

ARRL January VHF Sweepstakes 2012 Results By Kevin Kaufhold, W9GKA

Fireworks in January!

The summer months are usually known for dramatic activity on the VHF and above bands but the 2012 January VHF Sweepstakes weekend surprised almost everyone with an exceptional amount of enhanced propagation which equaled or surpassed a summer run on the bands in some areas. Not only was there an abundance of sporadic E (E-skip or Es), but aurora (Au), transequatorial propagation (TEP), and even F2 and Au-Es were evident in many areas. Several stations had Es QSO totals approaching their typical June VHF QSO Party results. Many participants felt that this year's contest had some of the best January propagation in many years. As Bob, K2DRH noted in his post-contest recap, "This one had it all, Au, Es, and even some enhanced tropo."

At the outset of this report, great thanks are bestowed upon the numerous individuals who responded to requests for information on the spectacular conditions, some of whom provided log extracts and significant details. Because of these fabulous notes from the contestants themselves, this write-up has become something more than a typical contest results article, taking on the trappings and detailed richness typical of some propagation studies.

6 Meter Conditions

For many ops, the fireworks on 6 meters occurred right from the start of the contest. In the mid-section of the nation, Larry, NØLL made 186 contacts on 6 meters from his Midwest location and even worked HKØNA on 6 meters for DXCC entity #130. Congrats Larry! Jon, NØJK had strong Es from eastern Kansas to the mid-Atlantic region and even had a run going using a twoelement Yagi with 10 watts. The opening moved to the southwest after two-plus hours with Mexico coming in very loud. Paul, WØUC experienced similar conditions with the southeast coming in at the start on Saturday then shifting into the southwest from 2103Z until 0300Z with a contact to W3XO/5 and many others. Bill, KØHA worked P43A and P49V about the same time, possibly via F2. NØJK also worked P43A on 6 meters Sunday at 2215 UTC.

Larry, N9LB worked over 40 stations from EN52 in Wisconsin to South Carolina through the Gulf and into the southwest from 1925Z until 2141Z on Saturday. Another brief opening occurred later on Saturday into New Mexico, Idaho, Arizona, and Colorado. Only a single five-element beam at 60 feet and 100 watts was used. Dan, K9EA in Indiana experienced good conditions mostly into the northeast and southeast. Marshall, W9RVG in EM57 in southern Illinois worked into DM near the start and then heavily into the south and southeast from then on, at one point working ZF1. On day two of the contest, Marshall again worked to the south and into YV4 and YV5.

Es From the West

Duffey, KK6MC got in on the fun while roving across four grids between Flagstaff and Phoenix with W7QQ. They had numerous Es QSOs on Saturday afternoon, some to the same stations as they moved between grids. The opening was so intense that many contacts occurred while driving through hilly terrain. Another opening into the Pacific NW hit on Sunday afternoon and throughout California. Traveling the same route as last year, the KK6MC score tripled. A Moxon beam close to the car roof with 100 watts was used for all 6 meter contacts.



Duffey, KK6MC roved across four grids between Flagstaff and Phoenix, using a Moxon beam for 6 meters and Yagis for 2 meters through 70 cm. (Photo by KK6MC)

Len, WA6KLK in CM89 reported working P43A in Aruba at 2001 UTC Sunday and then several others in rapid succession in the DM grid field. Len was running only 100 watts to a three-element beam. Pete, WA7JTM indicated that this was his best Es opening in a January contest – ever! That says a lot since he has operated in contests going back to the 1960s. Tom, NQ7R in Arizona had numerous 6 meter single-hop contacts into the south, Midwest, and Pacific Northwest.

Don, W6KBX had almost thirty 6 meter single-hop Qs from his location in Sacramento, California as well as a brief opening into the Caribbean between 2151 and 2209Z Saturday, working VP2, P43A, FM8, and FM5. Dave, N7DB also worked Es from his Pacific NW location, contacting western interior stations via singlehop. Dave noted Au contacts into VE7 from some ops in his area. Many spots suggesting F2 were reported from W5, W6, W7 into the Caribbean and South America. For instance, Steve, W5KI worked YV5ESN in Venezuela from EM36.

West Coast Region		
(Pacific, Northwestern and Southwestern Divisions;		
Alberta, British Columbia and NWT S	ec	tions)
WA7JTM 27,2	70	SOLP
NQ7R 24,44	44	SOLP
WJØF 19,1		
K6MI 14,3		
K6TSK 9,8		
N7CW 38,0		
W6XI 18,7		
N7EPD 13,4		
KC6ZWT 13,0		
KC6SEH 6,8		
	45	SO-P SO-P
	60 27	50-P L
W6YX 6,2		MO
	40 59	MO
	50	MO
	63	MO
	18	MO
K6LMN 3,0	78	R
	45	R
KL7YK 5	80	R
K6GEP	63	R
KK6MC 12,9	20	RL
K6BRW 3,4		RL
WW7D 2,7		RL
WA7KVC 2,3	98	RL
K1FJM (N6ZE, op) 9	10	RL

Fire and Ice in the Northeast

Five inches of snow and sleet fell in many areas of the Northeast twelve hours before contest. As a result, activity at times was lower than usual and several rovers got a very slow start but numerous stations got in on the fun anyway. Joe, K1JT reported isolated Es openings into the south at the start of the contest and again on Sunday from 1830 to 2335 UTC, both into the southeast

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Extended Version 1.0

and to the midwest. Jim, N2NRD worked many Es Qs from the multi-op N3NGE. The band was open for 2 hours prior to the start then continued from 1900Z to most of the Gulf states for two hours. At one point Florida stations boomed in with very strong signals. XE3N and V31AE were also worked. A short opening also occurred into VO1, VE1, VE2, and VY2. On Sunday between 1922Z and 2217Z, an opening again occurred into the southeast. V31 in Belize was worked during this time as well.

Stan, K3IPM worked new grids in GN37 and GN39, as well as running many southeastern and Midwestern stations on Saturday through 2125Z. N3LL felt that 6 meters sounded like June during most of Sunday. Phil, K3TUF reported that 6 meters was briefly open for several days prior to the contest and into the morning of the first contest day on Saturday. What surprised Phil was the length of the openings and that Es appeared on both contest days. Jeff, K1TEO was also active on Eskip, working LA, AR, and TX on Saturday then many more on Sunday into the southeast. Ron, WZ1V in FN31 had strong 6 meter signals on Sunday from all the southern states. From eastern PA, Jeff, WA3UAT worked single-hop into the south, southwest, and Midwest in his first-ever VHF contest. I hope he realizes how special the 2012 event was!



This pair of YU7EF 5-element rotatable Yagi stacks are located in Pennsylvania for remote operating by Stan, KA1ZE/3 from his Clearwater Beach, Florida home. (Photo by KA1ZE)

Stan, KA1ZE/3 worked several well-known stations in the upper Midwest on Saturday, including WØUC, W9JN, WØZQ, KØKP, and NØAKC. Interestingly, Stan made contacts using his remote-controlled station in Clearwater Beach, Florida. A pair of YU7EF-designed 5-element rotatable Yagi stacks were in use. The receiver was an SDR (software-defined radio) with two channels and phase matching between stacks.

Northeast Region

(New England, Hudson and Atlantic Divisions; Maritime	
and Quebec Sections)	

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The Amazing South

N4QWZ in Tennessee's EM66 grid worked into South America, making contact with LU5, ZP5, and YV5 for the first time in his long radio career. Stations in CO2 and C6 were also worked. All Qs were on CW. While the Caribbean QSOs were likely Es, the South American stations were probably made via TEP. The propagation maps show another station in EM66 also making TEP Qs deep into South America at almost 5,000 miles distance. Mississippi's N3AWS in EM50 entered as Single-Op, Portable and worked FM8DY in FK94 with only five watts and three elements. N4BRF ran rates of 100+ QSOs / hour at times from EL96. It must have been an amazing experience for the Boca Raton club's first VHF contest.

From EM31, Marshall, K5QE had an exceptional E-skip run, working almost everything and everyone early Saturday afternoon in the EN and FN fields then switching into the DM field by 2156 UTC of the first day. In fact, others in the Northwest reported Marshall's signals being extremely solid for much of Saturday. One of the K5QE ops, N5NU, ran a 200-Q hour on Saturday. Marshall's multi-op station had 158 grids on 6 meters alone.

Southeast Region

	Southeast Region	
(Del	ta, Roanoke and Southeastern Divis	ions)
N3LL	103,032	SOLP
N4TWX	66,125	SOLP
N4QWZ	58,108	SOLP
W2BZY	36,642	SOLP
KO4MA	31,300	SOLP
W4ZRZ	64,533	SOHP
K4QI	61,608	SOHP
WD4MGB	46,509	SOHP
KI4FIA	34,132	SOHP
KØVXM	32,130	SOHP
N3AWS	7,398	SO-P
WØPV	5,289	SO-P
K4RSV	384	SO-P
W4NH	54,080	L
WY3P	35,966	L
N4BRF	10,318	L
WA4DYD	6,325	L
N4QV	29,488	MO
N4JQQ	22,750	MO
K1KC	22,320	MO
N4PD	3,080	MO
W4PK	2,911	MO
AG4V	16,665	R
K8GP	11,232	R
WA4JA	3,634	RL
N4ZTH	3,108	RL
KD4RSL	2,414	RL
KD4GCF	288	RL

Central Region

(Central and Great Lakes Divisions	Ontario	Section)
K2DRH	151,392	SOLP
VE3SMA	28,122	SOLP
N9LB	26,235	SOLP
K8MR	20,768	SOLP
VA3ZV	16,730	SOLP
WØUC	81,016	SOHP
K8MD	44,157	SOHP
K9EA	35,595	SOHP
VA3ST	35,100	SOHP
W9GA	23,828	SOHP
N8XA	6,400	SO-P
W9SZ	2,187	SO-P
KDØEBT	126	SO-P
W9RM	56,092	L
N9TF	9,882	
N8ZM	4,224	L
K8GDT	2,520	L
W9RVG	8,610	MO
N2BJ	7,130	MO
W8RU	3,686	MO
VE3OIL	33,902	R
K9TMS	12,072	R
N9REP	11,400	R
K9BTW	11,160	R
W9FZ	6,253	R
K9JK	9,400	RL
WB8BZK	8,080	RL
VE3RKS	1,856	RL
K9PLS	240	RL

Midwest Region

(Dakota, Midwest, Rocky Mountain and West Gulf Divisions; Manitoba and Saskatchewan Sections)

		,
WB5ZDP	33,182	SOLP
NØLL	27,306	SOLP
WB2FKO	24,947	SOLP
WAØARM	17,301	SOLP
W6ZI	17,220	SOLP
W5PR	80,475	SOHP
WØGHZ	58,195	SOHP
WØZQ	32,054	SOHP
W3XO/5	31,122	SOHP
WD5K	20,748	SOHP
WD5AGO	1,680	SO-P
KD7WPJ	108	SO-P
KØNR	90	SO-P
KØSIX	27,166	L
NØLD	7,865	L
WØVB	4,743	L
WD5IYF	1,716	L
K5QE	812,224	MO
КВØНН	70,596	MO
NØGZ	14,268	MO
K5GKC	2,838	MO
KC5MVZ	2,088	MO
K5ME	379,000	R
W5FWR	356,345	R
KF5KEY	351,840	R
AE5P	317,515	R
K5TRK	305,800	R
WK5F	22,750	RL
ABØYM	12,814	RL
WØBL	9,080	RL
AF5Q	777	RL
KE5VIO	192	RL
KE5VIM	192	RL
KRØVER	15,120	RU
	.0,120	

Aurora Hits in the Upper North

Au was strong in the upper plains and Midwest. Paul, WØUC in EN44 not only ran 6 meter Es, but had one of his longest Au sessions ever during a contest. Paul's first 6 meter Au run was on Sunday from 2026Z to 2044Z. The buzz then returned on 6 meters from 2244Z to 0130Z with contacts on 2 meters as well between 2301 to 0122Z. Gary, WØGHZ also made some Au contacts from EN34 between 0043Z and 0113Z on Saturday. Jim, K8MR had aurora contacts with VE2 and VE3 as well as with WØUC and W9JN. Steve, VE3SMA in EN93 also reported working WØUC and W9JN on Au at around the same time.

Jeff, K1TEO made some Aurora contacts from the Northeast although he felt that Au did not open significantly from his location. Ops at N3NGE reported that the Au was more of a "faint swish" from FN20 than the usual buzz sound. N1JEZ also reported an Au contact to FN07. ARRL's own NN1N, Dave made a number of Es Qs into the southeast on Saturday but followed that up with eight Au contacts to VE2, VE3, and W8 on Sunday between 2252 and 0100 UTC.

The Exotic Forms of Communication

On top of the tremendous propagation this year, several stations challenged this local contest perception with far distant QSOs on several modes and frequencies. K1JT, K5QE, and several others made Qs off the Moon once again this year. Many others ran meteor scatter on 6 and 2 meters. 10 GHz was well represented, too. One exceptional, 165-mile 10G CW contact between Jon, WØZQ and Jim, KØAWU is even available on-line at **nlrs-10ghz.blogspot.com**.

Top Ten by Category

Single Operator, Low Power (SOLP)

K2DRH	151,392
WA3NUF	147,618
N3RG	103,704
N3LL	103,032
AF1T	98,942
WB2SIH	82,296
N4TWX	66,125
K1KG	61,149
N4QWZ	58,108
N1DPM	40,152

Single Operator, High Power (SOHP)

K1TEO	375,386
K3TUF	332,536
K3IPM	103,562
WØUC	81,016
W5PR	80,475
WA3DRC	72,624
W4ZRZ	64,533
WB2RVX	63,300
K4QI	61,608
WØGHZ	58,195

QRP Portable (SO-P)

N3AWS	7,398
N8XA	6,400
WØPV	5,289
W9SZ	2,187
WD5AGO	1,680
WB2AMU	980
AE6GE	945
K2UNK	528
K4RSV	384
KL3JI	160

Limited Multioperator (ML)

W3SO	143,202
K2LIM	134,568
K1JT	64,365
W9RM	56,092
W4NH	54,080
W1QK	40,034
WY3P	35,966
KØSIX	27,166
W3HZU	26,270
N4BRF	10,318

Multioperator (MO)

K5QE N3NGE	812,224 535,050
K3EOD	137,772
W3SZ	79,280
КВØНН	70,596
N3YMS	66,700
N1JEZ	40,479
N4QV	29,488
WB3IGR	25,270
N4JQQ	22,750

K5ME	379,000
W5FWR	356,345
KF5KEY	351,840
AE5P	317,515
K5TRK	305,800
K5FAY	292,930
W5TV	184,052
K1DS	134,246
NN3Q	40,068
VE3OIL	33,902
VEGGIE	00,002
Limited Rover (RL)	
WK5F	22,750
KK6MC	12,920
ABØYM	12,814
K9JK	9,400
N2ZBH	9,316
WØBL	9,080
WB8BZK	8,080
WA4JA	3,634
K6BRW	3,480
N4TZH	3,108
	0,100
Unlimited Rover (RU)	

Rover (R)

KRØVER	15,120
K2TER	14,014

Division Winners

Single Operator, Low Power (SOLP)

Atlantic	WA3NUF	147,618
Central	K2DRH	151,392
Dakota	NØKK	12,600
Delta	N4QWZ	58,108
Great Lakes	K8MR	20,768
Hudson	WB2SIH	82,296
Midwest	NØLL	27,306
New England	AF1T	98,942
Northwestern	KD7UO	4,488
Pacific	K6MI	14,300
Pacific	K6MI	14,300
Roanoke	W3IP	18,848
Rocky Mountain	WB2FKO	24,947
Southeastern	N3LL	103,032
Southwestern	WA7JTM	27,270
West Gulf	WB5ZDP	33,182
Canada	VE3SMA	28 122
Canada	VE3SMA	28,122

Single Operator, High Power (SOHP)

KATHE	332,536
	,
	81,016
WØGHZ	58,195
KG5MD	23,280
K8MD	44,157
W2KV	23,302
WØLGQ	4,888
K1TEO	375,386
N7EPD	13,489
KC6ZWT	13,048
K4QI	61,608
K7ICW	10,728
W4ZRZ	64,533
N7CW	38,068
W5PR	80,475
VA3ST	35,100
	K8MD W2KV WØLGQ K1TEO N7EPD KC6ZWT K4QI K7ICW W4ZRZ N7CW W5PR

Single Operator, Portable (SO-P)

Atlantic	K2UNK	528
Central	W9SZ	2,187
Delta	N3AWS	7,398
Great Lakes	N8XA	6,400
Hudson	WB2AMU	980
New England	WA1LEI	6
Northwestern	KL3JI	160
Pacific	AE6GE	945
Southeastern	WØPV	5,289
West Gulf	WD5AGO	1,680

Limited Multioperator (ML)

Atlantic	W3SO	143,202
Central	W9RM	56,092
Dakota	KØSIX	27,166
Great Lakes	N8ZM	4,224
Hudson	W2JJ (WA2VUN,op)	7,310
Midwest	NØLD	7,865
New England	W1QK	40,034
Roanoke	WY3P	35,966
Southeastern	W4NH	54,080
Southwestern	WO1S	627
West Gulf	WD5IYF	1,716

Multioperator (MO)

Atlantic Central Delta Great Lakes Hudson Midwest New England Northwestern Pacific Roanoke Rocky Mountain Southeastern Southwestern West Gulf Canada	N3NGE W9RVG N4JQQ W8RU KC2SST NØGZ N1JEZ KE7SW W6YX N4PD WØRIC N4QV KF6I K5QE VE6CPP	$535,050\\ 8,610\\ 22,750\\ 3,686\\ 1,456\\ 14,268\\ 40,479\\ 450\\ 6,240\\ 3,080\\ 1,924\\ 29,488\\ 18\\ 812,224\\ 63\\ \end{array}$
Rover (R)		
Atlantic Central Dakota Delta Midwest New England Northwestern Pacific Roanoke Rocky Mountain Southwestern West Gulf Canada	K1DS K9TMS KCØP AG4V WB9QAF AA11 KL7YK K6EU K8GP NØLP K6LMN K5ME VE3OIL	134,246 12,072 9,418 16,665 187 17,976 580 645 11,232 19,760 3,078 379,000 33,902
Limited Rover (RL)		
Atlantic Central Delta Hudson Northwestern Pacific Roanoke Rocky Mountain Southeastern Southwestern West Gulf Canada	N2SLN K9JK WA4JA N2ZBH WW7D K6BRW KD4RSL ABØYM N4TZH KK6MC WK5F VE3RKS	1,104 9,400 3,634 9,316 2,768 3,480 2,414 12,814 3,108 12,920 22,750 1,856
Unlimited Rover (RU)		
Atlantic Rocky Mountain	K2TER KRØVER	14,014 15,120

6 Meter Propagation Play-by-Play

The multitude of contest reports takes on added significance when plotted on propagation maps. John, K9JK did a great service in generating the following maps by aggregating contest data per hour, generating the exact number of contacts made between specific grids, and using the mapping features of Google Maps (**maps.google.com**) to provide visual identification of QSO paths and the distance between end-points. The ARRL log-checking database was used in the compilation of these maps so the visual depiction of activity should be a good indication of actual conditions. Mid-points between contacts and likely E layer densities are also easy to spot. When looking at the following maps, it is amazing to realize all this occurred in January, not June!

The explosive conditions on Saturday can be seen from maps of the first five contest hours. At the opening bell of 1900Z, 6 meters was wide open in much of the eastern half of the country. The mid-point of many contacts centered on Indiana with some contestants working into Mexico.



In the second hour (2000-2100Z), the Es opening strengthened in the east and extended into the southwest. Stations as far northeast as GN29 and GN37 in Newfoundland were working to the south and southwest. Florida had a pipeline to the upper Midwest. Stations in DL81 from Mexico were booming into the US.



During the third hour (2100-2200Z), the eastern opening shifted southward while the southwest strengthens further. A few contacts were made to Costa Rico and El Salvador over 2,000 to 2,500 mile distances. Newfoundland and other VE QSOs continued. Some Qs occurred with the Pacific Northwest.



VE contacts in the far northeast continued in Hour 4 (2200-2300Z) but the eastern opening completely fell apart. The southwest opening continued with the midpoint of many contacts being over Oklahoma and Northern Texas. Mexico was still running due north into the US.



By Hour 5 (2300-0000Z) in the early evening on Saturday the southwest opening is still considerable but weakening. Newfoundland, as well as Nova Scotia, were still open to the east. The upper NE in FN44 also became quite active. After an amazing day, 6 meter activity finally died out afterwards on Saturday.



Sunday's propagation during Hour 23 (1800-1900Z) was also quite fascinating, starting with strong Es between the NE and the south. Note the two long contacts from EL29 in Texas; one to the south in Costa Rica (EK70) and the other to the north in Minnesota (EN35).



Paths along the Eastern Seaboard into the south continued to build in Hour 24 (1900-2000Z) but no DX to the south was worked.



Contacts along the same paths in the east intensified in Hour 25 (2000-2100Z). Some activity started in the west and several QSOs were made to Guatemala in EK44 and EK53; Costa Rica in EK70; and Cuba in EL83.



Sketchy paths in the west and Northwest firmed up in Hour 26 (2100-2200Z) while the eastern circuits continued. Qs continued with Guatemala and then Honduras (EK64) was worked from Texas. Interestingly, the upper plains and VE begin scattered QSOs to the east and south. This may have been Au on 6 as there is really no way to tell from the log data itself, but that would be consistent with activity reports.



By Hour 27 of the contest (2200-2300Z), the entire eastern portion of the country was involved in Es openings. The Pacific Northwest and west are now solidly within the western opening, too. Suspected F2 or double-hop Es hit, with numerous QSOs to Venezuela in FK50, FK60, FK80, and FJ89. Cancun and Martinique also opened. One contact between CM87 and FK52 in Curacao covered 3,735 miles. Another contact between DM24 and FK94 traversed 3,617 miles.



The eastern Es weakened in Hour 28 (2300-0000Z) but the TX and LA paths to Florida, Latin America, and the Caribbean intensified. The Northwest dropped out with the western openings shifting down to California. The upper Midwest and plains areas again opened into the east. Long-haul contacts continued with Honduras, Guatemala, Costa Rico, Martinique, and Venezuela in the range of 2,600 + miles. The longest contact may have been between CM97 and FK98 at 3,927 miles. Puerto Rico also became active during this period.



All openings weakened considerably by Hour 29 (0000-0100Z). Only Los Angeles was still open in the west. The upper plains and VE strengthened into the east however. Contacts also continued into the Caribbean and Latin America. While Puerto Rico had some pathways to the north, the biggest news now involved southern types of TEP between Puerto Rico in FK68 and Argentina and Brazil in GG40 and GG22 at 3,484 miles.



The west almost completely closed down in Hour 30 (0100-0200Z), while the east enjoyed a final burst of activity to Florida. The Upper Plains states intensified their openings to the east. Sporadic E paths continued to Honduras, Mexico, Guatemala, and Costa Rico. The contest finished with two significant TEP QSOs between Tennessee in EM66 and Argentina in FF99 at 4,931 miles and Paraguay in GG14 at 4,713 miles. These two Qs may be the longest of the entire contest.



2012 Results – Aggregate Activity

As the tables show, log submissions were up this year some 8% over 2011 with 767 logs entered compared to 710 last year. With the enhanced propagation, aggregate scores surged some 24% over 2011 to 10,737,292 points. Total contacts increased 33% to more than 87,000 QSOs and total multipliers across all bands jumped 48% to almost 28,000. In fact, in only one prior year from 2002 through 2011 has anyone worked more than 100 multipliers on 6 meters and that was by K5QE in 2007. This year alone, seven stations went over 100 mults on 6 meters, three of those being SOLP, three SOHP, and one Multiop, Unlimited as shown in the QSO and Multiplier Leader tables. The graph shows the aggregate volume of contacts made during each contest hour. Note that in several hours on both Saturday and Sunday contestants worked over 3,000 Qs per hour. That is a lot of activity!



There were more than 100 logs with activity on the lower 6 VHF+ bands, as shown in the following table. Even the microwave bands from 2.3G through 24G had good amounts of activity, with hundreds of contacts on most of these bands from all over the US and VE. 300G + frequencies had many QSOs, too, from 19 separate logs.

Band	Logs	QSOs
6	720	46,408
2	612	20,964
222	317	5,683
432	466	8,350
902	114	1,406
1296	173	1,883
2304	78	935
3456	52	708
5760	34	432
10G	46	456
24G	14	81
47G	0	0
75G	0	0
119G	0	0
142G	0	0
241G	0	0
Light	19	51
-	Total	87,357

Contest Categories

Participation was up in 2012 in many of the categories, as shown in the activity table. While there was some movement between sub-categories, total Single-op logs jumped dramatically from 574 to 619; total Multi-op logs increased from 60 to 69; and the Rover category totals (combined) went up from 54 to 63 logs.

Category	2012 Logs	2011 Logs
	2012 LUYS	ZUTTLUYS
SOLP	471	420
SOHP	148	154
SO-Port	16	22
ML	23	28
MU	46	32
Rover	39	30
RL	22	19
RU	2	5

The increase in category participation may in part be due to the better propagation. It is nevertheless a very healthy trend that hopefully will continue in future years.

Single-Operator Categories

In Single-Op, High Power (SOHP) Jeff, K1TEO took first place, just shy of 1,000 contacts and 375,000 + points. Jeff's score was certainly helped by the strong 6 meter conditions but making contacts on all bands through 10G was a large factor in his success, too. Notably, Jeff had 17 QSOs on 2.3G and 11 contacts on 5.7G. Now that's some all-band capability! Second in SOHP went to Phil, K3TUF also scoring well over 300,000 points. Phil blanketed all bands, making contacts as high as 24G as well as light. Stan, K3IPM took third place with over 103,000 points. He no doubt benefitted from the excellent band openings, working both to far northeast into VE as well as throughout the south and southeast US.

Single-Op, Low Power (SOLP) continues to be the most popular category in the contest with 61% of all contest logs. First place goes to Bob, K2DRH at 151,000 points. Bob led the nation in multipliers among the SOLP stations on most of the eight bands on which he was active. Only 4,000 points behind, Phil, WA3NUF captured second place this year with just over 146,000 points. Phil was on more bands and had more contacts than Bob but the difference was in the 110 more multipliers for K2DRH. Third went to Ray, N3RG at 103,704 points. Just a few hundred points behind in fourth was Bob, N3LL at 103,032 who no doubt was aided by strong Es into his West Central Florida location.

Single-Op, Portable (SOP) stations are a rugged bunch. Not only do they put up with freezing cold, snow, and sleet in portable spots but they run only 10 watts, use generators or batteries, and often make do with makeshift antennas. First place went to James, N3AWS from Mississippi who used only 6 meters, making 137 Qs and finishing with 7,398 points. Phil, N8XA worked 6, 2, and 222 from his Ohio location to take second, while John, WØPV finished third at over 5,000 points, also running only 6 meters from West Central Florida.

Multi-Op Categories

It is fascinating to watch multi-op stations in action. Vast numbers of contacts, bands, and multipliers are common practice. What is so intriguing is how they do it. Detailed checklists and equipment checks are standard practice for weeks before a big contest. Being able to juggle many schedules, bands, and modes from EME to MS and tropo is truly awe-inspiring to watch.

In particular, Multi-op, Unlimited (MU) is a no-holdsbarred, big power spectacular event, typically with many other single-ops and rovers in close coordination. Taking top honors this year is Marshall, K5QE's Texas team. At 812,224 points, Marshall's was one of two stations in the entire contest to exceed 1,000 total QSOs at 1,339 contacts. It was a long-sought goal of his to win the MU category in January from a low population area. Congratulations! Second place went to another great operation at Len, N3NGE's station in eastern Pennsylvania. Being the other station to go over 1,000 contacts at 1,229 Qs, Len's station was very close on contacts but over 100 multipliers behind K5QE, finishing at 535,050 points. K3EOD, Allen's team in New Jersey, did a great job finishing in third place at over 137,000 points.

The Multi-op, Limited (ML) category is an interesting category, being limited to only four bands but with multiple ops running the bands. ML saw intense competition in 2012. W3SO in Pennsylvania finished with top honors at 143,000 plus points. Around 50% of the station's 676 contacts were on 6 meters. Second place was taken by K2LIM, only 9,000 points behind with a few less contacts and multipliers. Third was K1JT with more than 64,000 points, working from New Jersey. Joe, K1JT is a fascinating fellow, winning both VHF contests back as far as the 1950's as well as the Nobel Prize in Physics.

The Rover Categories

Over the years, rovers have been instrumental in keeping activity levels up all over the country. Reaching into sparsely populated grids, rovers will often be the only way that some of the rarer grids are activated on any bands.

This year the national rover leaders were a Who's Who from the Nacogdoches Radio Club. (See the sidebar on their adventure at the end of this artcile!) The first seven places in the Rover category were from Nacogdoches as was the top place holder in the Limited Rover (RL). First place in the Rover category went to Bob, K5ME at 379,000 points. Running 11 bands through 24G, Bob made 672 contacts and 125 multipliers. Close behind was W5FWR at more than 356,000. The difference lay in a few less Qs and multipliers. KF5KEY was third at 351,000 points. All three of these top Rovers worked from 10 grids with 11 bands of operation.



A chart showing the number of QSOs logged during each hour of the contest. The effects of the big 6 meter openings raised activity on both days. (Photo by N6NB)

The RL category saw Bill, WK5F take the top spot at 22,750 points. Having only the lowest four VHF bands to utilize, he still made 303 contacts. Second was Duffey, KK6MC who had over 100 sporadic E 6 meter contacts in Arizona, totaling almost 13,000 points. Third in this category was ABØYM from Colorado, who also obviously benefitted from excellent 6 meter conditions with 65 out of 207 contacts being on 6 meters.

Only two logs were entered in the Unlimited Rover (RU) category. KRØVER in Colorado ran 6 bands through 1296, garnering 15,000 or so points. K2TER from New York was second, making over one-half of his contacts on 6 meters.

Club Competition

The Club Competition has been a driving force of the January VHF Sweepstakes since the earliest days of the contest in 1948. This year was no exception with 43 clubs participating compared with 38 clubs last year in 2011 and up from 27 clubs back in 2000. 414 club logs were turned in this year, accounting for 54% of all logs. Club members also generated the vast bulk of scores at 8,571,134 points, 78% of total points made by all participants. Any way one views the statistics, clubs continue to play a huge role in the January contest. The graph shows the close relationship between club logs and total contest logs.



In the Unlimited Club category, the Mt. Airy VHF Radio Club "Pack Rats" posted a huge number of club logs (77) as well as total points (2.4M) being the only club that amassed over 50 member logs in the contest. The consistency and sheer size of member participation and Mt. Airy club scores throughout the years has been truly staggering. Indeed, including this year the Pack Rats have won the last 16 consecutive Unlimited Club gavels in the January contest and have won either the Unlimited or Medium club category in almost every year since 1961. No other club can claim that kind of record in any contest, HF or VHF+.

Unlimited Club			
Club Name	Total Score	Logs	
Mt Airy VHF Radio Club	2,416,112	77	

Thirty clubs participated in the Medium Club category. The Nacogdoches ARC engaged in a monumental effort to take the Medium Club gavel with over 3 Mpoints, having increased their logs to 15 this year. The North East Weak Signal Group continued its strong showing from prior years, placing second in the category. Another preeminent club, the Potomac Valley Radio Club, placed third with more logs than any other club except the Pack Rats.

Medium Club					
Club Name	Total Score	Logs			
Nacogdoches ARC	3,024,885	15			
North East Weak Signal Group	782,902	20			
Potomac Valley Radio Club	464,850	36			
Florida Weak Signal Society	258,046	10			
Northern Lights Radio Society	254,539	15			
Society of Midwest Contesters	175,650	13			
Contest Club Ontario	161,530	16			
Badger Contesters	122,851	21			
Florida Contest Group	103,872	7			
Yankee Clipper Contest Club	86,541	12			
Roadrunners Microwave Group	72,208	3			
Arizona Outlaws Contest Club	66,271	4			
Tennessee Contest Group	59,164	3			
North Texas Microwave Society	48,959	5			
Pacific Northwest VHF Society	31,475	11			
Rochester VHF Group	29,927	9			
Frankford Radio Club	25,508	5			
Western New York DX Assn	20,959	3			
Carolina DX Association	19,472	5			
Grand Mesa Contesters of Colorado	0 18,016	6			
Northern California Contest Club	17,008	7			
Six Meter Club of Chicago	14,650	11			
South Jersey Radio Assn	14,353	6			
Bergen ARA	14,016	12			
Central Texas DX and Contest Club	10,758	4			
Alabama Contest Group	6,286	3			
Minnesota Wireless Assn	5,502	7			
Contest Group Du Quebec	4,888	6			
Southern California Contest Club	443	3			
Alaska VHF-UP Group	310	3			

The Local Club category experienced intense competition among 12 club entries. First place went to the Murgas ARC with 51,453 points from 4 logs. Murgas has also been a perennially active club, having now won eight Local Club gavels in January (at least by the author's count) and even more in September. The Bristol (TN) ARC finished close behind in second place at 47,773 points and 10 logs while the Stoned Monkeys ARC from Illinois was third with over 34,000 points.

Local Club				
Club Name	Total Score	Logs		
Bristol (TN) ARC	47,773	10		
Stoned Monkey VHF ARC	34,872	4		
Granite State ARA	22,740	4		
Eastern Connecticut ARA	18,774	4		
Lone Star DX Assn	18,174	3		
Raritan Bay Radio Amateurs	12,272	6		
10-70 Repeater Assn	9,141	5		
Meriden ARC	8,955	4		
Burlington ARC	5,655	6		
Mobile Sixers Radio Club	5,064	3		
Portage County Amateur Radio Svo	: 4,310	3		

With club support being so critical for the January Sweepstakes the entire contest truly becomes a celebration of the clubs. If any club would like to be featured in future contest write-ups please send in a short narrative and pictures of your exploits!

Conclusion

Propagation this year was extraordinary, with Es, Au, Au-Es, TEP, and F2 all contributing to the effort. Most of the contestant's scores were higher than in prior years as a result. The real significance of the 2012 edition of the January VHF Sweepstakes may lie however in the increased participation levels. Not only were total points, QSOs, and multipliers higher but submitted logs, participating clubs, and band activity levels were all up. Let's keep the trend going into 2013! See you next year for the January VHF Sweepstakes on 19th through the 21st! (Sean please confirm

Focus on the Clubs – The Great East Texas Adventure of the Nacogdoches ARC

Since January is normally driven by club activity, it is only fitting to focus on the amazing energy and efforts exhibited by the clubs around the nation.

Out in the middle of sparsely populated country, the Nacogdoches ARC club often racks up impressive totals on grids, contacts, and QSO points. An all-out effort was made this year by the Nacogdoches Contest Club to provide a new club experience that would allow club members an opportunity to meet new people, learn new aspects of Amateur Radio, and attempt to win first place nationally in the ARRL Club Competition by generating high scores at K5QE as well as all rovers in the club.

At the K5QE multi-op, the basic goal was to maximize grid counts on every band, especially 6 and 2 meters. Over the last several years, EME has become a mainstay for the station, as working the moon has been a great way to add to the grid count from an otherwise low-grid, low population location. 2 meter EME was rather poor this year however, with only 29 stations and 28 multipliers being obtained. With moon-rise in January being at 6:25 AM Sunday morning, it was difficult to work the moon, rovers, and tropo all at the same time. FSK441 MS was used on 6 meters until 2 AM, and then resumed at 5 AM Sunday. 15 unique grids were worked this way.

Wayne, N6NB and John, N6MU, assisted in the effort, transporting six of toolbox stations some 1,600 miles from Southern California to East Texas in (and on) a Econoline vehicle. Three 11 band stations and three 10 band stations were moved in this manner. A few days before the contest, five more operators from California joined the fun in Texas. Using Wayne's van, two rental cars, and a borrowed SUV, Army, AE5P, coordinated all rovers for the club. Army upgraded his own eight-band rover station to ten band, adding 5.7G and 10G. He also set up the same bands at K5QE on Friday before the contest. Unfortunately, the 5.7 and 10G at the multistation never worked at all, for some unknown reason. A local eight band rover and another 4four band rover were also deployed. Rovers were assembled and tested at AE5P's shop/shack.

N6NB indicated that based on ground rules set forth previously by Sean, KX9X in a Southern California Contest Club (SCCC) effort, a rover's score counts for the local club if one of the two operators is a resident member of the local club and so long as the rover satisfies the typical club distance requirements. Everyone from California was in agreement that this was to not be a SCCC effort, and thus all Texas call signs were used with at least one member of Nacogdoches being in each rover vehicle, making the activity a Nacogdoches ARC club effort. The photo in the earlier Rover section of the writeup shows the club rovers just before the start of the contest at a shopping center in Nederland, Texas.

The rovers worked from Nederland, TX (EL39) and moved their way north to Texarkana (EM23/EM33) for a total of 10 grids. The local area was blessed with very good weather for January, with warm temperatures and no precipitation. In addition to the main rovers, several other club members also roved independently to add more points to the effort. Some of these operators had very limited experience in roving, and their efforts were very much appreciated. It was truly a team effort, and all contributed to the Great East Texas Adventure.

Normally, the club QSO count is rather low, due to the extremely low local population count. However, with 6 meters being open into many areas of the country, QSO rates and overall scores were much higher than normal. While the lower band propagation was exceptional, the big club news of the contest was that a group of people out in the middle of very lonely territory could assemble so many stations to become quite competitive with much higher population centers around the country. While population and propagation are often the critical lynchpins of successful club operations, the Nacogdoches ARC has shown that through massive amounts of hard work, clubs anywhere can compete and win club gavels.

QSO Leaders B	Sv Band	K3JJZ	12 12	K1TEO	130	KDØEBT	2	W3SO -L	85 71
Single Operator Low Powe		K1KG	12	K3TUF	113	222 MHz		K3EOD	71
	er	N1DPM	12	WA3DRC	70	W9SZ	7	K2LIM -L	71
50 MHz	=	N4QWZ	10	K3IPM	66	AE6GE	7	K1JT -L	66
N3LL	562	WB2JAY	8	WA3SRU	65	K4RSV	3	N3YMS	56
N4TWX	464	N3ALN	7	WA3EHD	54	WB2AMU	3	KBØHH	55 43
K3TW	275	K6MI	5	N3ITT	52	N8XA	3	W1QK -L	43
N4BP	250	VE3SMA	5	WZ1V	49	KL3JI	2	W3SZ	35
W3LI	246	W3IP	5	W3GAD	48	432 MHz	-	KØSIX -L	31
WB2FKO	244	1296 MHz	6	WA2OMY	46	AE6GE	11	WB3IGR	31
WA7JTM	239	WA3NUF	26	WB2RVX	40	W9SZ	8	WY3P -L	30
N8RA	231								
NQ7R	227	N3RG	22	W1ZC	44	KØNR	5	W3HZU -L	30
WJØF	213	K2DRH	20	VA3ST	43	WD5AGO	5	W9RM -L	28
		WB2SIH	20	WØRSJ	41	K4RSV	5	9Ø2 MHz	
KO4MA	212	AF1T	18	K4QI	40	WB2AMU	4	K5QE	64
W1TR	204	KC2TN	16	9Ø2 MHz		KD7WPJ	4	N3NGE	36
AF1T	203	K6TSK	14	K1TEO	34	KL3JI	2	K3EOD	25
WA3NUF	192	W1TR	14	K3TUF	33	KDØEBT	1	N3YMS	19
N9CM	187	K1KG	14	WA3DRC	25	KC2UES	1	W3SZ	17
144 MHz		AC1J	14	WA3EHD	23	9Ø2 MHz		WB3IGR	12
WB2CUT	191	N1DPM	13	WA3SRU	22	W9SZ	2	N4JQQ	8
WA3NUF	171						2		
WB2SIH	164	WA3GFZ	11	WB2RVX	21	1296 MHz	_	N1JEZ	6
		W2BZY	10	K3IPM	18	WD5AGO	3	KBØHH	6
N3RG	145	WAØARM	10	WA2OMY	17	W9SZ	3	W8RU	2
K2DRH	122	WB2JAY	10	WØRSJ	15	Multioperator		NØGZ	2
AF1T	122	Single Operator Hig	h Power	KE2N	11	50 MHz		W6RKC	1
K3GNC	119	50 MHz		K3CB	11	K5QE	689	W1XM	1
KB3TC	105	W5PR	555	W3GAD	10	N3NGE	480	1296 MHz	
N8RA	100	K1TOL	495	W3PAW	9	W3SO -L	328	K5QE	54
K3JJZ	92	K1TEO	364	NØAKC	8	K2LIM -L	308	N3NGE	46
W3ICC	91								
WA3GFZ	89	WD4MGB	359	KC6ZWT	8	W4NH -L	290	K3EOD	27
		K3IPM	309	W3HMS	8	N4QV	278	W3SZ	24
KA3HED	85	N7CW	307	WØGHZ	8	K3EOD	243	N3YMS	14
W3EKT	73	K3TUF	264	WA3PTV	8	K1JT -L	240	N4JQQ	10
K1KG	73	K3ZO	248	1296 MHz		W3UR	237	N1JEZ	9
222 MHz		K2HZN	231	K3TUF	42	W1QK -L	228	WB3IGR	7
WA3NUF	80	WD5K	228	K1TEO	42	W2JJ (WA2VUN, op) -L	215	W1XM	7
WB2SIH	57	W4VHF	226	WA3DRC	35	WY3P -L	207	W6YX	6
AF1T	54	KI4FIA	226	WB2RVX	24	W9RM -L	206	N2BJ	6
W3ICC	52	W2YX	225	W1ZC	24	KBØHH	172	KBØHH	6
N3RG	47								
KB1JEY	42	WØUC	222	WA3EHD	20	N1JEZ	160	WB1CMG	4
K2DRH	42	W6XI	220	WA2OMY	20	144 MHz		K1KC	3
		144 MHz		WØGHZ	20	N3NGE	384	W8RU	2
N3FD	39	K1TEO	297	K3IPM	18	K5QE	229	 L denotes Limited Multioperator 	
K3JJZ	37	KA1ZE	269	WØRSJ	17	K2LIM -L	215		
N4QWZ	35	W2KV	237	WA3RLT	15	W3SO -L	201		
WA3GFZ	34	K3TUF	200	N3ITT	15	K1JT -L	181		
N3ALN	32	WA2OMY	163	VA3ST	14	W1QK -L	163		
W3EKT	32	N2NC	151	WØZQ	14	K3EOD	157		
K3IUV	30	K3IPM	140	W3GAD	14	N3YMS	150		
KA3WXV	30	WZ1V	137	WØUC	14	W3SZ	101		
432 MHz	00				14				
WB2SIH	81	K3ZO	125	Single Operator Portable		W3HZU -L	89		
WA3NUF	78	W3TDF	124	50 MHz		КВЙНН	83		
		WA3EHD	116	N3AWS	137	KE1LI	82		
AF1T	63	W1RZF	112	WØPV	123	W9RM -L	75		
W3ICC	56	WA4GPM	104	N8XA	78	WB3IGR	75		
K2DRH	54	WA3DRC	96	K2UNK	44	N1JEZ	71		
N3RG	54	WA3SRU	95	WD5AGO	28	222 MHz			
K3GNC	50	W2BVH	95	WB2AMU	24	N3NGE	126		
K3JJZ	46	222 MHz		AE6GE	13	K5QE	106		
KC2TN	45	K1TEO	94	KDØEBT	10	K2LIM -L	68		
KB1JEY	41	KITLO	93	KL3JI	6	K3EOD	67		
N3FD	41				-				
N4QWZ	40	WA3SRU	59	KD7WPJ	5	W3SO -L	62		
VA3ZV		K3IPM	58	K4RSV	3	N3YMS	45		
	39	WA3DRC	55	WA1LEI	3	W3HZU -L	38		
K6MI	35	WA3EHD	50	144 MHz		W3SZ	37		
W1TR	35	N3ITT	47	N8XA	16	W1QK -L	32		
W3EKT	35	WB2RVX	42	W9SZ	15	KBØHH	32		
KB3TC	35	WA2OMY	40	AE6GE	14	K1JT -L	30		
9Ø2 MHz		K1TR	30	WB2AMU	11	WB3IGR	29		
WA3NUF	27	K4QI	29	WD5AGO	10	NIJEZ	25		
N3RG	18				6				
AF1T	17	WØRSJ	29	KL3JI	-	N9TF -L	23		
WA3GFZ	15	W3PAW	27	K4RSV	5	WY3P -L	22		
WB2SIH		W3GAD	27	KD7WPJ	5	432 MHz			
	15	N3RN	27	KØNR	5	N3NGE	187		
K2DRH	13	432 MHz		KC2UES	2	K5QE	135		
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2012 January VHF	 Sweepstakes 	s Results	Extended Versi	on LO		Page 14 of 15			

2012 January VHF Sweepstakes Results

Extended Version 1.0

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Mult Leaders	by Band	W6ZI	11	KN4SM	18	WB2AMU	11	N3NGE	31
		K6TSK	11	K8TQK	17	KDØEBT	6	K2LIM -L	30
Single Operator Low Po	ower	WAØARM	11	VA3ST	17	AE6GE	4	W3SO -L	25
50 MHz		W3EKT	11	WØUC	15	KL3JI	3	K5QE	24
N3LL	132	9Ø2 MHz		W4ZRZ	15	KD7WPJ	2	K3EOD	21
N4TWX	102	K2DRH	11	WA4GPM	14	WA1LEI	2	W9RM -L	16
WB2FKO	100	N4QWZ	10	K1TR	13	K4RSV	1	KBØHH	14
WJØF	90	WA3NUF	8	K8MD	13	144 MHz	•	N3YMS	14
NQ7R	89	K1KG	8	KG5MD	13	N8XA	11	W3HZU -L	13
WA7JTM	89								
K2DRH	87	AF1T	7	K3IPM	13	W9SZ	9	N9TF -L	11
		WB2SIH	7	K3CB	12	WB2AMU	4	N4JQQ	11
NØLL	83	N1DPM	7	K9EA	12	WD5AGO	4	WY3P -L	11
KO4MA	71	N3RG	5	W3PAW	12	AE6GE	4	N1JEZ	11
N8CJK	70	WA3GFZ	5	432 MHz		KL3JI	3	WB3IGR	10
N4BP	67	WB2JAY	5	K1TEO	34	KØNR	3	KØSIX -L	10
K3TW	65	VE3SMA	4	K3TUF	30	KDØEBT	2	432 MHz	
N9CM	64	KF8QL	4	K4QI	26	KD7WPJ	2	N3NGE	33
N7IR	60	NJALN	3	W4ZRZ	21	KC2UES	1	K5QE	32
W6BXQ	59	WB5ZDP	3	VA3ST	19	K4RSV	1	W3SO -L	27
WB2REM	59	N9LB	3	KN4SM	18	222 MHz	I	K2LIM -L	27
144 MHz							6		
K2DRH	54	VE2JWH	3	WØUC	16	W9SZ	6	K3EOD	19
N4QWZ	31	K3JJZ	3	K9EA	15	AE6GE	3	K1JT -L	18
K8MR	26	1296 MHz		K3CB	15	N8XA	2	KBØHH	16
		K2DRH	13	WZ1V	14	WB2AMU	2	W9RM -L	16
N3RG	24	K1KG	8	KG5MD	14	K4RSV	1	N3YMS	14
N8RA	23	N4QWZ	8	WA4GPM	14	KL3JI	1	WY3P -L	13
WD5IYT	22	N3RG	7	K8MD	13	432 MHz		N4JQQ	12
WB2SIH	22	N1DPM	7	WA2OMY	13	W9SZ	5	N9TF -L	11
KX4R	22	W2BZY	6	K1TR	13	AE6GE	4	W3HZU -L	11
WA3NUF	22	WB5ZDP	6	K3IPM	13	KØNR	3	W4NH -L	11
KA3HED	21	K6TSK	6	WØGHZ	13	WB2AMU	3	KØSIX -L	11
VA3ZV	21	AC1J	6	W9GA	13	WD5AGO	3	N1JEZ	11
K1KG	21				15				
AF1T	21	WB2JAY	6	9Ø2 MHz		KD7WPJ	2	NØLD -L	11
	21	WB2SIH	6	K1TEO	15	K4RSV	1	9Ø2 MHz	
VE3SMA		W1TR	5	K3TUF	8	KC2UES	1	K5QE	16
VE3ZV	21	WA3NUF	5	W4ZRZ	7	KDØEBT	1	N3NGE	9
N9LB	21	AF1T	5	NØAKC	7	KL3JI	1	N4JQQ	8
222 MHz		WAØARM	5	W5LUA	6	9Ø2 MHz		K3EOD	8
K2DRH	27	Single Operator Hig	h Power	WA3DRC	6	W9SZ	2	N3YMS	7
N4QWZ	21	50 MHz		WA3EHD	6	1296 MHz		КВЙНН	6
WA3NUF	18	W5PR	145	WØGHZ	6	W9SZ	3	N1JEZ	6
WB2SIH	17	N7CW	124	WA3PTV	6	WD5AGO	1	WB3IGR	6
AF1T	17	K1TOL	114	WA3SRU	5	Multioperator	I I	W3SZ	5
	16		91					W1XM	
N3RG	10	WD5K		W3HMS	5	50 MHz	450	W IXM W8RU	3
N3RG	1/		85	K3IPM	5	K5QE	158		2
K8MR	14	WD4MGB							-
K8MR VE3SMA	14	W6XI	85	WØZQ	5	W4NH -L	95	NØGZ	2
K8MR VE3SMA K1KG	14 13	W6XI WØUC	85 83	WØRSJ	5	N4QV	87	NØGZ W6RKC	2 1
K8MR VE3SMA K1KG N9LB	14 13 12	W6XI	85		5 5			NØGZ	
K8MR VE3SMA K1KG N9LB N3ALN	14 13 12 12	W6XI WØUC	85 83	WØRSJ	5	N4QV	87	NØGZ W6RKC	
K8MR VE3SMA K1KG N9LB N3ALN KX4R	14 13 12 12 12	W6XI WØUC W3XO/5	85 83 80	WØRSJ W9GA	5 5	N4QV W9RM -L	87 82	NØGZ W6RKC 1296 MHz	1
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT	14 13 12 12	W6XI WØUC W3XO/5 KI4FIA K1TEO	85 83 80 79 70	WØRSJ W9GA W3PAW K3CB	5 5 5	N4QV W9RM -L KBØHH W3SO -L	87 82 82 75	NØGZ W6RKC 1296 MHz K5QE N3NGE	1 14 10
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO	14 13 12 12 12 12 11 11	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T	85 83 80 79 70 69	WØRSJ W9GA W3PAW K3CB 1296 MHz	5 5 5 5	N4QV W9RM -L KBØHH W3SO -L N3NGE	87 82 82 75 74	NØGZ W6RKC 1296 MHz K50E N3NGE N4JQQ	1 14
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO	14 13 12 12 12 12 11	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX	85 83 80 79 70 69 68	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO	5 5 5 5	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L	87 82 82 75 74 68	NØGZ W6RKC 1296 MHz K5QE N3NGE N4JQQ K3EOD	1 14 10 7 7
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT	14 13 12 12 12 12 11 11	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF	85 83 79 70 69 68 67	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF	5 5 5 5 12 11	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L	87 82 82 75 74 68 60	NØGZ W6RKC 1296 MHz KSQE N3NGE N4JQQ K3EOD N3YMS	1 14 10 7 7 6
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3ICC WA3GFZ	14 13 12 12 12 12 11 11 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI	85 83 80 79 70 69 68 68 67 66	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC	5 5 5 12 11 10	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L	87 82 75 74 68 60 59	NØGZ W6RKC 1296 MHz K5GE N3NGE N4JQQ K3EOD N3YMS WB3IGR	1 14 10 7 7 6 6
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3ICC WA3GFZ WB5ZDP	14 13 12 12 12 12 11 11 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS	85 83 79 70 69 68 67	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC	5 5 5 12 11 10 9	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L	87 82 75 74 68 60 59 58	NØGZ W6RKC 1296 MHz K5QE N3NGE N4JQQ K3EOD N3YMS WB3IGR NJEZ	1 14 10 7 6 6 6
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3ICC WA3GFZ WB5ZDP WB52JAY	14 13 12 12 12 11 11 9 9 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS 144 MHz	85 83 80 79 70 69 68 68 67 66 66 66	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC VA3ST	5 5 5 12 11 10 9 8	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L NØGZ	87 82 82 75 74 68 60 59 58 58 56	NØGZ W6RKC 1296 MHz KSQE N3NGE N4JQQ K3EOD N3YMS WB3IGR N1JEZ KBØHH	1 14 10 7 7 6 6 6 6 6
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3EKT K2QO W3ICC WA3GFZ WB5ZDP WB5ZDP WB2JAY N9DG	14 13 12 12 12 11 11 9 9 9 9 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS 144 MHz KA1ZE	85 83 80 79 70 69 68 67 66 66 66 66	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC VA3ST WØGHZ	5 5 5 12 11 10 9 8 8	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L NØGZ K1KC	87 82 82 75 74 68 60 59 58 56 56 55	NØGZ W6RKC 1296 MHz K50E N3NGE N4JQQ K3EOD N3YMS WB3IGR N1JEZ KBØHH W3SZ	1 14 10 7 6 6 6 6 6 5
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3ICC WA3GFZ WB5ZDP WB2JAY N9DG WB8TFV	14 13 12 12 12 11 11 9 9 9 9 9 9 9 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS 144 MHz KA1ZE K3TUF	85 83 80 79 70 69 68 67 66 66 66 67 44	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC VA3ST WØGHZ W4ZRZ	5 5 5 12 11 10 9 8 8 8 8	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L NØGZ K1KC W3UR	87 82 82 75 74 68 60 59 58 58 56 55 49	NØGZ W6RKC 1296 MHz K5QE N3NGE N4JQQ K3EOD N3YMS WB3IGR N1JEZ KBØHH W3SZ W6YX	1 14 10 7 6 6 6 6 6 5 3
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3ICC WA3GFZ WB5ZDP WB5ZDP WB52JAY N9DG WB8TFV N1DPM	14 13 12 12 12 11 11 9 9 9 9 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS 144 MHz KA1ZE K3TUF K1TEO	85 83 80 79 70 69 68 67 66 66 66 67 44 41	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC VA3ST WØGHZ W4ZRZ WØZQ	5 5 5 12 11 10 9 8 8 8 8 8 7	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L NØGZ K1KC W3UR N1JEZ	87 82 82 75 74 68 60 59 58 56 56 55	NØGZ W6RKC 1296 MHz K5QE N3NGE N4JQQ K3EOD N3YMS WB3IGR N1JEZ KBØHH W3SZ W6YX N2BJ	1 14 10 7 6 6 6 6 5 3 3 3
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3EKT K2QO W3ICC WA3GFZ WB5ZDP WB5ZDP WB2JAY N9DG WB8TFV N1DPM 432 MHz	14 13 12 12 12 11 11 9 9 9 9 9 9 9 9 9 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS 144 MHz KA1ZE K3TUF	85 83 80 79 70 69 68 67 66 66 66 67 44	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC VA3ST WØGHZ W4ZRZ	5 5 5 12 11 10 9 8 8 8 8	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L NØGZ K1KC W3UR	87 82 82 75 74 68 60 59 58 58 56 55 49	NØGZ W6RKC 1296 MHz K5QE N3NGE N4JQQ K3EOD N3YMS WB3IGR N1JEZ KBØHH W3SZ W6YX	1 14 10 7 6 6 6 6 6 5 3
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3ICC WA3GFZ WB5ZDP WB2JAY N9DG WB8TFV N1DPM 432 MHz K2DRH	14 13 12 12 12 11 11 11 9 9 9 9 9 9 9 9 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS 144 MHz KA1ZE K3TUF K1TEO	85 83 80 79 70 69 68 67 66 66 66 67 44 41	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC VA3ST WØGHZ W4ZRZ WØZQ	5 5 5 12 11 10 9 8 8 8 8 8 7	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L NØGZ K1KC W3UR N1JEZ	87 82 82 75 74 68 60 59 58 58 56 55 49	NØGZ W6RKC 1296 MHz K5QE N3NGE N4JQQ K3EOD N3YMS WB3IGR N1JEZ KBØHH W3SZ W6YX N2BJ	1 14 10 7 6 6 6 6 5 3 3 3
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3ICC WA3GFZ WB5ZDP WB5ZDP WB5ZJAY N9DG WB8TFV N1DPM 432 MHz K2DRH N4QWZ	14 13 12 12 12 11 11 9 9 9 9 9 9 9 9 9 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS 144 MHz KA1ZE K3TUF K1TEO W44GPM	85 83 80 79 70 69 68 66 66 66 66 67 44 41 37	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC VA3ST WØGHZ W42RZ WØZQ K3CB	5 5 5 12 11 10 9 8 8 8 8 7 6	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L NØGZ K1KC W3UR N1JEZ 144 MHz	87 82 82 75 74 68 60 59 58 56 55 56 55 49 48	NØGZ W6RKC 1296 MHz K50E N3NGE N4JQQ K3EOD N3YMS WB3IGR N1JEZ KBØHH W3SZ W6YX N2BJ K1KC	1 14 10 7 7 6 6 6 6 5 3 3 3 3 3
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3ICC WA3GFZ WB5ZDP WB2JAY N9DG WB8TFV N1DPM 432 MHz K2DRH	14 13 12 12 12 11 11 11 9 9 9 9 9 9 9 9 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS 144 MHz KA1ZE K3TUF K1TEO WA4GPM WØUC W2KV	85 83 80 79 70 69 68 67 66 66 66 67 44 41 37 35 35 34	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC VA3ST WØGHZ W4ZRZ WØZQ K3CB W5LUA N3ITT	5 5 5 12 11 10 9 8 8 8 8 7 6 6 5	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L NØGZ K1KC W3UR N1JEZ 144 MHz K5QE W3SO -L	87 82 82 75 74 68 60 59 58 56 55 55 49 48 78 47	NØGZ W6RKC 1296 MHz K5QE N3NGE N4JQQ K3EOD N3YMS WB3IGR N1JEZ KBØHH W3SZ W6YX N2BJ K1KC W1XM WB1CMG	1 14 10 7 7 6 6 6 6 5 3 3 3 3 3 3 3 3
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3ICC WA3GFZ WB5ZDP WB2JAY N9DG WB8TFV N1DPM 432 MHz K2DRH N4QWZ VA3ZV WA3NUF	14 13 12 12 12 11 11 11 9 9 9 9 9 9 9 9 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS 144 MHz KA1ZE K3TUF K1TEO WA4GPM WØUC W2KV K4QI	85 83 80 79 70 69 68 67 66 66 66 67 44 41 37 35	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC VA3ST WØGHZ W4ZRZ W4ZRZ W4ZRZ W4ZRZ W43CB W5LUA N3ITT NØAKC	5 5 5 12 11 10 9 8 8 8 7 6 6	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L NØGZ K1KC W3UR N1JEZ 144 MHz K5QE W3SO -L N3NGE	87 82 82 75 74 68 60 59 58 56 55 49 48 78	NØGZ W6RKC 1296 MHz K50E N3NGE N4JQQ K3EOD N3YMS WB3IGR N1JEZ KBØHH W3SZ W6YX N2BJ K1KC W1XM WB1CMG W8RU	1 14 10 7 6 6 6 5 3 3 3 3 3 2 2
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3ICC WA3GFZ WB5ZDP WB7 W36KT WB5ZDP WB5ZDP WB7 W36KT WB5ZDP WB7 W36KT WB5ZDP WB7 W36KT WB7 W36KT WB7 W36KT WB5ZDP WB7 W36KT WB7 W36KT WB7 W36KT WB7 W36KT WB7 W36KT WB7 W36KT WB7 W36KT WB7 W36KT WB7 W36KT WB7 W7 W7 W7 W7 W7 W7 W7 W7 W7 W7 W7 W7 W7	14 13 12 12 12 11 11 9 9 9 9 9 9 9 9 9 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS 144 MHz KA1ZE K3TUF K1TEO WA4GPM WØUC W2KV K4QI K9EA	85 83 80 79 70 69 68 67 66 66 66 67 44 41 37 35 34 33 34 30	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC VA3ST WØGHZ W4ZRZ WØZQ K3CB W5LUA N3ITT NØAKC WA3DRC	5 5 5 12 11 10 9 8 8 8 7 6 6 5 5 5	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L NØGZ K1KC W3UR N1JEZ 144 MHz K5QE W3SO -L N3NGE K2LIM -L	87 82 82 75 74 68 60 59 58 56 55 55 49 48 78 47 44 43	NØGZ W6RKC 1296 MHz K5QE N3NGE N4JQQ K3EOD N3YMS WB3IGR N1JEZ KBØHH W3SZ W6YX N2BJ K1KC W1XM WB1CMG	1 14 10 7 6 6 6 5 3 3 3 3 3 2 2
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3ICC WA3GFZ WB5ZDP WB2JAY N9DG WB8TFV N1DPM 432 MHz K2DRH N4QWZ VA3ZV WA3NUF	14 13 12 12 12 11 11 11 9 9 9 9 9 9 9 9 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS 144 MHz K41ZE K3TUF K1TEO WA4GPM WØUC W2KV K4QI K9EA K8TQK	85 83 80 79 70 69 68 67 66 66 66 66 67 44 41 37 35 34 34 34 30 30	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC VA3ST WØGHZ W4ZRZ WØZQ K3CB W5LUA N3ITT NØAKC WA3DRC K4QI	5 5 5 12 11 10 9 8 8 8 7 6 6 5 5 5 5 5	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L NØGZ K1KC W3UR N1JEZ 144 MHz K5QE W3SO -L N3NGE K2LIM -L W9RM -L	87 82 82 75 74 68 60 59 58 56 55 49 48 78 47 44 43 34	NØGZ W6RKC 1296 MHz K50E N3NGE N4JQQ K3EOD N3YMS WB3IGR N1JEZ KBØHH W3SZ W6YX N2BJ K1KC W1XM WB1CMG W8RU	1 14 10 7 6 6 6 5 3 3 3 3 3 2 2
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3ICC WA3GFZ WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZH K2DRH N4QWZ VA3ZV WA3NUF WB2SIH WD5IYT	14 13 12 12 12 11 11 11 9 9 9 9 9 9 9 9 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS 144 MHz KA1ZE K3TUF K1TEO WA4GPM WØUC W2KV K4QI K9EA K8TQK VA3ST	85 83 80 79 70 69 68 66 66 66 66 67 44 41 37 35 34 34 30 30 30	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC VA3ST WØGHZ W4ZRZ W4ZRZ W4ZRZ W4ZRZ W4ZRZ W4ZRZ W4ZRZ W4ZRZ W4ZRZ W4ZRZ W43DR K3CB W5LUA N3ITT NØAKC WA3DRC K4QI KEZN	5 5 5 12 11 10 9 8 8 8 7 6 6 5 5 5 5 5 5 5	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L NØGZ K1KC W3UR N1JEZ 144 MHz K5OE W3SO -L N3NGE K2LIM -L W9RM -L K1JT -L	87 82 82 75 74 68 60 59 58 56 55 49 48 78 47 44 43 34 33	NØGZ W6RKC 1296 MHz K50E N3NGE N4JQQ K3EOD N3YMS WB3IGR N1JEZ KBØHH W3SZ W6YX N2BJ K1KC W1XM WB1CMG W8RU	1 14 10 7 6 6 6 5 3 3 3 3 3 2 2
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3ICC WA3GFZ WB5ZDP WB2JAY WB5ZDP WB2JAY N9DG WB8TFV N1DPM 432 MHz K2DRH N4QWZ VA3ZV WA3NUF WB2SIH WD5IYT AF1T	14 13 12 12 12 11 11 11 9 9 9 9 9 9 9 9 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS 144 MHz KA1ZE K3TUF K1TEO WA4GPM WØUC W2KV K4QI K9EA K8TQK VA3ST KN4SM	85 83 80 79 70 69 68 67 66 66 66 67 44 41 37 35 34 30 30 30 30 28	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC VA3ST WØGHZ W4ZRZ WØZQ K3CB W5LUA N3ITT NØAKC WA3DRC K4QI KE2N W3PAW	5 5 5 12 11 10 9 8 8 8 7 6 6 5 5 5 5 5 5 5 5 5 5 5 5	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L NØGZ K1KC W3UR N1JEZ 144 MHz K5QE W3SO -L N3NGE K2LIM -L W9RM -L K1JT -L KBØHH	87 82 82 75 74 68 60 59 58 56 55 49 48 47 48 78 47 44 43 34 33 24	NØGZ W6RKC 1296 MHz K50E N3NGE N4JQQ K3EOD N3YMS WB3IGR N1JEZ KBØHH W3SZ W6YX N2BJ K1KC W1XM WB1CMG W8RU	1 14 10 7 6 6 6 5 3 3 3 3 3 2 2
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3ICC WA3GFZ WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZJAY N9DG WB8TFV N1DPM 432 MHz K2DRH N4QWZ VA3ZV WA3NUF WB2SIH WD5IYT AF1T N3RG	14 13 12 12 12 11 11 11 9 9 9 9 9 9 9 9 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS 144 MHz KA1ZE K3TUF K1TEO WA4GPM WØUC W2KV K4QI K9EA K8TQK VA3ST KN4SM K8MD	85 83 80 79 70 69 68 67 66 66 66 66 67 44 41 37 35 34 34 34 30 30 30 30 30 28 27	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC VA3ST WØGHZ W4ZRZ WØZQ K3CB W5LUA N3ITT NØAKC WA3DRC K4QI KEZN W3PAW WØRSJ	5 5 5 12 11 10 9 8 8 8 7 6 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L NØGZ K1KC W3UR N1JEZ 144 MHz K5QE W3SO -L N3NGE K2LIM -L W9RM -L K1JT -L KBØHH N3YMS	87 82 82 75 74 68 60 59 58 56 55 49 48 78 47 44 43 34 33 24 24	NØGZ W6RKC 1296 MHz K50E N3NGE N4JQQ K3EOD N3YMS WB3IGR N1JEZ KBØHH W3SZ W6YX N2BJ K1KC W1XM WB1CMG W8RU	1 14 10 7 6 6 6 5 3 3 3 3 3 2 2
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3ICC WA3GFZ WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZAY N1DPM 432 MHZ K2DRH N4QWZ VA3ZV WA3NUF WB2SIH WD5IYT AF1T N3RG KX4R	14 13 12 12 12 11 11 9 9 9 9 9 9 9 9 9 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS 144 MHz KA1ZE K3TUF K1TEO WA4GPM WØUC W2KV K4QI K9EA K8TQK VA3ST KN4SM K8MD W4ZRZ	85 83 80 79 70 69 68 66 66 66 67 44 41 37 35 34 34 30 30 30 30 28 27 27	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC VA3ST WØGHZ W4ZRZ WØZQ K3CB W5LUA N3ITT NØAKC WA3DRC K4OI KE2N W3PAW WØRSJ K2HZN	5 5 5 12 11 10 9 8 8 8 7 6 6 5 5 5 5 5 5 5 5 5 5 5 5	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L NØGZ K1KC W3UR N1JEZ 144 MHz K50E W3SO -L N3NGE K2LIM -L W9RM -L K1JT -L KBØHH N3YMS K3EOD	87 82 82 75 74 68 60 59 58 56 55 49 48 78 47 44 43 34 33 24 22 3	NØGZ W6RKC 1296 MHz K50E N3NGE N4JQQ K3EOD N3YMS WB3IGR N1JEZ KBØHH W3SZ W6YX N2BJ K1KC W1XM WB1CMG W8RU	1 14 10 7 6 6 6 5 3 3 3 3 3 2 2
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3GCC WA3GFZ WB5ZDP WB2JAY WB5ZDP WB2JAY N9DG WB8TFV N1DPM 432 MHz K2DRH N4QWZ VA3ZV WA3NUF WB2SIH WD5JYT AF1T N3RG KX4R N9LB	14 13 12 12 12 11 11 9 9 9 9 9 9 9 9 9 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS 144 MHz KA1ZE K3TUF K1TEO WA4GPM WØUC W2KV K4QI K9EA K8TQK VA3ST KN4SM K8MD W4ZRZ KG5MD	85 83 80 79 70 69 68 67 66 66 67 44 41 37 35 34 30 30 30 30 30 28 27 27 26	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC VA3ST WØGHZ W4ZRZ WØZQ K3CB W5LUA N3ITT NØAKC WA3DRC K4OI KE2N W3PAW WØRSJ K2HZN Single Operator Portable	5 5 5 12 11 10 9 8 8 8 7 6 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L NØGZ K1KC W3UR N1JEZ 144 MHz K5QE W3SO -L N3NGE K2LIM -L W9RM -L K1JT -L KBØHH N3YMS K3EOD N1JEZ	87 82 82 75 74 68 60 59 58 56 55 49 48 47 48 78 47 44 43 34 33 24 24 23 21	NØGZ W6RKC 1296 MHz K50E N3NGE N4JQQ K3EOD N3YMS WB3IGR N1JEZ KBØHH W3SZ W6YX N2BJ K1KC W1XM WB1CMG W8RU	1 14 10 7 6 6 6 5 3 3 3 3 3 2 2
K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3ICC WA3GFZ WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZJAY N9DG WB8TFV N1DPM 432 MHz K2DRH N4QWZ VA3ZV WA3RH WD5IYT AF1T N3RG KX4R N9LB K8MR	14 13 12 12 12 11 11 11 9 9 9 9 9 9 9 9 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS 144 MHz KA1ZE K3TUF K1TEO WA4GPM WØUC W2KV K4QI K9EA K8TQK VA3ST KN4SM K8TQK VA3ST KN4SM K8MD W4ZRZ KG5MD W9JN	85 83 80 79 70 69 68 67 66 66 66 67 44 41 37 35 34 34 34 30 30 30 30 30 30 28 27 27 27 27 26 25	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC VA3ST WØGHZ W4ZRZ WØZQ K3CB W5LUA N3ITT NØAKC WA3DRC K4QI KE2N W3PAW WØRSJ K2HZN Single Operator Portable 50 MHz	5 5 5 12 11 10 9 8 8 8 7 6 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L NØGZ K1KC W3UR N1JEZ 144 MHz K5QE W3SO -L N3NGE K2LIM -L W9RM -L K1JT -L KBØHH N3YMS K3EOD N1JEZ WA4DYD -L	87 82 82 75 74 68 60 59 58 56 55 49 48 78 47 44 43 34 33 24 24 23 21 20	NØGZ W6RKC 1296 MHz K50E N3NGE N4JQQ K3EOD N3YMS WB3IGR N1JEZ KBØHH W3SZ W6YX N2BJ K1KC W1XM WB1CMG W8RU	1 14 10 7 6 6 6 5 3 3 3 3 3 2 2
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K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3ICC WA3GFZ WB5ZDP WB2JAY WB5ZDP WB2JAY N9DG WB8TFV N1DPM 432 MHz K2DRH N4QWZ VA3ZV WA3NUF WB2SIH WD5JYT AF1T N3RG KX4R N9LB K8MR VE3SMA N3ALN	14 13 12 12 12 11 11 9 9 9 9 9 9 9 9 9 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS 144 MHz KA1ZE K3TUF K1TEO WA4GPM WØUC W2KV K4QI K9EA K8TQK VA3ST KN4SM K8MD W4ZRZ KG5MD W9JN W8MIL 222 MHz	85 83 80 79 70 69 68 67 66 66 67 44 41 37 35 34 30 30 30 30 28 27 27 26 25 25	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC VA3ST WØGHZ W4ZRZ WØZQ K3CB W5LUA N3ITT NØAKC WA3DRC K4QI KE2N W3PAW WØRSJ K2HZN Single Operator Portable 50 MHz N34NS N8XA	5 5 5 12 11 10 9 8 8 8 7 6 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L NØGZ K1KC W3UR N1JEZ 144 MHz K5QE W3SO -L N3NGE K2LIM -L W9RM -L K1JT -L KBØHH N3YMS K3EOD N1JEZ WA4DYD -L K1KC W1QK -L	87 82 82 75 74 68 60 59 58 56 55 49 48 47 48 78 47 44 43 34 33 24 24 23 21 20 19 19	NØGZ W6RKC 1296 MHz K50E N3NGE N4JQQ K3EOD N3YMS WB3IGR N1JEZ KBØHH W3SZ W6YX N2BJ K1KC W1XM WB1CMG W8RU	1 14 10 7 6 6 6 5 3 3 3 3 3 2 2
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K8MR VE3SMA K1KG N9LB N3ALN KX4R W3EKT K2QO W3ICC WA3GFZ WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZDP WB5ZNT X42 X42 X42 X43 X43 X43 X43 X48 N9LB K8MR VE3SMA N3ALN K1KG N9DG	14 13 12 12 12 11 11 11 9 9 9 9 9 9 9 9 9 9 9	W6XI WØUC W3XO/5 KI4FIA K1TEO ND5T W2YX N9HF K4QI W4AS 144 MHz KA1ZE K3TUF K1TEO WA4GPM WØUC W2KV K4QI K9EA K8TQK VA3ST KN4SM K8MD W4ZRZ KG5MD W9JN W8MIL 222 MHz K1TEO K3TUF K4QI	85 83 80 79 70 69 68 67 66 66 67 44 41 37 35 34 34 30 30 30 30 28 27 27 27 26 25 25 25 34 28	WØRSJ W9GA W3PAW K3CB 1296 MHz K1TEO K3TUF WØUC W1ZC VA3ST WØGHZ W4ZRZ WØZQ K3CB W5LUA N3ITT NØAKC WA3DRC K4QI KE2N W3PAW WØRSJ K2HZN Single Operator Portable 50 MHz N3AWS N8XA WØPV WD5AGO K2UNK	5 5 5 12 11 10 9 8 8 8 7 6 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	N4QV W9RM -L KBØHH W3SO -L N3NGE K2LIM -L N4BRF -L WY3P -L KØSIX -L NØGZ K1KC W3UR N1JEZ 144 MHz K5QE W3SO -L N3NGE K2LIM -L W9RM -L K1JT -L KBØHH N3YMS K3EOD N1JEZ WA4DYD -L K1KC W1QK -L WØVB -L W4NH -L	87 82 82 75 74 68 60 59 58 56 55 49 48 78 47 44 43 34 33 24 24 23 21 20 19 19 18	NØGZ W6RKC 1296 MHz K50E N3NGE N4JQQ K3EOD N3YMS WB3IGR N1JEZ KBØHH W3SZ W6YX N2BJ K1KC W1XM WB1CMG W8RU	1 14 10 7 6 6 6 5 3 3 3 3 3 2 2

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