Frazier vs. Ali, Mets vs. Yankees, Bruins vs. Canadiens, Trott vs. Martin — excuse me?

Yes, it's been shaping up that way for about the past ten years, at least as far as the ARRL November CW Sweepstakes are concerned. Matt Trott, K7BG and Randy Martin, KØEU have been battling in Single Operator, Low Power for at least as long as the online records database goes back, to 2001. And some of those have been epic battles between the two — in 2001, Randy beat Matt by only three QSOs.

While it hasn't always been Randy and Matt splitting No.1 and No.2, when it has it's been Randy coming out on top. Not this year. Matt's shaken his bridesmaid status with a convincing 32-QSO victory over his Colorado friend. "I've felt (that it would be my year) many times over the last eight or ten years," Matt said. "I knew I was working the bands pretty well, so I thought I had a good shot at it again this year and by gum I guess I got lucky finally."

Sweepstakes is a contest that's almost as old as ham radio itself and it remains one of the most-popular domestic contests. A lot of that has to do with The Sweep — it's one of a few major contests where you can — and lots of people regularly do — work all of the multipliers. Canada and the U.S. are split up into 80 sections as multipliers (83 beginning this year, more on that later) and many stations find the challenge of working all 80 to be their main motivation.

Some stations even set 80-in-80 — working nothing but new sections — as a particular challenge and if there was an award for 80-in-80, this year it goes only to John, N6MU whose 80-in-80 in Single-Operator, Low Power survived log checking. VE9AA came close, working 79-in-79. It's not easy for a few reasons: you have to make sure your log is golden (zero copying errors) because if you lose any QSOs to log checking, you miss your target. As well, you can really only do it by search-and-pounce (S&P), which is hard since some stations in some of the rarer sections also only work S&P. Indeed, it took John six hours to work his 80.

2011 CW Swe	epstake	s - Top Ten by Cate	gory		
CALL	SCORE	CALL	SCORE		
Single Operator, High Po	Single Operator, High Power		Single Operator Unlimited, Low Power		
N2IC	235,520	KK7S 168,480			
N9RV	232,000	VA2WA (VA2WDQ, op) 167,84			
VY2ZM (K1ZM, op)	229,760	KE7X	167,360		
NØNI (AG9A, op)	227,040	K2NNY (K2DB, op)	165,760		
KH7X (KH6ND, op)	219,360	K8BL	158,080		
N5RZ	218,720	N9CO	156,000		
N2NT (N2NC, op)	216,000	N4PN	154,720		
WDØT	215,360	K3AU (K2YWE, op)	154,080		
K6LA	212,000	ACØDS	143,040		
W7RN (N6TV, op)	210,720	N2MM	140,000		
Single Operator, Low Po		Multioperator, High Power			
K7BG	192,960	W6YI	225,600		
KØEU	187,680	W2FU	208,800		
NAØN	183,680	KP2M	205,920		
N9CK	178,066	VE6EX	190,720		
N8OO	175,040	W5RU	189,440		
N7VM	174,560	WØDLE	183,680		
KØLUZ	171,520	KØBJ	182,880		
NO3M	169,920	W4RM	169,280		
W7WA	169,760	W6TK	163,200		
KØAD	168,640	N6WIN	160,320		
Single Operator, QRP		Multioperator, Low Power			
W7RM (N6TR, op)	145,518	NP4DX	181,760		
K4RO	124,030	N6KI	128,320		
WØMHS	119,520	K3LID	100,800		
NØUR	115,340	KØUK	79,772		
NN7SS (K6UFO, op)	114,080	WR4I	69,888		
KØPC	113,568	VE4DR	60,532		
KØAV	112,320	WA6KYR	52,128		
W1XX	109,512	WDØGTY	35,568		
N7IR	109,336	N2AW	16,048		
K9ZO	108,546	KK5OV	12,480		
Single Operator Unlimited, High Power		School Club			
N6RO	210,560	W6YX	213,600		
K6LL	210,080	KØHC (WØBH, op)	179,040		
K3MM	209,120	W4UAL	55,616		
W4MR (AA4NC, op)	204,160	W3ABT (K3BHX, op)	53,592		
N4ZZ	200,480	N5XU (AA5BT, op)	36,656		
NY3A	196,800				
K7NV	193,600				
KB7Q	185,120				
K6SRZ	184,640				
N4BP	182,720				

So it's a contest with something for everyone. Part of its continuing appeal is the carefully considered rule changes that come in from time to time. The latest big change — introduced in 2011 — was the addition of the Unlimited, Low Power and Multioperator, Low Power categories, which gives stations who wish to use spotting or multiple operators but don't wish to use high power a chance to compete.

Single Operator, Low Power (A) Category

The biggest category by a large margin with 611 operators entered was won by Matt, K7BG who edged his friend and longtime rival Randy, KØEU 192,960 to 187,680. Matt, who travelled to Denver in 2010 to visit Randy and see his station, credits improved high-band propagation for the win. "Propagation seemed good all the way around," he said. "I had all the mults in the bag by 0600Z the first night. That took the pressure off to go mult hunting on Sunday. Hats off to Randy for the manifold wins he has had in this category over the years. It will be a long, long time before anybody comes close to his phenomenal performance."



When you are operating portable in Yellowstone National Park's Lamar Valley, the old ways are a little easier. Jim K7WA/7 put Wyoming in a lot of logs, bagging his own Clean Sweep in the process. (Photo by K7WA)

Matt said that one of the tricky parts of SS is strategizing time off. The contest runs for 30 hours, but you can only work 24. Studying past rate sheets is his key to choosing breaks. He allowed that one of his strategies is to keep some operating time available for the last few hours of the contest. "I always do. There always seems to be good activity as stations get on for a few hours and try out their pile-up handling skills. All new stations that get on the last hour or two are rare DX to the stations that are trying to find somebody new to work." In the bigger categories, you didn't make Top 10 if you didn't work all 24 hours.

Where does he go from here? "The trick to increases in score from here on out will be to develop skills in working part-time stations on Saturday who may just show up for an hour or two to run some stations of their own. If I am running and not finding them, they may not be around on Sunday when I will be doing more S&P with the second radio."

Pat, NAØN came in third, a rare achievement for a station from Minnesota. "This is my first Top 10 in SS and this is the first time that I have won the MN section in SS, so it feels really good," Pat said. He credits the tough competition fostered by the Minnesota Wireless Association, which perennially puts Al, KØAD; Kirk, NØKK and Ron, NØAT into competitive positions in many major contests. "Every year

my goal is to win the section but it is really hard. From the onair serial numbers, I could tell I had the lead this year but I knew I couldn't let up because recently our section has had a lot of virtual ties at the top. The rivalries that I have now with KØAD, NØKK, and NØAT really keep things interesting."

Single Operator, High Power (B) Category

Fellow QST author Steve, N2IC returned to competition for 2011 and returned to the top of the podium. Hot on his heels was Pat, N9RV who missed Steve's mark by 22 QSOs. Like A-category winner K7BG, Pat's Montana QTH seems to be benefitting from increased high-band propagation. Pat beat or matched Steve on all bands but 15, where Steve's 352 QSOs to Pat's 211 made the difference. Pat scored 345 QSOs on 10 to Steve's 270, but the 10 meter gains weren't enough to offset that 15 meter advantage.

Pat said he's not worried about band-by-band results since you can only work a station once. For someone who says he's still "learning the ropes" of SS, he's doing pretty well, having tied for first last year and missing the title this year by a nose.

"I wouldn't call getting beat by 22 Q's a 'dead heat.' But you are charitable to call it that," he said. "About the only strategy I can think of is off times. Other than that, with two radios you CQ on one band and tune on the other and band change when rate feels like it's needed. Maybe that's why I'm No.2 instead of No.1."

As a domestic contest, there aren't a lot of exotic call signs in SS, but Jeff, K1ZM probably has one that alone is good for a few decibels even if the section itself isn't all that rare: VY2ZM. Jeff drove the Prince Edward Island station to No. 3 in the B-category while making about a quarter of all QSOs logged with Maritime-section stations.

Mark, AG9A whose effort last year at NØNI resulted in a rare tie with Pat, N9RV atop B-category, was fourth.

Single Operator, QRP (Q)

There's a TV show called "Glutton for Punishment" in which host Bob Blumer has competed in eating stinging nettles, husking coconuts, and cycling up an infamous Tour de France stage to the peak of Alp d'Huez. But he's never faced the true punishment: facing off against some of the world's best operators in a contest with arguably the most complex exchange around, using just five watts of power.

Tree, N6TR who still holds the QRP record from a 2002 effort at W5WMU, won QRP for 2011 with 145,518 points. Kirk, K4RO took second, followed by WØMHS. Fourth through sixth was a tight race with less than 2,000 points between Nos. 4 and 6: NØUR, NN7SS (K6UFO, op.) and KØPC fought hard. KØAV, W1XX, N7IR and K9ZO round out the Top Ten in QRP.

Single Operator, Unlimited, High Power (U)

The sun rising in the east, the Charlotte Bobcats losing another game — and N6RO and K6LL at the top of the Unlimited category. There are some things you can just count on. Unlimited allows operators to use spotting but since most top stations work all available multipliers quite quickly, it's also handy for finding new stations to work. You can only work each station once so every new one is welcome, particularly on Sundays.

"I somehow managed to squeeze by Dave, K6LL again but it was the hardest work I've ever done in SS," said Ken, N6RO.

Ken credits "relentless SO2R on Sunday" and an early rise on Sunday to capture some great rates for the win. "Gets harder every golden year," he said. "I'll be 75 for the next one, which will be CW SS No. 59 for me."

When Ken said "squeeze," he wasn't kidding. His 1,316 QSOs just nudged out Dave's 1,313. Both earned a sweep. Indeed, only nine QSOs separated Ken from No. 3 Ty, K3MM. As propagation ramps up, expect this battle to be quite hot again this year.

Unlimited is the second most-popular category with 272 logs, yet the scores are routinely lower than the top scores in Single Operator, High Power. The reason for that may be nothing more than geography. The Top 5 stations in U were each the top station in their sections regardless of category, sometimes by large margins. Some sections just get better skip angles than others and the hottest sections seem to have a propagation pipeline into the heart of the US ham population centered, approximately, on Ohio.

Single Operator, Unlimited, Low Power (UL)

New for 2011, the Unlimited, Low Power category is a place to play for those with access to spotting but who don't have or don't wish to use an amplifier. Like A-category, 150 watts is the maximum allowed. UL was quickly embraced by

operators. With 148 logs, it was the fourth most-popular category. The category was won by Chadd, KK7S from WWA.

A Sampling Of Sweepstakes Stations

NE9U: Yaesu FT1000D, ICOM IC-765, Amp Supply LK-500Z amplifier; Cushcraft A4 @56 feet, 80/40 sloper, fan dipole at 15 feet and 160-m inverted L. Wish list: 40m beam or higher dipole.

W6YX: Yaesu FT1000MP and FT1000MP MkV, Elecraft K3; six-element monobanders for 20/15/10, five-element monobanders for 20/15/10, Force 12 C31XR, Mosley Pro67A, M2 four-element 40-m Yagi, inverted vees for 40 and 80.

N9CO: Yaesu FT1000MP, Kenwood TS930; four-element 20m monobander @85', Cushcraft XM240 @95', five-element 15-m monobander, wires for 80 and 160.

NAØN: Pair of ICOM IC-7600s; Cushcraft A3S @50', trap dipole for 40-160, Hustler 5BTV "with no radials" for the second radio.

K8BL: ICOM IC-7700; four-element TET tribander, double bazooka vees for 40 and 80.

VE3KI (@VE3FU): Elecraft K3, Kenwood TL922; Hy-Gain TH5 @70', Hy-Gain 402 BA (2-el. 40-m) @70' and 80-m vertical.

N6RO: Pair of Elecraft K3s, Alpha 76 amplifiers; stacked Yagis from 40 to 10 meters and four-squares on 80 and 160. Tables (heading for section in Notes style)

"I really like the Unlimited, Low Power category! It's hard enough finding new sections to work and then actually working the rare ones with low power. Being able to see them on a spotting network is extremely helpful!" said Bob, K8BL whose 158,080 points were good for a victory in UL in the Central Region and No.5 in UL overall.

Coming in second was VA2WA, piloted by Victor, VA2WDQ who narrowly beat out Fred, KE7X. K2NNY (Paul, K2DB, op.) was fourth from Northern New York. (Isn't it cool when call signs actually indicate the section, too?)

Multioperator, High Power (M)

Unlike 48-hour marathons, SS — with a 24-hour limit — doesn't earn a huge following in Multioperator categories. But those who play multiop all seem to have fun doing it. M-category can be quite the production, too, with some great food to fuel the troops and some excellent camaraderie.

W6YI (+K6AM, N6AN and N6MJ) rode to a large victory over No. 2 W2FU (+N2ZN and K2TJ) with 105 more QSOs. KP2M (N3XF, W1EQ and K1ZE) in the Virgin Islands placed third and Alberta's VE6EX was fourth.

Multioperator, Low Power (ML)

Also a new category for 2011, ML wasn't embraced as heartily as was Unlimited, Low Power with 14 logs entered. But it appears to be a great introduction to SS with an inspirational appearance in Top 10 available to stations who otherwise wouldn't.

NP4DX (NØAX, KX9X ops.) won ML with 181, 760 points and 1,136 QSOs, which is an excellent result for a station limited to 150 watts. That score would have put them into eighth place in multioperator against stations with the full 1500 watts available. (See ncjweb.com for an article about NP4DX!)



Ward. NØAX (L) and Sean, KX9X took a vacation expedition to Arecibo, Puerto Rico to take first place in the new Multioperator, Low Power category. One of their team mascots, Wilson – a coconut, kept things flowing smoothly throughout the contest. (Photo by NØAX)

N6KI (+WB6NBU, W6RW, N6CY) placed second at 128,320 points followed by K3LID. KØUK was fourth, WR4I fifth and in sixth place was VE4DR (VE3BXI and VA7DZ, ops.). WA6KYR (+AA6TH), WDØGTY (+N5PJ), N2AW (+WA3OFC) and KK5OV (+KB5ZSK) round out Top 10.

School Club (S)

With all the fine schools throughout Canada and the United States it would be good to see more entries in this category which is designed to help Elmer students and staff into Amateur Radio contesting. A recent change opened up the category to alumni (previously, only current students and staff could enter) which should make it more attractive for hams to go back to their alma mater and get more people involved in the category.



(L-R) Rebecca Rich KBØVVT, Mike Heideman N7MH, and Nick Ulman KZ2V were three of the operators piloting the Stanford Radio Club to first place in the School Club category. (Additional operator NF1J not shown)

A record was set in 2011, with W6YX at Stanford University at 213,600. Operators were KBØVVT, NF1R, KZ2V and N7MH. Mike, N7MH said he was excited to join School category when it was opened up to alumni. For the previous two years, he said he operated the station as a single-op and said the site was shared with a multioperator operation, which limited availability of SO2R and required co-operation in band changes. For 2011 they had free run and used it to maximum advantage with three radios (one running, two for spots) locked out with software to prevent more than one signal on the air at any time.

In second place was Bob, KØBH, operating KØHC at Hesston College in Kansas. The only other stations in the category in order of finish, were W4UAL, W3ABT (K3BHX,op.) and N5XU (AA5BT, op.).

The low entry count is something Mike, N7MH and Rebecca, KBØVVT lament. "I would like to see at least one School Club category entry for each of the 80 ARRL sections," Rebecca wrote (prior to the addition of three new sections for 2012).

Regional Competition

Because geography clearly favors some stations more than others, a statistic that is closely followed by some are regional breakdowns, either by ARRL regions or by individual sections.

"I haven't made Top Ten very often due to having a modest station on a city lot," writes Bob, K8BL who not only won the Central Region title in Unlimited, Low Power, he placed No. 5 overall. "But I always compare my scores against folks I know, just for needling rights and to know who to congratulate when I run across them. It's not an ego thing for me and I'm happy when I see friends do well."

Sharing that opinion is Charlie, N9CO who just missed the Central Region title in UL and No.6 overall by 2,080 points, or 13 QSOs. "There are a lot of great operators in Northern Illinois and Southern Wisconsin, and I'd give myself an inferiority complex if I placed too much emphasis on 'keeping up' with these guys," he said. "That being said, it is nice to beat one of them on occasion, but it doesn't happen very often."

Richard, VE3KI doesn't watch the regional races that closely but he does like to compare his efforts against other Ontarians and Canadians. In that regard, he did sneak out a win over Tony, VE3RZ.

"I was aware that VE3RZ and I were pretty close and although his claimed score was four QSOs ahead of mine, I'm pleased to see that I squeaked past him by four QSOs in the results. I'm also pleased to see that I only lost 8 QSOs in the log checking, a drop of less than 1 per cent from my claimed score," Richard said.

Tony, VE3RZ responds that his greatest rival is himself which can be a very healthy way to look at contesting. "The most important comparison remains my own score in previous years. I am always striving to do better," he said.

If Richard, VE3KI is looking over his shoulder at VE3RZ, here's what he can expect Tony said: He wants to swap out his phased pair of 40 meter verticals for a four-square and change his 160 meter inverted-L into a top-loaded vertical with sloping wires. He's also planning to make the leap to SO2R using his ICOM IC-756 PRO and Elecraft K2/100.

Charlie, N9CO sees accuracy as his main stumbling block. "I always get hammered by log checking," he said. "Don't get me wrong: it's a great thing and I'm glad that it is being done. I try to use the information to better myself but seem to be stuck in a rut."

Using the Online Database

There are a number of ways you can compare your score against others. With the online database you can sort by section, by category, and by club membership. It is a meaningful way to add context to your efforts, to find ways to

improve your score, and to gain inspiration you might lack if you only focus on the Top 10.

See you in November!

The 2012 November CW Sweepstakes runs from 2100 UTC Nov. 3 to 0259 UTC Nov. 5. A sweep will be a little harder this year as the Canadian province of Ontario has been split into four sections that are yet to be named, growing the section count to 83. There will be a Greater Toronto section (like LAX or SF), and eastern, central and western Ontario sections. Names and section abbreviations will be announced in due course – make sure your logging software is up to date next year. Dust off your paddle (and broom) and get ready for some contesting fun!

Division Winners							
CALL	CATEGORY	SCORE	CALL	CATEGORY	SCORE		
Atlantic			New England				
NO3M	Α	169920	K1BX	Α	165760		
AA3B	В	203680	K8PO	В	196000		
N2FU	M	208800	WA1QKT	ML	480		
K3LID (WM3O, op)	ML	100800	W1XX	O	109512		
K2ZR	Q	99176	W1SJ	ũ	160320		
W3ABT (K3BHX, op)	S	53592	W1WBB	UL	104480		
K3MM	U	209120	K7BG	Α	192960		
(2NNY (K2DB, op)	UL	165760	Northwestern				
Canada			N9RV	В	232000		
	Δ.	140500		M			
/E5ZX	A	146560	K7GT		81212		
/Y2ZM (K1ZM, op)	В	229760	W7RM (N6TR, op)	Q	145518		
/E6EX	M	190720	KB7Q	U	185120		
/E4DR	ML	60532	KK7S	ÜL	168480		
/A3DF			Pacific	92	100-100		
	Q	97032					
/E3KI (@ VE3FU)	U	158080	KF6T	Α	155360		
/A2WA (VA2WDQ, op)	UL	167840	KH7X (KH6ND, op)	В	219360		
Central `			W6BO	M	18620		
N9CK	Α	178066	W6JTI	Q	102400		
N9RE	В	209120	W6YX	S	213600		
K9SD	M	73766	N6RO	U	210560		
K9ZO	Q	108546	K7GK	UL	95940		
NE9U	Ü	159200	Roanoke		300.0		
				^	400744		
N9CO	UL	156000	N4UA	Α	123714		
Dakota			N4AF	В	198400		
NAØN	Α	183680	W4RM	М	169280		
NDØT	В	215360	WR4I (NG3K, op)	ML	69888		
KØHB	M	151200	W7IY	Q	104052		
NØUR	Q	115340	W4MR (AA4NC, op)	U	204160		
K1KD	U	167360	K4XD	UL	131840		
KØMPH	ÜL	131930	Rocky Mountain				
Delta	OL	131330		Α	407000		
			KØEU		187680		
N8OO	Α	175040	N2IC	В	235520		
WO4O	В	141094	WØDLE	M	183680		
W5RU	M	189440	KØUK	ML	79772		
	Q		KØAV	Q			
K4RO		124030			112320		
N4ZZ	U	200480	WØZA	U	170400		
N4DW	UL	129920	ACØDS	UL	143040		
Great Lakes			Southeastern				
W1NN	Α	161760	KØLUZ	Α	171500		
					171520		
N5MX	В	185760	NP2X	В	195520		
W8EDU	M	147200	KP2M	M	205920		
K4BRI	ML	11152	NP4DX	ML	181760		
N5EE	Q	93288	N4JF	Q	99066		
K8BZ	U	99200	W4UAL	S	55616		
K8BL	UL	158080	N4BP	U	182720		
Hudson			N4PN	UL	154720		
W2LK	Α	144320	Southwestern		.020		
					450000		
N2NT (N2NC, op)	В	216000	AA6PW	Α	152000		
AB2DE	M	38710	K6LA	В	212000		
KR2Q	Q	85488	W6YI	М	225600		
W2VQ	Ü	97920	N6KI	ML	128320		
WA2PJI	UL	17292	N7IR	Q	109336		
Midwest			K6LL	U	210080		
KØVBU	Α	148204	KU7Y	UL	56940		
	B		West Gulf	0 -	300-10		
NØNI (AG9A, op)		227040			,		
KØBJ	M	182880	W8FN	Α	151838		
NØMHS	Q	119520	N5RZ	В	218720		
KØHC (WØBH, op)	S	179040	WDØGTY	ML	35568		
				Q			
NØXR	U	162740	K5NZ		93784		
NUØQ	UL	75366	N5XU (AA5BT, op)	S	36656		
			W5RQ	U	110560		
			N1CC	ÜL	100960		

Regional Leaders Q = Single-Op QRP, A = Single-Op, Low Power, B = Single-Op High Power, U/UL = Single-Op Unlimited/Low-Power, M/ML = Multioperator/Low-Power **Northeast Region Southeast Region Central Region Great Plains Region West Coast Region** Dakota, Midwest, Rocky Pacific, Northwestern and New England, Hudson and Central and Great Mountain and West Gulf Southwestern Divisions; Atlantic Divisions; Maritime and Delta, Roanoke and Lakes Divisions: Divisions; Manitoba and Alberta, British Columbia and **Quebec Sections** Southeastern Divisions Ontario Section Saskatchewan Sections **NWT Sections** Call Call Cat Call Call Score Cat Score Score Cat Score Cat Call Score Cat 192.960 NO3M N8OO N9CK KØEU K7BG 169.920 175.040 178.066 187.680 N8NA KØLUZ 171,520 W1NN 161,760 183,680 W7WA 169,760 167,680 NAØN Α Α K1BX K1TO 163,840 158,560 Α N7VM 174,560 Α N7XU (K4XU, 166,240 165,760 KF6T W2ID (@ K9RS) 148,160 NA4K 143,840 K9KM 132,404 KØAD 168,640 155,360 K1XM 144,960 K1PT 139,672 KV8Q 132,160 Α NØAT 166,080 AA6PW 152,000 Α (NØKK, op) VY2ZM (K1ZM, op) W9RE N2IC 229,760 N4AF 198,400 209,120 В 235,520 N9RV 232,000 KH7X (KH6ND. N2NT (N2NC, op) 216,000 В NP2X 195,520 В W5MX 185,760 В NØNI 227,040 В 219,360 В (AG9A, op) AA3B 203.680 В K4BAI 185.440 В K9CT 177,440 В N5R7 218,720 В KKI A 212.000 В W7RN (N6TV, K8PO WDØT 196,000 В W4AU 149,600 В K1LT 173,440 В 215,360 В 210,720 В op) VF7CC N4UU KD4D 193,600 В 143.676 В KF9I 169.120 В WXØB 209.600 В 206.880 В (K5GA, op) WØDLE W2FU 208.800 Μ KP2M 205.920 W8FDU 147,200 M 183,680 W6YI 225.600 М 41,890 38,710 W31.1 M M W5RU 189 440 Μ NT8V 77.600 M KØB.I 182 880 VF6FX 190 720 М AB2DE W4RM 169,280 73,766 М 151,200 W6TK 163,200 AD4Z 146,624 Μ NØMA 69,120 Μ N6WIN 160,320 М N4FX 121,760 М KØJA 44.352 М K7GT 81,212 М K3LID (WM3O, op) NP4DX 181,760 K4BRI KØUK 128,320 100,800 ML 11,152 ML 79,772 MLN6KI ML WR4I (NG3K, WA1QKT 480 М 69.888 KC8OBH 10.340 ML VE4DR 60.532 ML WA6KYR 52.128 MI op) N2AW W8PLP ML WDØGTY 16,048 ML 9,152 35,568 MLKK5OV 12,480 W1XX 109,512 Q K4RO K9ZO Q WØMHS 119,520 Q W7RM (N6TR, 124,030 Q 108,546 145,518 op) NN7SS K2ZR Q W7IY NØUR Q 99.176 104.052 Ω 115.340 114.080 Ω N9NE 100,932 (K6UFO, op) N4.IF KØPC 109 336 Ω KR2Q 85,488 Ω 99.066 Ω VA3DE 97,032 Ω 113 568 Ω N7IR N5EE W7YAQ W1QK 71.288 Q K3TW 91.884 Q 93.288 Q KØAV 112.320 Q 107.840 Q Q ã AA1CA 59,496 Q K4QPL 88,638 Q WI9WI K5NZ W6JTI 102,400 86,856 93.784 Q W3ABT (K3BHX, op) S W4UAL W6YX S 53,592 55.616 S 213,600 КЗММ 209,120 U W4MR 204,160 NE9U 159.200 WØZA 170,400 N6RO 210,560 U (AA4NC, op) NY3A 196,800 U N4ZZ 200,480 U VE3KI (@ 158,080 U K1KD 167,360 U K6LL 210,080 U VE3FU) N4BP U K7NV U 182.720 KTØR 166.720 U 193,600 VE3RZ WX3B 177,280 157,440 U (KØOB, op) AB3CX 174.880 U KF3X 180.640 K9NR 154,400 U WT9O 163,360 KB7O 185,120 WR3Z U AD4EB W9IU U NØXR 173,760 176.160 U 115.814 162,740 U K6SRZ 184.640 U VA2WA (VA2WDQ, op) 167,840 N4PN 154,720 UL K8BL 158,080 UL ACØDS 143,040 KK7S 168,480 UL UL UL 131,930 130,560 UL K2NNY (K2DB, op) 165,760 K4XD 131,840 UL N9CO 156,000 UL KØMPH UL KE7X 167,360 K3AU (K2YWE, op) NØSXX 154.080 N4DW 129.920 UL KB9S 102.542 UL UL K7QQ 115,498 N2MM 140,000 UL AA4FU 116,000 UL K9WX 99,060 UL 119,360 UL VA6AM 99,856 UL K3MD 113,280 ÜL KU8E 99,680 ÜL K4FXN ÜL N1CC 100.960 Ш K7GK 95.940 UI