3CPB \& 47,302 \& 228 \& 67 \& C \& W9HE \& 55,728 \& 220 \& \& C \& OH1EH \& 1,416.524 \& \& \& <br>
\hline Eastern Wash \& hington \& \& \& \& North Dakota \& \& \& \& \& \& 235,635 \& 537 \& 115 \& D \& woalin (+K9ZVZ, \& Z,N9CIO \& ${ }_{\text {A®SE, }} 1396$ \& A1®Y, \& D \& OH6LNI \& 1,104,752 \& 1756 \& 176 \& <br>
\hline KW1K \& 60,900 \& 315 \& \& A \& WBøO \& 312,906 \& \& 21 \& c \& Western Penn \& nsylvani \& \& \& \& \& \& \& \& \& OH5PA \& 1,120,560 \& 80
706 \& $\begin{array}{r}15 \\ 174 \\ \hline\end{array}$ \& <br>
\hline N®DH \& 290,835 \& 761 \& 115 \& c \& Nebraska \& \& \& \& \& \& 38,979 \& \& \& \& Zone 9 \& \& \& \& \& OHBLAE \& 1,565,288 \& 17067 \& $1{ }^{174}$ c \& <br>
\hline Idaho \& \& \& \& \& GøKR \& 10,478 \& 114 \& 31 \& c \& W3YEY \& 74,760 \& \& \& \& New Brunswi \& \& \& \& \& OHGYF \& 548,100 \& 114 \& 135 \& <br>
\hline AATUN \& 115,640 \& 588 \& 70 \& B \& Zone 8 \& \& \& \& \& wBilw \& \& \& \& B \& VE9ZL \& 39,984 \& 311 \& \& B \& OH6AG (OH6KZ \& ZP,op) \& \& \& <br>
\hline Montana \& \& \& \& \& \& \& \& \& \& ${ }_{\text {K334, }}$ \& 22,905 \& ${ }_{126}^{275}$ \& \& \& VE9St \& 386,229 \& 045 \& \& c \& \& 238,140 \& 265 \& \& <br>
\hline N9ITX \& 43,780 \& 333 \& \& B \& Connecticut \& \& \& \& \& AA3GM \& 1,106 \& 41 \& \& c \& Zone 10 \& \& \& \& \& OH2 \& 31,304 \& \& 55 \& <br>
\hline k7ABV \& 40,843 \& 217 \& 32 \& B \& KE1BU \& 70,752 \& 324 \& \& \& N3QDL (+NET) \& 1,029 \& \& \& D \& \& \& \& \& \& OH3NM \& 3,408 \& 40 \& 24 \& <br>
\hline Nevada \& \& \& \& \& TM \& 72,996 \& 281 \& 84 \& B \& K3UA (+W3FSB) \& \& 20 \& \& D \& \& \& \& \& \& $\bigcirc \mathrm{OH} 3 \mathrm{KOH}$ \& 2,034 \& 32 \& 18 \& <br>
\hline AB7BS (+KC7BN \& \& \& \& \& W1NF (KB1GW, \& ,op) \& \& \& \& W4 \& \& \& \& \& XE2CWW \& 80,836 \& 274 \& 59 \& \& OH3NE ( OH (1K \& GG,OH3s \& QK.MM \& \& <br>
\hline \& 243,179 \& 737 \& 97 \& D \& \& 18,309 \& 106 \& 5 \& \& \& \& \& \& \& XE2Z \& 56,674 \& 370 \& \& B \& Dens \& 6 \& \& \& <br>
\hline Oregon \& \& \& \& \& KE1AU \& 3,886 \& 50 \& 29 \& B \& WZ4F \& 558,688 \& \& \& \& CCB \& 58,412 \& 514 \& \& c \& OZ5EV \& 228.375 \& \& \& <br>
\hline WTYAQ \& 349,338 \& 719 \& 134 \& A \& $\mathrm{K8CH}$ \& 3,171 \& \& 21 \& B \& KS4AW \& 2,831 \& 57 \& 19 \& B \& Zone 11 \& \& \& \& \& OZ5MJ \& 147,018 \& 400 \& \& <br>
\hline ${ }_{\text {Al7B }}^{\text {N6TR }}$ \& 618,288 \& 1200 \& 132 \& C \& N1OFO \& 1,070,388 \& \& \& ${ }_{\text {B }}$ \& KK4SM \& 119,295 \& \& \& \& \& \& \& \& \& \& 2,520 \& 43 \& 24 \& <br>
\hline ${ }_{\text {WILING }}^{\text {AI7B }}$ \& 174,720
51,116 \& ${ }_{238}^{570}$ \& \& C \& K2SXI1 \& 1,070,1,735 \& \& \& \& KS4YT (+KB4FAI) \& \& \& \& \& Panama \& \& 177 \& \& c \& OZIKWG \& 33,344 \& 181 \& 64 \& <br>
\hline AA7KF \& 22,044 \& 135 \& \& c \& W18IH \& 140026 \& \& \& \& \& \& \& \& \& HPIA \& 5,776 \& 177 \& \& C \& OZ5UR \& \& 12 \& \& <br>
\hline 114 Feb \& brua \& 1 \& 199 \& \& $45 \%$ \& \& \& \& \& \& \& \& \& \& \& \& \& \& \& \& \& \& \& <br>
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