ARRL 2020 January VHF Contest Full Results

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Despite poor weather across much of the Midwest and Northeast as well as flat propagation, 942 logs were submitted, a record for this century!

The 2020 edition of the January VHF contest was held January 18, 19, and 20, 2020. Despite icy and snowy weather across the upper Midwest and Northeast, 942 logs were submitted, including 4 check logs. This is up from the 918 submitted in 2019, and shows continued contest growth over the past 3 years. It is the highest number of logs submitted for the January VHF Contest in this century!

Weather was poor for many during the contest with icing and blizzard like conditions across the Northeast and Midwest. Here, VA3ELE/R braves the storm. (Photo from VA3ELE)

Despite the poor weather, which usually holds down rover activity, there were 90 rover entries in all the Rover categories, the most since 2004's 93. The increase in Rover activity seems to stem in part from increased social media activity among rovers on several levels and greater local club activity supporting rovers in several locales.

Looming over the contest was pending FCC action to reassign portions of the 3456 MHz band, including that portion which contains the weak signal calling frequency, to commercial use. Many took this contest opportunity to get on 3456 MHz to show that there is activity on the band and, perhaps, have a last hurrah before retuning all those filters and LOs in their transverters.

There is no doubt the use of WSJT-X has revolutionized VHF contesting. Widespread adoption of the WSJT-X modes FT8 and FT4 appears to be responsible for a significant part of the increase in contest activity. It is relatively straightforward to make very weak signal QSOs with these modes, activity is concentrated over a narrow frequency band, and the prepared Cabrillo log WSJT-X generates eliminates one of the hurdles in submitting a log. The WSJT-X meteor scatter mode MSK144 has made it straightforward for modest six-meter and well-equipped two-meter stations to increase their grid totals on otherwise dead bands. JT65 and MAP65 allow stations to make EME QSOs in significant numbers to accumulate 2M and up grid totals unheard of without digital assistance.

In January 1958, twin brothers K2ITQ (SK) and K2ITP operating as K2ITQ set the VHF contesting world on its ear by making 507 QSOs - a record number up to that time in VHF contesting. Although there was increased F2 skip during that contest, most of those contacts were made by weak signal scatter modes; ionoscatter, meteor scatter, and troposcatter. Never before had a station worked the scatter modes on a VHF contest so hard with such success. K2ITP went on to publish a QST article in December 1958 detailing how to work VHF scatter and started a revolution in VHF contesting. That article contains good advice to follow 61+ years later.

K2ITQ, along with brother K2ITP (shown above), set a record for the number of QSOs made in the 1958 January VHF Sweepstakes. K2ITP, now K1JT, continues to contribute to the weak signal VHF contesting community with his WSJT-x suite of weak signal software. (Photo from QST files)

Since then, scatter has been a major part of VHF contesting. It has been helped along the way with various WSJT releases starting in 2001 bringing the scatter modes to anyone with a modestly equipped VHF station and some patience. In July 2017 the FT8 mode was released which allowed very quick QSOs over marginal paths. K2ITP, now K1JT, as the author of WSJT and one of the authors of the FT8 and FT4 modes is still making a significant contribution to VHF contesting more than 60 years later!

In the milder climes, there was a lot of activity in the Single Operator Portable (SOP) category. This was driven in large part by synergistic Summits On The Air (SOTA) activity. Their use of low power handie-talkies has really demonstrated how effective even FM can be from a mountaintop with access to large populations of VHF/UHF operators. The January contest is an excellent time for SOP operations from the Southwest, where temperatures are often too high in June and September for comfortable operation

The Winners

Single Operator FM (SOFM)

KG6IYN significantly improved his 2019 score by beating out perennial SOFM powerhouse KM4KMU to take top honors in the SOFM category and setting a new SOFM national record for the January VHF contest.

Single Operator, FM Only	
KG6IYN	11,060
KM4KMU	8,308
K2NUD	1,120
WB9WOZ	996
WG4I	682
KI7LTT	510
W6IA	460
K3RW	395
KJ7AXA	376
KØPHP	297

The mild weather in San Diego gave him a bit of an advantage over KM4KMU who, due to weather, had to shift his planned operating location at the last minute to the appropriately named Freezeland Road.

KM4KMU tilts his Yagis 45 degrees to be able to work both vertically polarized FM stations and to take advantage of the astute SSB/CW ops who can usually switch to FM, but are not always able to switch antenna polarization. (Photo KM4KMU)

There was a close race for third place, with K2NUD edging out WB9WOZ who was less than 100 points behind in fourth. WG4I finished fifth.

While the scores submitted in the SOFM category drop off fast past the first few slots, it is an introduction to contesting for many. It also allows contesters who are under conditions where they cannot compete effectively with their home station to take part using a handie-talkie or mobile rig. Recently, FM contesting has gotten a boost in participation and bands from SOTA operators who often carry handie-talkies for points on bands where they don't have traditional SSB or CW gear. Arizona saw a lot of 1296 and 222 MHz FM activity from SOTA operators, to the point where the majority of QSOs in the section were made on 1296 FM rather than the traditional SSB and CW modes.

Single Operator Portable

K7ATN, operating seven bands, took first honors displacing WA7JTM from his usual top spot in this category. It was a contrast in styles; K7ATN did a drive-up operation from Bald Peak in Oregon and WA7JTM did a walk-up operation, carrying up all 45 pounds of his 6-band station, including Yagis for each band, on his on his back. There is probably no other category with such a difference in the station and operating style in the top scorers.

Single Operator, Portable	
K7ATN	6,358
WA7JTM	5,375
W7JET	4,378
K7TAB	3,520
AA4Q	2,261
AA6XA	1,160
K9AA (KO9A, op)	1,080
N2YTF	782
WB2AMU	418
NV4B	195

W7JET, operating from Dromedary Peak in Arizona, also backpacking all his equipment up the peak, finished a solid third. K7TAB finished fourth and AA4Q finished fifth.

W7JET hiked to the top of Dromedary Peak in Arizona to operate the contest and to activate a SOTA peak with this compact setup. (W7JET photo)

The Arizona SOTA group turned out 13 operators in this category, providing good activity for many VHF/UHF contesters in Arizona and surrounding states. Many of the Arizona SOTA operators carry handie-talkies for those bands where they do not have SSB/CW capability, and as a result, normally low activity bands such as 1296 MHz had FM congestion on or near the calling frequency!

SOTA operations during the January VHF Contest are not strictly the purview of those who operate in the warmer climes. N2TYF operated from SOTA summit W2/NJ-009 with a station including HTs on 146, 222, 446, 902, and 1.2 GHz for a nice six-band SOP operation. N2TYF combined working FM on the upper bands and FT8 on 6 and 2 meters to reach a 7th place finish in the SOP category. (Photo courtesy N2TYF)

Single Operator 3 Band (SO3B)

KO9A took top honors in the Single Operator Three Band category, running away with the category in his auspicious first entry in this category. Unlike other ops, the weather worked to Jim's advantage when scheduled visitors had their flight canceled due to weather. Jim usually relies on meteors to fill in the grids, but he reported that the meteors this year were the worst he has seen in ten years for a January Contest.

Single Operator, 3 Band	
KO9A	14,628
W1QK	8,960
K1HC	6,384
N7EPD	5,600
VE3SST	5,292
N4HUF	4,968
AI3Z	4,935
N7IR	3,480
WA8TTM	2,886
XE2CQ	2,886

W1QK took second with a good effort. K1HC parlayed intense FT8 activity into a third-place finish. N7EPD finished fourth with a solid effort across the bands as well as turning in a check log (not scored) for 222 MHz. That is a good reminder that if you are operating in one of the band-limited categories, you can work on other bands and submit a check log to provide QSOs and multipliers to others, but those QSOs will not count in your score. VE3SST finished fifth, with a good showing, with less than 1000 points separating third from fifth place.

Although the ARRL VHF Contests are generally considered domestic contests, DX entries are welcome. With the exception of VE3, DX logs are usually rare in January. XE2CQ finished 10th in SO3B, providing many in with a rare taste of DX in January.

Single Operator, Low Power (SOLP)

W6YEP, operating from W6TV, took first place in a category that is usually dominated by entries from the Northeast. W6TV accomplished this feat with a concentrated effort on 11 bands, all the way up to 24GHz and concerted tracking of rovers operating from six grids similarly equipped with 11 bands. Those microwave QSO points really add up and if they can be multiplied by several rover visits to many grids, it really adds to the score.

Single Operator, Low Power	
W6TV (W6YEP, op)	73,710
N2WK	66,445
AF1T	58,740
WA3NUF	56,376
VE3DS	30,876
WA3GFZ	27,216
KR1ST	26,220
N8RA	21,910
N7VD	21,840
N2OA	15,050

N2WK was a close second, but the poor weather in the Northeast kept many of the rovers at home, hence limiting the number of grids that could be worked, especially on the higher bands. He used FT8 and MSK144 to fill in grid multipliers; a good use for those innovative modes. Like many, he laments the lack of SSB and CW QSOs, with many casual operators solely concentrating on the digital modes, especially on the bands above 144 MHz.

AF1T finished third in the category, leveraging QSOs and multipliers on thirteen bands, including light. WA3NUF finished fourth in a 10-band effort. VE3DS finished fifth, operating eight bands and finding success operating FT8 on the bands higher than 6M and 2M, including a 400+ mile QSO on 432 MHz.

What do rovers do when the weather is too bad to go out? If you are KF8QL you fire up your well-equipped home shack. With all bands, 6 meters through 1.2 GHz, David had a good time in the contest. (Photo by KF8QL)

Single Operator High Power (SOHP)

Perennial SOHP juggernaut K1TEO battled through high noise levels on 2M to capture the SOHP top honors; dominating the rest of the competition. He noted that with more operators using FT8, microwave contacts were hard to come by and "running the bands" was a rare occurrence. As a result he had the lowest 222 MHz and up QSO total in years. Jeff escaped the worst of the weather with no icing problems though, and had some sporadic E openings on Sunday.

Single Operator, High Power	
K1TEO	254,196
N2YB	81,962
K1RZ	81,400
N1AV	67,373
WZ1V	49,220
VE3ZV	47,058
WA3DRC	45,066
N4QWZ	41,985
WB2RVX	40,383
K1KG	37,497

N2YB finished in second narrowly edging out K1RZ by only 562 points out of more than 80,000. The SOHP category is competitive even away from the top places. In third, narrowly missing second place was K1RZ, who experienced freezing rain at the beginning of the contest. He pretty much had to pull the plug after 3.5 hours due to high SWR preventing the use of amplifiers, severe antenna pattern degradation, and the lack of rovers who were waiting out the ice. Sunday the temperature soared to 37F and conditions improved from "impossible" to "not good" for Dave, and more rovers were out.

Another rover refugee from the storm; K9YR came in from the cold and operated from the warmth and comfort his well-equipped home station in EN52.

N1AV finished in fourth place in a heroic effort from Arizona. Southwest calls are seldom seen (yes Jay is from AZ, despite the one call) in the top 10 in the January contest. Jay put together this impressive score through a combination of staying on the air the entire contest time, operating on 11 bands, operating EME, meteor scatter, FT8/FT4, and lots of SSB/CW. Jay worked hard before the contest recruiting entrants from the Arizona Outlaws Contest Club and recruiting rovers among novice VHF contesters and supplying them with "milk crate" rover stations. This helped not only Jay's score but also the score of many other Southwest VHF contesters.

WZ1V suffered through poor conditions and high noise on Saturday to take fifth place. Ron had modest Es openings to the south on both days and to the Midwest on Sunday.

KJ7JC and N7VD put the finishing touches on N1AV's 1296 EME dish. Operating from DM43 and working nearly every propagation form possible, and nearly every signal mode possible, including EME on 144 to 1296 MHz, Jay finished a very respectable fourth place nationwide in the SOHP category, a significant accomplishment from the desert Southwest. (N1AV photo)

Limited Multioperator

The team of N2NT, N2NC, and WW2Y operating as N2NT put in a solid showing to take first place in the Limited Multioperator category, overcoming the poor weather, lack of rovers, and antenna rotor issues. They parlayed good meteor scatter conditions on Sunday and some Es to Florida and the Midwest into the winning score.

Limited Multioperator	
N2NT	114,452
K5QE	94,941
W3SO	27,234
W2MMD	25,772
N4HB	25,203
VE3MIS	21,840
WD9EXD	20,350
AD4ES	7,668
N2JQR	6,786
WA3EKL	6,660

The K5QE team, consisting of K5MQ, K5QE, KV5W, N1XS, N5KDA, N5NU, N5YA, VE3WY, W5KDA, W5ZZ, and WB2FKO slogged through a myriad of problems and poor band conditions to finish second. To quote K5QE's blunt assessment of the contest: "Conditions sucked. Murphy arrived early and stayed late. No Es at all. Not a single SSB contact on 6M." Marshall's team compensated partially by running up a lot of QSOs on EME.

N9SD had a great antenna platform for his first try at the January VHF Contest, erecting a 6M Moxon and a 2M Yagi on the roof of his condominium at 230 feet. He operated from the adjacent solarium, so feed line length was not a problem and he was nice and warm. Scott is normally an HF contester, so he learned that while it wasn't the high-rate, fast-paced contests he is used to on HF, it was fun to overcome practical and technical challenges to get a decent station set up. (Photo by N9SD)

The W3SO team of operators, W3BTX, W3IDT, W3XOX, and W3YOZ, operating from Wopsononock Mountaintop put together a score good enough for third place despite fighting through icy conditions that shut down the amplifiers on Saturday. They rode a 55/45 mix of SSB and FT8 QSOs into the third place score and seemed to be more successful in stirring up the analog QSOs. They did this by publicizing that they would do SSB on the hour, CW on the half hour, and FT8 in

between. Upon reflection, W3IDT would revise this in the future to SSB at top of every EVEN hour; CW at the top of every ODD hour; FT8 in between (better would be FT4) as Bob feels that 20 minutes or so of FT8 is simply not a long enough continuous stretch. Maybe others can experiment with this mode rotation in the June contest.

W2MMD operated by the team of K2QA, KB2AYU, KT2Y, N2GXJ, N3PUU finished fourth. The N4HB team consisting of AB4SF, K1EEE, and N4HB, finished fifth despite poor conditions; primarily by putting together QSOs from short Es openings on 6M, grid multipliers from EME activity, as well as QSOs and multipliers from FT8.

The 2M EME array at WA7XX (now K7EME). In addition to Doug's EME activity in the contest, he spent a lot of time chasing the rather large pack of Arizona rovers.

Unlimited Multioperator

The N3NGE team of K1WHS, K3EGE, K9PW, N3EXA, N3NGE, and WA3WUL fought terrible weather conditions to run away with the Unlimited Multioperator category. With iced-up antennas performing poorly, if at all, in reverse on Saturday, Sunday temps brought thawing and normal antenna performance. Bucking the trend toward increasing FT8/FT4 QSOs among power competitors, they did not operate those digital modes and found plenty of SSB and CW stations to work.

The KD2LGX team, consisting of N2IK and KD2LGX, finished second.

Unlimited Multioperator	
N3NGE	269,560
KD2LGX	39,744
KE1LI	36,935
N8GA	35,742
W4NH	33,912
WØRSJ	25,920
WA3EHD	24,487
W1XM	14,472
W7MRF	7,458
W3RFC	4,428

The KE1LI team of KB1DNO, KB1JLG, KB1TIM, KE1LI, NI1A, and W1HJY put up their best score ever to finish third. KE1LI had a more upbeat assessment of the contest than most, with the summary "If we heard it, we worked it." They did not escape the January visit from Murphy though. KE1LI made a frigid climb in wind to replace the 6M coax.

The N8GA team consisting of K8DZ, KB8ZR, N8UR, N8ZM, W8BFT, W8PLZ, WA8OGS, WB8ART, and WB8TDG finished in fourth place. The majority of their contacts were with FT8 and many of the rest from FM. W4NH with operators K4SQC, K4VBM, KI4US, KM4QHI, KN4ZKT, N4NIA, NX9O, W4KXY, W4ZST, and W5TDY finished fifth from Georgia.

Classic Rover

There is a familiar call at the top of the Classic Rover category, N6NB, who has been an active participant in VHF contesting since the sixties, has won at least a Division Leader Certificate in each of the seven decades since then. Wayne admits to slowing down a bit though, and only operating on 11 bands from 10 grids in this contest. Starting in the Los Angeles basin on Saturday, he went to the San Joaquin Valley on Sunday where he met up with WA6IPZ, who finished second in this category and NI6G who finished fourth in the category.

Classic Rover	
N6NB/R	290,640
WA6IPZ/R	111,744
K2EZ/R	110,715
NI6G/R	110,664
KF2MR/R	69,936
W6IT/R	36,960
AG4V/R	27,740
VE3OIL/R	25,608
K2ET/R	25,608
KJ7JC/R	23,125

With the FCC reassignment of the 3456 MHz calling frequency all but certain, N6NB proudly, and defiantly, displays his QSO total on that band. Wayne made it a point to operate 3456 MHz in the contest and encouraged others to do so as well. Wayne was one of many to submit comments on the FCC notice of proposed rulemaking which was underway during the contest. (Photo by N6NB)

WA6IPZ beat out K2EZ by a little over 1,000 points for the closely-contested second spot in the Classic Rover category. K2EZ made one of her epic 19-grid, 1600-mile roves for a first-time serious Classic Rover entry with eight bands. Andrea started in the snow in Pennsylvania and ended up in warmer Oklahoma where she roved with NØLD/R and K5SRT/R on Sunday. Andrea noted that she gets 3.5 QSOs per gallon.

Unfortunately, a little more than a month after his 4th-place rove in the San Joaquin Valley, NI6G became a silent key. He will be missed, not only in the rover community, but also in the DX and contesting communities.

KF2MR/R found an innovative way to work 10 GHz without venturing out into the blizzard to set up the dish and tripod. The passenger side is pointed down wind and yes, the dish is only supported mechanically by the power leads. Jarred completed four 10GHz QSOs with this setup. Rovers are nothing if not inventive. (Photo courtesy KF2MR)

KF2MR finished fifth from the stormy Northeast, the highest finish of any rover who spent most of their operating time there. Jarred reported that activity was great; one of the silver linings to having a contest in the middle of a blizzard. With no place to go, most people operate their home stations. Jarred found innovative ways to stay out of the cold and snow and still operate.

A special nod to KJ7JC who finished tenth in his first January contest. Jason seemed to be everywhere in Arizona.

Arizona was a nice place to rove in the January contest with nice weather and lots of activity. Jason, KJ7JC/r took advantage of all these. Here he is on Four Peaks Mountain at 7,000 ft asl in DM43. (Photo by KJ7JC)

Limited Rover

KA5D and his brother, KB5PRZ, operating as KA5D/R took top honors in the Limited Rover class by roving through 10 grids in Central Texas. They started in Austin and followed US Highway 281 north, which conveniently parallels the grid boundary.

KA5D/R somewhere in central Texas. KA5D/R and KB5PRZ have a very nice rover setup here, with both directional and omnidirectional antennas. Contrast the central Texas weather with that of the rovers in the Northeast! (Photo courtesy Maggie Westy)

Limited Rover	
KA5D/R	28,480
KI5FIQ/R	15,090
AE5P/R	14,550
KT5TE/R	14,130
WB2SIH/R	7,654
K5ND/R	6,750
W5TV/R	6,280
KEØMHJ/R	5,074
N5BNO/R	4,920
WB8LYJ/R	4,255

KI5FIQ/R won the race for second place with less than 1000 points separating KI5FIQ/R, AE5P/R, and KT5TE/R. WB2SIH took time out between his snow removal efforts to get out and capture fifth place. The weather limited him to only operating two grids, but he showed what can be done with simple gear and a limited itinerary if one is persistent.

Unlimited Rover

K6MI/R took first place honors in the Unlimited Rover using the category the way it was intended - allowing more than 100 QSOs with other rovers. He roved the San Joaquin Valley with N6NB/R, NI6G/R, and WA6IPZ/R, but did not limit the number of QSOs with other rovers, as the Classic and Limited Rovers are required to do.

Unlimited Rover	
K6MI/R	149,684
K5SRT/R	126,816
NØLD/R	111,060
KBØYHT/R	12,236
N6ZE/R	10,848
K4SME/R	6,486
N2SLN/R	2,108
VE7AFZ/R	1,037
WD5DJW/R	72

Similarly, K5SRT/R (K5SRT, K3NT, and KG9DUK operators), NØLD/R (WØHGJ and NØLD, operators), and KBØYHT (KBØYHT, KCØQIE, and Jason, operators) collectively known as the OKrovers, put together a coordinated rove. Roving south into Texas, they hit three four-grid corners. They also hooked up with K5ND/R in North Texas and K2EZ/R near Tulsa, increasing their score in the Classic and Limited Rover categories.

K5ND/R, K5SRT/R, and N0LD/R meet up near a North Texas grid corner under pleasant weather. It is always nice to meet fellow rovers during a contest and also to exchange a few QSOs. Note the three different approaches to rover antennas used by the three different rovers. (Photo courtesy of K5ND)

N6ZE/R, with operators N6ZE and WA6WDY, finished fifth while activating four Los Angeles and Ventura county grids. Saturday, operating from the Santa Monica Mountains, they had a nice tropo duct extending to San Diego and picked up numerous stations in San Diego operating FM.

N6ZE operating from the Santa Monica Mountains. You can see a faint inversion, the brownish layer on the horizon is beneath it, which afforded great propagation for N6ZE and fellow operator WA6WDY into San Diego. Also visible is Catalina Island to the right, an unusual sight for Southern Californians, and Palos Verde, a popular VHF operating site and former home to W6AM, just to the left of the pickup cab. (Photo by WA6WDY)

The N6ZE/R team in action. Woody, WA6WDY, left, tunes 70cm while Pete, N6ZE, works on completing a contact on 33cm FM with an ALINCO DJ-G29 handheld and handheld Yagi. Handie-talkies are a good inexpensive way to add a band, and when coupled with a gain antenna, can really be productive. (Photo courtesy of N6ZE)

The Records

There was one overall record set in the January 2020 VHF contest. KG6IYN set a new record of 11,060 points for Single Operator FM (SOFM) from the San Diego Section.

Fourteen new January VHF contest Division records were set in 2020.

Division	Category	Score
Delta	RL	14,550
West Gulf	RL	28,480
Southwestern	SOHP	67,373
Pacific	SOLP	73,710
Dakota	SO3B	528
Delta	SO3B	4,968
New England	SO3B	8,960
Northwestern	SO3B	5,600
Hudson	SOFM	1,120
Midwest	SOFM	297
Roanoke	SOFM	8,308
Southeastern	SOFM	682
Southwestern	SOFM	11,060
West Gulf	LM	94,941
Canada	LM	21,840
Southeastern	UM	33,912

Club

The Mt. Airy VHF Radio Club continued their dominance of the Unlmiited Club category with an amazing 69 entries. Club entries create activity and give entrants a cause to operate for beyond their own self-aggrandizement. Mt. Airy club members turn out in large numbers to support the club entry; a tradition that goes back many years and seems to be a constant in this contest. Way to go "Packrats"!

Club	Score	Entries
Unlimited		
Mt Airy VHF Radio Club	1,287,631	69
Medium		
Southern California Contest Club	387,843	18
The Ontario VHF Association	387,576	38
North East Weak Signal Group	216,287	17
Arizona Outlaws Contest Club	191,367	28
Potomac Valley Radio Club	124,150	27
Northern California Contest Club	123,283	11
Roadrunners Microwave Group	121,999	9
Pacific Northwest VHF Society	70,138	33
Yankee Clipper Contest Club	52,943	14
Society of Midwest Contesters	37,605	17
Florida Contest Group	20,196	10
Frankford Radio Club	17,258	9
Florida Weak Signal Society	16,584	7
South Jersey Radio Assn	11,404	11
Northern Lights Radio Society	10,259	14
Central Texas DX and Contest Club	9,890	4
Badger Contesters	8,823	10
DFW Contest Group	7,182	3
Tennessee Contest Group	6,469	5
North Coast Contesters	5,625	3
Granite State ARA	4,864	6
Six Meter Club of Chicago	4,384	6
Grand Mesa Contesters of Colorado	4,272	4
Alabama Contest Group	3,431	4
Michigan VHF-UHF Society	3,121	3
New Mexico VHF Society	2,844	5
Hudson Valley Contesters and DXers	2,063	5
Rochester VHF Group	1,281	4
Willamette Valley DX Club	1,024	3
Alaska VHF-Up Group	706	3
Burlington County Radio Club	506	3
Swamp Fox Contest Group	290	3
Carolina DX Association	258	4

Club	Score	Entries
Local		
Orleans County Amateur Radio Club	110,684	8
Eastern Connecticut ARA	40,760	6
Gloucester Co ARC	26,351	5
Chippewa Valley VHF Contesters	13,234	3
Meriden ARC	4,160	3
Bergen ARA	3,912	3
Bristol (TN) ARC	2,748	3
Niagara Frontier Radiosport	688	4

Competition for the Medium Club category was intense, with less than 300 points (out of more than 387,000!) separating the eventual winner, the Southern California Contest Club, from the runner-up, the Ontario VHF Association. The Northeast Weak Signal Group finished third and managed to turn out 17 members to participate despite the weather problems that plagued the Northeast. The Arizona Outlaws Contest Club (AOCC) finished fourth in a growing display of the popularity of VHF contesting from the Southwest. The Southwest turns out more than a dozen SOTA operations for a joint SOTA-January VHF Contest activity, which makes for a target-rich opportunity for home operators and rovers alike.

The local club competition was won by the Orleans County Amateur Radio Club, with an impressive 110,684 points; a score which would have put them in the top ten in the Medium club category.

Club activity is a great motivator for individual activity, so if you are a member of a club, submit your entry with the club entry and encourage other members to do the same, if you are not a club member, find a local club and join. Encourage the club members to get on for the contest, if only for a few hours.

Reflections on the January VHF Contest

The January VHF Contest, originally known as the VHF Sweepstakes, is one of the oldest VHF/UHF contests, having started in 1948. It was the most popular VHF/UHF contest for many years, peaking in popularity in the early 1960s and then declining for various reasons, including the change in emphasis by local clubs from AM to FM for local QSOs and the loss of Novice class voice privileges on 2M. The introduction of grid squares for multipliers in the 1980s helped to maintain the interest in the contest, as did the introduction of the Rover categories in the early 90s. The January contest received a substantial boost with the introduction of no-code licensing in the mid 1990s and the influx of Technician class licensees, but activity then dropped and plateaued. Most of us active in VHF contesting were concerned about the long-term viability of the January contest.

Then activity substantially increased in 2018. This increase in activity is most certainly due to the introduction of the WSJT-X modes FT8 and FT4. Participation has grown each year since then, with 2020 having a record number of entries for the new millenium. With increasing activity each of the last three years, there would seem to be a consensus that the January contest is healthy. There is no such consensus, however, and there are suggestions for changes to the contest. It probably doesn't hurt to discuss these proposed changes openly. My thoughts abut the current contest, how it evolved, and some of the changes that have been proposed follow. These are not always well organized, but are offered for your consideration.

Although the use of FT8 is one of the major concerns by many, and the subject of many suggested changes, ranging from eliminating the mode altogether from the contest, to having separate FT8 contest, to having different (usually lower) point values for digital QSOs, and others. As the impacts of operators using FT8 are significant to the January Contest, I will discuss some of those concerns in a separate section below.

The contest has changed a lot since its 1948 inception. In the beginning, there were no categories and multioperator entries were listed along with single-operator entries in the results, with the operators listed in parenthesis. Since that time, categories have proliferated; some for the better, some probably not. Several categories have been introduced which limit the bands operated: the Limited Multioperator, Limited Rover, Single Operator Three Band, and Single Operator FM. These limited categories have decreased the activity

on the microwave bands in the contest. That is probably bad, especially when commercial interests eye our microwave allocations; although many people operate those limited categories. If you are currently operating one of these classes, you may consider moving up to a category with more bands and increase activity not only for you, but also for others.

Having different QSO points for the higher bands has, in the long run, helped to get people on these bands, but in some categories and in some areas of the country, the contest has pretty much become a microwave contest. That in and of itself is probably not a bad thing, but it does discourage newcomers.

Replacing sections as multipliers with grids as multipliers in the early eighties helped a lot in letting the operators in the West get as many multipliers as those in the East and Northeast. But there probably isn't much that can be done to even out the high geographical density of VHF operators in the Northeast within the typical troposcatter distances there.

The advantage that the Northeast has over most of the country has been a hot topic almost since the inception of the contest. Multiple things have been tried to dilute this advantage, none of them very successful. One of the more interesting tries was adding a handicap of 10 multipliers to everyone's scoring.

The Rover category has been the subject of much controversy since before its introduction. Several changes have been made over the years, each resulting in an outcry about the changes causing the demise of the Rover class. But most of the rovers plug along, deaf to the naysayers, and continue to go out every contest. The Rover categories are healthy, with this year's rover entries the highest in years. The furor over coordinated Rover activities, commonly referred to as grid-circling or grid-squaring, seems to have died down in the past few years and perhaps even become acceptable with a significant number of this year's rover entries participating in some sort of Rover grid multiplying efforts. Rover scoring has been changed several times over the years and the present scheme seems to have had reluctant acceptance among rovers, although many still long for the "old Rover rules".

Perhaps the most common lament about the January contest is the date. The common complaint about the date is that it misses peak winter sporadic-E season which occurs at the end of December, by a lot. A more pragmatic concern is that the current date conflicts with the NFL playoffs, although that concern is geographical in nature. It has been suggested that the VHF contest be held on the weekend before the Super Bowl, which is a dead week for the NFL. Unfortunately this puts it further away from peak Es, and also puts it in direct competition with the CQ 160M contest, which shares much of the contesting community with VHF contesting. The two are really incompatible. The last weekend in January was tried briefly and in some places, at least, the VHF activity went up significantly when the contest was moved back to earlier in the month.

For many years, the VHF contest date was the second weekend of January and that seemed to catch more sporadic-E than the current later dates. An oft-heard suggestion is to swap the weekends of the RTTY and VHF contests, putting VHF on the first weekend in January, which would be much closer to the optimum Es season peak than the current date. The issue with that is the 12-hour-long SSB North American QSO Party (NAQP) is held on the same weekend as the current VHF contest. While an apparent conflict with the VHF contest, the conflict is not major at this time as the SSB contesters who operate the NAQP still have more than half of the VHF contest in which they can operate, but diehard contesters would want to operate the full RTTY contest as well as the NAQP and that would be a big problem.

Those are my thoughts on the current status of the January VHF Contest. Fortunately, it is healthy, and one hesitates to change that which works.

Impacts of the use of Digital Modes in the January VHF Contest

The use of digital modes is changing the face of contesting. While this has been most prominent since the introduction and use of the FT8 mode in

the 2018 contest, the digital revolution has been going on since the introduction of WSJT-X in 2001. JT65 has made moonbounce (EME) more accessible to the better-equipped terrestrial stations where it was not when SSB or CW was required. JT65 has also sped up EME QSOs for nearly all stations - a good thing in contesting. On two meters and up, with good moon conditions, EME stations with elevation rotation and the ability to operate over a full moon pass can work 100 or more grids on two meters in a good contest weekend. This number of grids is difficult if not impossible to work with normal or even enhanced terrestrial propagation on two meters. This, I suppose, is not inherently bad, but it is daunting for the typical 2M op contemplating putting together a competitive station. This may hurt competitiveness in the long run, and some have proposed limiting EME QSOs or putting them in a separate category. I am not sure the contest needs another category, but I am certain that limiting the QSOs an operator can make is a bad idea.

Thanks first to FSK441, and now to MSK144, meteor scatter is within the reach of even a modestly equipped 6M station and the better-equipped 144 MHz stations and even patient 222 MHz stations. There has been a silent revolution in operating these modes with calling CW or SSB CQs on a dead Sunday morning band being replaced by a MSK144 session yielding some new multiplier grids, even with random calls, something unlikely with the analog modes. I don't think anyone has expressed any problems with this type of operation. Everyone can participate and benefit. So let's leave MSK144 alone and not throw it out with the rush to fix things, both actual and perceived, that are wrong with contesting on the digital modes.

That brings us to the impacts of operating FT8 and FT4 in the contest. The complaints against the mode are several, some justified and some not; some technical, some operating-related, and some emotional. Table 1 shows the number of logs submitted since 2018, the first year that FT8 was available. Although there is no requirement to specify mode in the submitted log, most, but not all, submitted logs do specify it properly due to computer interfacing to station hardware and computer logging. Hence, the data shown in the table may overestimate the number of logs with no digital contacts. There are several takeaways from the table.

First, contest participation, as judged by logs submitted for the last three years that FT8 has been used in the contest, has increased more than 40% over the last three years of the non-FT8 era. Second, FT8/FT4 are popular modes, as well over half of the logs submitted in this year's contest contained at least one digital QSO. Third, FT8/FT4 are attractive enough contesting modes such that over 20% of the logs submitted in 2020 contained digital QSOs only! Whatever other conclusions one may draw from this data, I think it safe to say that the use of FT8/FT4 has rejuvenated interest and increased participation in the January VHF Contest.

After years of concern about declining, or at best steady activity, we now see a significant increase in activity. This is good, right? Well, some are concerned about how the influx of new activity, mostly concentrated on FT8/FT4 modes, is impacting "traditional" contesting.

Distribution of Logs with digital QSOs by year

Year	Total Logs	No Digital	Any Digital	100% Digital
2015	648			
2016	678			
2017	644			
2018	742	500	242	57
2019	918	392	526	196
2020	942	400	542	207

Note: Submitted logs are not required to specify mode, thus digital QSOs may be recorded as phone QSOs, so the "No Digital" data should be viewed with caution. The "No Digital" numbers given are an upper bound; the actual numbers of operations with no digital QSOs are probably less than what is shown.

Table 1: Logs with Digital QSOs by Year

The biggest complaint being leveled at the rise in use of FT8/FT4 is the operator on FT8 cannot

support the QSO rate that they could make on SSB, although rates with FT4 approach the rates one can achieve with CW. One of the mantras of serious contesting is that QSO rate is key and is the prime driver about how operating decisions should be made. Although the normally slow rates of FT8 are acceptable under flat propagation; when propagation is enhanced and signal-to-noise ratios are high enough to support high SSB and CW rates the casual contester who is operating FT8 stays on FT8 and doesn't go to SSB or CW for the higher rates. In fact, they usually enjoy the increase in activity on FT8 and the ability to make QSOs without many, if any fills. The astute contest op does recognize that they can probably do better on SSB or CW and QSYs to those frequencies, but since much of the contest activity is on FT8, there aren't very many people there to support the potentially higher rates. So, they go back to the FT8/FT4 frequency to make at least some QSOs, even at a lower rate, which encourages activity on FT8/FT4, thereby reinforcing the behavior they don't like. It is rather a "damned if you do, damned if you don't" situation. This discourages many serious VHF contesters and nearly all HF contesters who migrate to VHF during the contests. It is difficult to quantify this rate problem and compare it to pre-FT8 levels, other than looking at the public logs and calculating rates, but the public logs don't appear to be available for 2017, the last January VHF contest without FT8 making comparison impossible. If those logs become available, it would be an interesting, although somewhat daunting, analysis to conduct.

Education is probably the best solution to the rate issue; that is letting the casual operator know that when signal strengths are high they should QSY to the SSB or CW portion of the band. This can be done through club newsletters and in person at ham gatherings.

Another oft-heard complaint leveled at the use of FT8 is that it is not possible to get stations to QSY from one band to another. This can be done with the TX macros in FT8 or FT4. One can program in something like "QSY 144.174" or just "144.174?" or other band and send it as TX5. There are several well-known ops who do this with some success, including K5QE, VE3SMA, and WB2FKO. It is not as straight forward as asking someone on phone, and there can be some ambiguity as to who the message is directed to, but those issues can be dealt with. I suspect that as operating FT8 and FT4 in the contests becomes more popular, more people will learn how to do this.

A common complaint is that activity on 222 MHz, 432 MHz, and the microwave bands is suffering with the operators staying on 6M FT8/FT4 instead of working other bands. One widely circulated e-mail after the January VHF contest, complained "...activity on 222 MHz and 432 MHz has almost disappeared." As shown in Table 2, which compares activity by band for the pre-FT8 era to the activity since the use of FT8 has become widespread, the numbers tell a different story.

Impact of operating FT8&FT4 on QSOs by band in January VHF Contest

	Band					
Year	**50**	**144**	**220**	**440**	**902 & up**	**Total**
2015	17304	19384	6218	9094	6409	58409
2016	17929	20384	5993	5628	3238	53172
2017	18503	19923	5426	8918	3633	56403
pre-FT8 Average	*17912*	*19897*	*5879*	*7880*	*4427*	*55995*
2018	19884	18745	6049	9292	5617	59587
2019	30826	16174	4306	7422	2901	61629
2020	29206	20706	5206	8358	5309	68785
"FT8 era" Average	*26638*	*18542*	*5187*	*8357*	*4609*	*63334*

Table 2: QSOs by Band in January VHF Contest before and after FT8

As can be seen in Table 2, activity on 222 MHz and 432 MHz, as measured by QSOs per band, is comparable to when people did not have access to FT8/FT4. In terms of total QSOs it has roughly remained the same. It is hard to draw quantitative conclusions as the data set is relatively small and there are normally significant year-to-year fluctuations in these numbers. But I think one can say that the 222 MHz and 432 MHz activity is still

there. Why do so many operators think that the activity on 222 MHz and 432 MHz has decreased? I suspect that there are several reasons for this. First, as the number of logs has increased by almost 40%, the actual number of 222 MHz and up QSOs have remained essentially the same. Thus while the real activity in terms of actual QSOs made has stayed the same, the percentage of activity in terms of overall QSOs has diminished. The second is that while the traditional way of making QSOs on the upper bands is to move stations up the band, this is harder, but not impossible, starting from an FT8 or FT4 frequency. So, experienced contesters, knowing the value of these higher band QSOs, have to work harder to complete them. This harder work translates to the operator thinking that there are fewer QSOs to be had on the higher bands.

In 2018, contest QSOs on two meters dropped and dropped further in 2019, causing some alarm. But, two-meter QSOs were up in 2020 to pre-FT8 levels though, so it looks like at least some of the operators using FT8 are learning to QSY. We shall see what the future will bring.

Rovers, and to some extent Single-op Portable stations, have other concerns about FT8 and FT4, many perhaps not so easily resolved. SOPs do not usually operate with a computer; adding one to enable the digital modes would require a major revision to the way they think about equipment and power management. Rovers have somewhat different issues - while many of them use computers to log, adding another mode along with the other tasks a Rover is typically managing is beginning to exceed many Rovers' capability. The reduced rates are a bigger concern for the rover, necessitating a longer stay in the grid to make the same number of contacts in a grid and hence, eventually limiting the number of grids that can visited. However, there are Rovers who have managed to operate FT8, FT4, and MSK144 successfully. In particular, with two operators, FT4, and to some extent FT8, are good modes to use moving between grids. It is clear that rovers will need to adapt new operating strategies to cope with the digital modes.

All of this notwithstanding, experienced VHF contesters have adapted to the changes brought about by operators migrating to FT8 and FT4 from the analog modes. The answer is not always the same for all operators, even in the same situation.

Log submission and checking

It is good to see the number of logs submitted up for the third straight year. Nearly all of the logs were submitted electronically, which is a good thing for the log checkers and so for contesters. I suspect that the increase in logs is due in part to WSJT-X automatically generating a Cabrillo-format log after the operating session. This lowers the barrier for new contest entrants who often have found generating and submitting a Cabrillo log difficult.

There is an increase in "not in logs" or NILs which seem to accompany the FT8/FT4-rich logs though, and this seems related to a disconnect in when an FT8/FT4 QSO is over and what is required for a complete QSO. This is not a problem unique to VHF contesting as it was also noted in recent FT8-only HF contests. It is discussed in detail in the May/June 2020 National Contest Journal (NCJ) column Digital Contesting, which is worth reading if you find your NILs higher than you expected. NCJ is free to access on line for all ARRL members. This NIL problem should work itself out as entrants gain experience with the FT8 exchange.

One hundred percent log checking is an important part of the compiling and reporting contest results. It enhances the integrity and reputation of the contest. It instills confidence in participants for those who run the contest. By checking every log, there is significantly greater confidence in the accuracy of the outcome, particularly in close categories.

There are common errors in logging, some of which the log checkers can fix and others that they cannot. The best way to address these errors is to not make them in the first place by paying close attention to entering QSO information into your logging program or onto your piece of paper. Watch how your exchanges are copied and logged. For example, there is a fair amount of confusion or miscopying of Ms and Ns in the second character of the grid exchange. Also "fifty" gets confused with "sixty" as well as "fifteen" and "sixteen". Consistent use of

phonetics in the exchange is a straightforward way to solve these problems.

A surprising number of digits in the callsign are mis-copied/mis-logged, mix-ups between adjacent numbers on the keyboard, 2s and 3s for example, are common, as are the incorrect prefix letters (Ks, Ns, Ws). Typos can be minimized by looking closely at the screen as you type, and errors of all types can be avoided by paying careful attention to what was sent.

A good strategy is to review your log checking report from the last contest and formulate a strategy to avoid these mistakes. While it is dismaying to see your score reduced by the log checking process, it can be used as a learning process to improve your operating skills in the future. An error-free log, although difficult, is worth striving for and pays dividends.

Submitting an electronic log, while helpful to the log checkers, is not mandatory and non-electronic logs are accepted. They constitute a small, but nonetheless important part of the total logs submitted. Behind the scenes, these logs are typed by hand into a program that generates a Cabrillo-format electronic log. A special thanks to the volunteers who do this. If you are a member of a club, it is a worthwhile club activity to volunteer to help club members who are having problems generating a log, or for the club to volunteer to create electronic logs for the log checkers.

Logs Submitted

There were 942 logs submitted with four check logs. This is a slight increase of 24 logs over 2019 and is the highest number of logs submitted in this century! The three rover categories combined had 90 entries, which is the most in a January contest in a long time. Since what is good for rovers is usually good for the contest, this is a healthy sign.

Category	Entrants
Rover	38
Limited Rover	43
Unlimited Rover	9
Single Operator High Power	203
Single Operator Low Power	330
Single Operator Portable	21
Single Operator Three Band	211
Single Operator FM	42
Limited Multioperator	27
Unlimited Multioperator	14
Checklog	4
Total	**942**

Logs Submitted by Category
2020 January VHF Contest

Summary

The 2020 running of the January VHF Contest was very successful, building on three years of consecutive growth. Participation continues to be high. Log submission is high. Let's try to keep this momentum through to next year's contest. Start preparing for next year's contest. Put the dates for next year's contest, January 16, 17, and 18, 2021, on your calendar now. These dates are about as early as the January contest gets in relation to peak Es season, so the opportunities for elevated propagation are good.

If you only operate FT8 or FT4, it is not that much more trouble to operate MSK144 and the rewards are great in the additional grids one can pick up. Similarly, it you only do the digital modes on six meters, think about moving up and operating them on higher bands, particularly two meters, but FT8 is an effective mode on even higher frequencies. Or, plug a mike or key in and do some analog modes. Think about adding higher bands if you do not already have them. Low cost transverters are available to easily got on bands your main rig does not cover without much investment. Those increased QSO points on the higher bands really pay off.

When the SNR is high, it's time to QSY!

As the digital modes are now dominating the contest, make provisions for them if you don't already have them. If you already have them and use them, develop habits to use other modes and bands in addition to the digital ones. Make "when the SNR is high, it's time to QSY!" your mantra. Encourage others to do the same.

Again, thanks to all who participated in and submitted a log for the January contest. The January

contest presents unique challenges to contestants and it is good to see so many rise to the challenge. It appears that the January Contest is healthy and growing. It is an exciting time to be a VHF contester.

Listen for the weak ones!

Top Ten Scores by Category

Classic Rover			Limited Rover			Unlimited Rover	
N6NB/R	290,640		KA5D/R	28,480		K6MI/R	149,684
WA6IPZ/R	111,744		KI5FIQ/R	15,090		K5SRT/R	126,816
K2EZ/R	110,715		AE5P/R	14,550		NØLD/R	111,060
NI6G/R	110,664		KT5TE/R	14,130		KBØYHT/R	12,236
KF2MR/R	69,936		WB2SIH/R	7,654		N6ZE/R	10,848
W6IT/R	36,960		K5ND/R	6,750		K4SME/R	6,486
AG4V/R	27,740		W5TV/R	6,280		N2SLN/R	2,108
VE3OIL/R	25,608		KEØMHJ/R	5,074		VE7AFZ/R	1,037
K2ET/R	25,608		N5BNO/R	4,920		WD5DJW/R	72
KJ7JC/R	23,125		WB8LYJ/R	4,255			

Single Operator High Power			Single Operator Low Power			Single Operator Portable	
K1TEO	254,196		W6TV (W6YEP, op)	73,710		K7ATN	6,358
N2YB	81,962		N2WK	66,445		WA7JTM	5,375
K1RZ	81,400		AF1T	58,740		W7JET	4,378
N1AV	67,373		WA3NUF	56,376		K7TAB	3,520
WZ1V	49,220		VE3DS	30,876		AA4Q	2,261
VE3ZV	47,058		WA3GFZ	27,216		AA6XA	1,160
WA3DRC	45,066		KR1ST	26,220		K9AA (KO9A, op)	1,080
N4QWZ	41,985		N8RA	21,910		N2YTF	782
WB2RVX	40,383		N7VD	21,840		WB2AMU	418
K1KG	37,497		N2OA	15,050		NV4B	195

Single Operator 3 Band			Single Operator FM Only			Limited Multioperator			Unlimited Multioperator	
KO9A	14,628		KG6IYN	11,060		N2NT	114,452		N3NGE	269,560
W1QK	8,960		KM4KMU	8,308		K5QE	94,941		KD2LGX	39,744
K1HC	6,384		K2NUD	1,120		W3SO	27,234		KE1LI	36,935
N7EPD	5,600		WB9WOZ	996		W2MMD	25,772		N8GA	35,742
VE3SST	5,292		WG4I	682		N4HB	25,203		W4NH	33,912
N4HUF	4,968		KI7LTT	510		VE3MIS	21,840		WØRSJ	25,920
AI3Z	4,935		W6IA	460		WD9EXD	20,350		WA3EHD	24,487
N7IR	3,480		K3RW	395		AD4ES	7,668		W1XM	14,472
WA8TTM	2,886		KJ7AXA	376		N2JQR	6,786		W7MRF	7,458
XE2CQ	2,886		KØPHP	297		WA3EKL	6,660		W3RFC	4,428

Regional Leaders

West Coast Region (Pacific, Northwestern and Southwestern Divisions; Alberta, British Columbia and NT Sections)		Midwest Region (Dakota, Midwest, Rocky Mountain and West Gulf Divisions; Manitoba and Saskatchewan Sections)		Central Region (Central and Great Lakes Divisions; Ontario East, Ontario North, Ontario South, and Greater Toronto Area Sections)		Southeast Region (Delta, Roanoke and Southeastern Divisions)		Northeast Region (New England, Hudson and Atlantic Divisions; Maritime and Quebec Sections)	
Classic Rover									
N6NB/R	290,640	K2EZ/R	110,715	VE3OIL/R	25,608	AG4V/R	27,740	KF2MR/R	69,936
WA6IPZ/R	111,744	KD5IKG/R	19,431	VA3ELE/R	16,785	W5VY/R	8,100	K2ET/R	25,608
NI6G/R	110,664	N6RH/R	15,180	KA9WBT/R	3,243	K4RSV/R	1,248	W3ICC/R	22,128
W6IT/R	36,960	W5DMB/R	11,475	VE3TFU/R	1,170	W8BRY/R	190	NN3Q/R	13,940
KJ7JC/R	23,125	KCØP/R	624					KV2X/R	13,736
Limited Rover									
N6GP/R	4,181	KA5D/R	28,480	W9YOY/R	2,583	AE5P/R	14,550	WB2SIH/R	7,654
K6LMN/R	3,591	KI5FIQ/R	15,090	K9JK/R	2,260	W5TV/R	6,280	N5BNO/R	4,920
WB6HUM/R	1,520	KT5TE/R	14,130	VE3RKS/R	1,136	WB8LYJ/R	4,255	VO2AC/R	2,660
KL7VHF/R	480	K5ND/R	6,750	N9GH/R	465	KM4OZH/R	3,509	VO2AAA/R	2,660
KM6ZJK/R	196	KEØMHJ/R	5,074	VE3CRU/R	288	WB5RMG/R	648	AF1R/R	1,350
Unlimited Rover									
K6MI/R	149,684	K5SRT/R	126,816			K4SME/R	6,486	N2SLN/R	2,108
N6ZE/R	10,848	NØLD/R	111,060			WD5DJW/R	72		
VE7AFZ/R	1,037	KBØYHT/R	12,236						
Single Operator, High Power									
N1AV	67,373	K5LLL	26,487	VE3ZV	47,058	N4QWZ	41,985	K1TEO	254,196
WA7XX	32,634	K5AND	19,028	N9AKR	12,936	W3IP	22,896	N2YB	81,962
W2ODH	13,260	KØTPP	12,054	K8ZR	9,765	N3MK	19,188	K1RZ	81,400
K7YDL	10,478	K5TR (W5TN, op)	9,792	KT9L	7,440	WA4GPM	13,320	WZ1V	49,220
KE7SW	8,960	N5RZ	8,160	W9FF	4,895	N4JQQ	11,460	WA3DRC	45,066

West Coast Region			Midwest Region			Central Region			Southeast Region			Northeast Region	
(Pacific, Northwestern and Southwestern Divisions; Alberta, British Columbia and NT Sections)			(Dakota, Midwest, Rocky Mountain and West Gulf Divisions; Manitoba and Saskatchewan Sections)			(Central and Great Lakes Divisions; Ontario East, Ontario North, Ontario South, and Greater Toronto Area Sections)			(Delta, Roanoke and Southeastern Divisions)			(New England, Hudson and Atlantic Divisions; Maritime and Quebec Sections)	
Single Operator, Low Power													
W6TV (W6YEP, op)	73,710		K5TRA	14,964		VE3DS	30,876		W4RAA	7,093		N2WK	66,445
N7VD	21,840		NØLL	4,368		N8LRG	12,483		KT1R	3,597		AF1T	58,740
N6HC	14,875		WØZQ	4,212		K9MU	12,410		KO4MA	2,574		WA3NUF	56,376
WZ8T	8,091		WBØNRV	3,168		KF8QL	2,775		WA3RGQ	2,345		WA3GFZ	27,216
K2GMY	5,983		N5CXX (WA8ZBT, op)	1,978		KM8V	2,400		N3CMH	2,294		KR1ST	26,220
Single Operator, Portable													
K7ATN	6,358		KØNR	77		K9AA (KO9A, op)	1,080		NV4B	195		N2YTF	782
WA7JTM	5,375		KM4PEH	68								WB2AMU	418
W7JET	4,378		NØJK	28								KD2TDL	28
K7TAB	3,520		KØJJW	24								KB3SIG	16
AA4Q	2,261											K3EGE	8
												WA3WUL	8
Single Operator, 3 Band													
N7EPD	5,600		KI5YG	1,720		KO9A	14,628		N4HUF	4,968		W1QK	8,960
N7IR	3,480		AC5D	546		VE3SST	5,292		AG4W	2,015		K1HC	6,384
N7QOZ	2,376		KØVG	528		WA8TTM	2,886		WA4LDU	1,836		AI3Z	4,935
W7OTL	2,256		NØUR	486		VA3MW	2,001		W4TM	1,650		W3FAY	2,673
W8JH	1,456		KC7QY	288		W9ZB	1,584		K4EA	864		W1DYJ	2,625
Single Operator, FM Only													
KG6IYN	11,060		KØPHP	297		WB9WOZ	996		KM4KMU	8,308		K2NUD	1,120
KI7LTT	510		NØHDR	205		K9JK	24		WG4I	682		KD2TFW	240
W6IA	460		WAØKXO	152		N8PPF	12		K4NRT	15		KB1POP	115
K3RW	395		KG5UNK	68					N6DJS	8		W2BSN	85
KJ7AXA	376		NØEMU	16					K3TW	6		VA2DG	51

West Coast Region			Midwest Region			Central Region			Southeast Region			Northeast Region	
(Pacific, Northwestern and Southwestern Divisions; Alberta, British Columbia and NT Sections)			(Dakota, Midwest, Rocky Mountain and West Gulf Divisions; Manitoba and Saskatchewan Sections)			(Central and Great Lakes Divisions; Ontario East, Ontario North, Ontario South, and Greater Toronto Area Sections)			(Delta, Roanoke and Southeastern Divisions)			(New England, Hudson and Atlantic Divisions; Maritime and Quebec Sections)	
Limited Multioperator													
WO1S	780		K5QE	94,941		VE3MIS	21,840		N4HB	25,203		N2NT	114,452
W7QH	663					WD9EXD	20,350		AD4ES	7,668		W3SO	27,234
						W8RU	1,430		WB4WXE	2,880		W2MMD	25,772
						N9SD	1,104		KN4BBD	350		N2JQR	6,786
						WB9TFH	612					WA3EKL	6,660
Unlimited Multioperator													
W7MRF	7,458		KC5MVZ	120		N8GA	35,742		W4NH	33,912		N3NGE	269,560
												KD2LGX	39,744
												KE1LI	36,935
												WØRSJ	25,920
												WA3EHD	24,487

Division Winners

	Classic Rover		Limited Rover		Unlimited Rover		Single Operator High Power		Single Operator Low Power		Single Operator Portable		Single Operator 3 Band		Single Operator FM Only
Atlantic	KF2MR/R		N5BNO/R		N2SLN/R		N2YB		N2WK		KB3SIG		AI3Z		KB1POP
Central	KA9WBT/R		W9YOY/R				N9AKR		K9MU		K9AA (KO9A, op)		KO9A		WB9WOZ
Dakota	KCØP/R		NØSPN/R				WØGHZ		WØZQ				KØVG		NØHDR
Delta	AG4V/R		AE5P/R		WD5DJW/R		N4QWZ		AA4DD		NV4B		N4HUF		K4NRT
Great Lakes							K8ZR		N8LRG				WA8TTM		N8PPF
Hudson			WB2SIH/R				W2KV		WB2JAY		N2YTF				K2NUD
Midwest			KEØMHJ/R				KØTPP		NØLL		NØJK		KA2BPP		KØPHP
New England			AF1R/R				K1TEO		AF1T				W1QK		
Northwestern	KE7MSU/R		KL7VHF/R				K7YDL		WZ8T		K7ATN		N7EPD		KI7LTT
Pacific	N6NB/R		WB6HUM/R		K6MI/R		K6WIS		W6TV (W6YEP, op)		AA6XA		K7XC		W6IA
Roanoke	W8BRY/R		KM4OZH/R				W3IP		KT1R				WA4LDU		KM4KMU
Rocky Mountain			AA5PR/R				W9RM		NJ7A		KØNR		KC7QY		WAØKXO
Southeastern	K4RSV/R		WB8LYJ/R		K4SME/R		WA4GPM		W4RAA				AG4W		WG4I
Southwestern	W6IT/R		N6GP/R		N6ZE/R		N1AV		N7VD		WA7JTM		N7IR		KG6IYN
West Gulf	K2EZ/R		KA5D/R		K5SRT/R		K5LLL		K5TRA				KI5YG		KG5UNK
Canada	VE3OIL/R		VO2AC/R		VE7AFZ/R		VE3ZV		VE3DS				VE3SST		VA2DG
			VO2AAA/R												

	Limited Multioperator		Unlimited Multioperator
Atlantic	W3SO		N3NGE
Central	WD9EXD		
Dakota			
Delta			
Great Lakes	W8RU		N8GA
Hudson	N2NT		
Midwest			
New England	KM1CC		KE1LI
Northwestern	W7QH		
Pacific			
Roanoke	N4HB		
Rocky Mountain			
Southeastern	AD4ES		W4NH
Southwestern	WO1S		W7MRF
West Gulf	K5QE		KC5MVZ
Canada	VE3MIS		

QSO/ Multiplier Leaders by Band by Category

Classic Rover	
50 MHz QSOs	
N6RH/R	82
KJ7JC/R	78
K2EZ/R	62
VE3OIL/R	62
AG4V/R	59
50 MHz Mults	
AG4V/R	22
W5VY/R	20
K2EZ/R	18
VE3OIL/R	13
N6NB/R	10
144 MHz QSOs	
KJ7JC/R	108
KD5IKG/R	95
K2EZ/R	87
N6RH/R	86
K2ET/R	84
144 MHz Mults	
K2EZ/R	22
W5VY/R	17
VE3OIL/R	16
W5DMB/R	13
KD5IKG/R	12
222 MHz QSOs	
N6RH/R	86
KD5IKG/R	69
K2EZ/R	64
KF2MR/R	61
N6NB/R	54
222 MHz Mults	
K2EZ/R	16
KD5IKG/R	10
N6NB/R	10
KF2MR/R	8
W3ICC/R	8
432 MHz QSOs	
N6RH/R	84
KF2MR/R	75
K2ET/R	71
KJ7JC/R	66
K2EZ/R	62
KD5IKG/R	62
432 MHz Mults	
K2EZ/R	16
KD5IKG/R	11
N6NB/R	10
KF2MR/R	8
VA3ELE/R	8
VE3OIL/R	8
902 MHz QSOs	
KF2MR/R	53
N6NB/R	48
K2EZ/R	45
K2ET/R	38
NI6G/R	31
WA6IPZ/R	31
902 MHz Mults	
K2EZ/R	11
N6NB/R	10
KF2MR/R	8
NI6G/R	6
WA6IPZ/R	6
1.2 GHz QSOs	
N6NB/R	51
KF2MR/R	49
K2EZ/R	46
KJ7JC/R	46
KK6MC/R	37
1.2 GHz Mults	
K2EZ/R	10
N6NB/R	10
KF2MR/R	7
NI6G/R	6
WA6IPZ/R	6
2.3 GHz QSOs	
N6NB/R	49
WA6IPZ/R	31
NI6G/R	30
KF2MR/R	20
K2ET/R	16
K2EZ/R	16
W6IT/R	16
2.3 GHz Mults	
N6NB/R	10
K2EZ/R	7
KF2MR/R	6
NI6G/R	6
WA6IPZ/R	6
3.4 GHz QSOs	
N6NB/R	48
NI6G/R	31
WA6IPZ/R	31
W6IT/R	16
W6TAI/R	13
3.4 GHz Mults	
N6NB/R	10
NI6G/R	6
WA6IPZ/R	6
W6IT/R	4
KF2MR/R	3
W6TAI/R	3
5.7 GHz QSOs	
N6NB/R	47
WA6IPZ/R	31
NI6G/R	30
W6IT/R	15
W6TAI/R	12

5.7 GHz Mults	
N6NB/R	10
NI6G/R	6
WA6IPZ/R	6
W6IT/R	4
W6TAI/R	3
10 GHz QSOs	
N6NB/R	45
NI6G/R	30
WA6IPZ/R	30
W6IT/R	15
W6TAI/R	12
10 GHz Mults	
N6NB/R	10
NI6G/R	6
WA6IPZ/R	6
W6IT/R	4
VA3ELE/R	3
W6TAI/R	3
24 GHz QSOs	
N6NB/R	32
NI6G/R	20
WA6IPZ/R	20
W6IT/R	9
W6TAI/R	6
24 GHz Mults	
N6NB/R	10
NI6G/R	6
WA6IPZ/R	6

W6IT/R	4
W6TAI/R	3
47 GHz QSOs	
NN3Q/R	1
47 GHz Mults	
NN3Q/R	1
Light QSOs	
KØBAK/R	9
K1DS/R	3
Light Mults	
KØBAK/R	2
K1DS/R	1
Limited Rover	
50 MHz QSOs	
AE5P/R	82
KI5FIQ/R	78
KT5TE/R	78
KA5D/R	71
KEØMHJ/R	69
50 MHz Mults	
KEØMHJ/R	20
AA5PR/R	18
KA5D/R	16
WB8LYJ/R	16
K5ND/R	15
144 MHz QSOs	

KA5D/R	119
KI5FIQ/R	86
AE5P/R	84
KT5TE/R	83
K6LMN/R	71
144 MHz Mults	
KA5D/R	15
WB2SIH/R	15
KEØMHJ/R	13
WB8LYJ/R	13
N6GP/R	10
222 MHz QSOs	
KI5FIQ/R	86
AE5P/R	84
KT5TE/R	83
KA5D/R	72
W5TV/R	56
222 MHz Mults	
KA5D/R	11
WB2SIH/R	9
VO2AAA/R	7
VO2AC/R	7
AE5P/R	6
KI5FIQ/R	6
KT5TE/R	6
N6GP/R	6
432 MHz QSOs	
KI5FIQ/R	84
AE5P/R	83
KT5TE/R	83

KA5D/R	63
W5TV/R	55
432 MHz Mults	
KA5D/R	12
WB2SIH/R	9
K5ND/R	7
VO2AAA/R	7
VO2AC/R	7
Unlimited Rover	
50 MHz QSOs	
K5SRT/R	110
NØLD/R	102
N6ZE/R	58
K6MI/R	45
KBØYHT/R	32
50 MHz Mults	
K5SRT/R	19
NØLD/R	14
K6MI/R	13
N2SLN/R	11
K4SME/R	6
144 MHz QSOs	
NØLD/R	103
K5SRT/R	100
N6ZE/R	99
K6MI/R	57
VE7AFZ/R	35
144 MHz Mults	

K6MI/R	14
NØLD/R	14
K5SRT/R	13
K4SME/R	8
N2SLN/R	7
N6ZE/R	7
VE7AFZ/R	7
222 MHz QSOs	
K5SRT/R	93
NØLD/R	93
K6MI/R	45
N6ZE/R	36
KBØYHT/R	32
222 MHz Mults	
NØLD/R	13
K5SRT/R	12
K6MI/R	9
K4SME/R	7
N6ZE/R	5
432 MHz QSOs	
NØLD/R	98
K5SRT/R	96
N6ZE/R	41
K6MI/R	40
KBØYHT/R	32
432 MHz Mults	
NØLD/R	13
K5SRT/R	12
K4SME/R	9

K6MI/R	7
N6ZE/R	7
902 MHz QSOs	
K5SRT/R	84
NØLD/R	83
K6MI/R	32
KBØYHT/R	32
K4SME/R	4
N6ZE/R	4
902 MHz Mults	
K5SRT/R	12
NØLD/R	12
K6MI/R	6
K4SME/R	4
KBØYHT/R	4
1.2 GHz QSOs	
K5SRT/R	81
NØLD/R	81
K6MI/R	37
KBØYHT/R	30
K4SME/R	6
N6ZE/R	6
1.2 GHz Mults	
K5SRT/R	12
NØLD/R	12
K6MI/R	7
K4SME/R	5
KBØYHT/R	4

2.3 GHz QSOs	
K6MI/R	30
K5SRT/R	10
K4SME/R	1
2.3 GHz Mults	
K6MI/R	6
K5SRT/R	4
K4SME/R	1
3.4 GHz QSOs	
K6MI/R	29
K4SME/R	1
3.4 GHz Mults	
K6MI/R	6
K4SME/R	1
5.7 GHz QSOs	
K6MI/R	29
K4SME/R	1
5.7 GHz Mults	
K6MI/R	6
K4SME/R	1
10 GHz QSOs	
K6MI/R	29
K4SME/R	3
10 GHz Mults	
K6MI/R	6
K4SME/R	2

24 GHz QSOs	
K6MI/R	23
24 GHz Mults	
K6MI/R	6
Single Operator High Power	
50 MHz QSOs	
WA2FGK (K2LNS, op)	257
K1TEO	219
K1TO	180
WZ1V	177
N3MK	161
50 MHz Mults	
N4QWZ	71
WA2FGK (K2LNS, op)	64
K1TO	63
W4TAA	61
K1TEO	58
144 MHz QSOs	
K1TEO	209
W3XTT (KA1ZE, op)	187
W2KV	130
N2YB	129
WC2K	129
144 MHz Mults	
W3XTT (KA1ZE, op)	74
K1TEO	47
K2TXB	36

K1RZ	32
KØTPP	32
222 MHz QSOs	
K1TEO	70
N2YB	55
K1RZ	54
WC2K	42
N1AV	40
222 MHz Mults	
K1TEO	25
K1RZ	17
K5LLL	16
K5AND	15
N4QWZ	14
WZ1V	14
432 MHz QSOs	
K1TEO	105
W2KV	62
N1AV	59
WC2K	57
N2YB	56
432 MHz Mults	
K1TEO	31
K1RZ	17
VE3ZV	17
W2ODH	16
WC2K	15
WZ1V	15

902 MHz QSOs	
K1RZ	27
K1TEO	23
N1AV	18
N2YB	18
W2SJ	18
W3GAD	18
902 MHz Mults	
K1TEO	13
K1RZ	11
N2YB	7
VE3ZV	6
N1AV	5
WA7XX	5
1.2 GHz QSOs	
N1AV	51
WA7XX	37
K1TEO	33
N7RK	26
W2SJ	22
1.2 GHz Mults	
N1AV	16
WA7XX	15
K1TEO	12
K2UYH	8
K1RZ	7
2.3 GHz QSOs	
W2SJ	16
K1TEO	15

WA2OMY	10
K1RZ	9
VE3ZV	9
2.3 GHz Mults	
K1TEO	8
K1RZ	5
VE3ZV	5
N2YB	4
N4JQQ	4
W2BVH	4
W2SJ	4
3.4 GHz QSOs	
N1AV	8
WA3DRC	8
K1TEO	7
VE3ZV	7
W2SJ	7
3.4 GHz Mults	
K1TEO	6
N1AV	4
N2YB	4
VE3ZV	4
W3SZ	4
5.7 GHz QSOs	
N2YB	6
N3RG	6
WB2RVX	6
K1TEO	5
WA2OMY	4

WA3DRC	4
5.7 GHz Mults	
K1TEO	4
N2YB	4
N3RG	4
VE3ZV	3
WB2RVX	3
10 GHz QSOs	
K1RZ	7
WA3DRC	6
K1TEO	5
N3RG	5
W3SZ	5
10 GHz Mults	
N3RG	4
VE3ZV	4
K1RZ	3
K1TEO	3
KØVXM	3
W1GHZ	3
W3SZ	3
WA3DRC	3
WB2RVX	3
75 GHz QSOs	
N1AV	2
VE4MA/K7	1
75 GHz Mults	
N1AV	1

VE4MA/K7	1
Light QSOs	
W2SJ	2
WB2RVX	2
K3JJZ	1
KB1JEY	1
KC2TN	1
N3RG	1
W3GAD	1
WA3DRC	1
Light Mults	
K3JJZ	1
KB1JEY	1
KC2TN	1
N3RG	1
W2SJ	1
W3GAD	1
WA3DRC	1
WB2RVX	1
Single Operator Low Power	
50 MHz QSOs	
W1TR	154
N8RA	150
WA3NUF	132
KR1ST	128
NF3R	128
50 MHz Mults	
K9MU	41

KR1ST	37
N8RA	33
NØLL	32
W1TR	32
144 MHz QSOs	
WA3NUF	112
N2WK	111
N8RA	108
KR1ST	93
NF3R	92
144 MHz Mults	
N8LRG	32
N2WK	29
N8RA	25
WA3NUF	25
KR1ST	24
222 MHz QSOs	
N2WK	47
AF1T	45
WA3NUF	44
KA3FQS	39
WA3GFZ	39
222 MHz Mults	
AF1T	15
VE3DS	12
K5TRA	10
WA3NUF	9
KC6ZWT	8
W4RAA	8

WB2VVV	8
432 MHz QSOs	
AF1T	60
N2WK	60
WA3NUF	51
N7VD	50
WA3GFZ	44
432 MHz Mults	
N8LRG	18
VE3DS	16
AF1T	13
W4RAA	10
N7VD	9
902 MHz QSOs	
W6TV (W6YEP, op)	23
N2WK	17
WA3GFZ	17
AF1T	15
WA3NUF	15
902 MHz Mults	
AF1T	8
VE3DS	8
N2WK	6
W6TV (W6YEP, op)	6
WA3GFZ	5
1.2 GHz QSOs	
W6TV (W6YEP, op)	24
N7VD	22

WA3NUF	21
N2WK	18
AF1T	17
1.2 GHz Mults	
AF1T	6
W6TV (W6YEP, op)	6
WA3NUF	6
K2GMY	5
N2WK	5
N7VD	5
VE3DS	5
WA3GFZ	5
2.3 GHz QSOs	
W6TV (W6YEP, op)	22
N6HC	9
WA3NUF	8
N2WK	7
AF1T	5
2.3 GHz Mults	
W6TV (W6YEP, op)	6
AF1T	4
N2WK	4
WA3NUF	4
N6HC	3
VE3DS	3
3.4 GHz QSOs	
W6TV (W6YEP, op)	23
N6HC	9
WA3NUF	6

N2WK	5
AF1T	3
KA3FQS	3
WA3GFZ	3
3.4 GHz Mults	
W6TV (W6YEP, op)	6
N2WK	4
N6HC	3
WA3NUF	3
AF1T	2
VE3DS	2
WA3GFZ	2
5.7 GHz QSOs	
W6TV (W6YEP, op)	23
N6HC	7
AF1T	5
N2WK	5
W3EKT	1
WA3GFZ	1
WA3NUF	1
WØZQ	1
5.7 GHz Mults	
W6TV (W6YEP, op)	6
AF1T	4
N2WK	4
N6HC	3
W3EKT	1
WA3GFZ	1
WA3NUF	1
WØZQ	1

10 GHz QSOs	
W6TV (W6YEP, op)	23
KØSM	6
N6HC	6
AF1T	5
K5TRA	4
N2WK	4
10 GHz Mults	
W6TV (W6YEP, op)	6
AF1T	4
KØSM	4
N2WK	3
K5TRA	2
N6HC	2
VE2UG	2
24 GHz QSOs	
W6TV (W6YEP, op)	14
AF1T	1
24 GHz Mults	
W6TV (W6YEP, op)	5
AF1T	1
Light QSOs	
AF1T	1
KA3FQS	1
WB3IGR	1
Light Mults	
AF1T	1

KA3FQS	1
WB3IGR	1
Single Operator Portable	
50 MHz QSOs	
K7ATN	40
WA7JTM	28
W7JET	24
K7TAB	22
AA4Q	13
50 MHz Mults	
NV4B	8
WA7JTM	6
AA6XA	5
K7ATN	5
AA4Q	4
K7TAB	4
K9AA (KO9A, op)	4
N2YTF	4
W7JET	4
144 MHz QSOs	
K7ATN	87
WA7JTM	41
W7JET	31
AA4Q	25
K7TAB	23
144 MHz Mults	
AA6XA	6
WA7JTM	6
K7ATN	5

N2YTF	5
NV4B	5
W7JET	5
222 MHz QSOs	
K7ATN	21
K7TAB	17
W7JET	15
WA7JTM	15
K9AA (KO9A, op)	7
222 MHz QSOs	
K7ATN	21
K7TAB	17
W7JET	15
WA7JTM	15
K9AA (KO9A, op)	7
222 MHz Mults	
K7ATN	5
K9AA (KO9A, op)	4
W7JET	4
K7TAB	3
WA7JTM	3
432 MHz QSOs	
K7ATN	41
WA7JTM	33
W7JET	27
AA4Q	23
K7TAB	16
432 MHz Mults	

WA7JTM	6
AA4Q	5
K7ATN	4
K9AA (KO9A, op)	4
W7JET	4
902 MHz QSOs	
K7ATN	4
K7TAB	4
WA7JTM	4
AA4Q	1
AA6XA	1
N2YTF	1
NØJK	1
W7JET	1
902 MHz Mults	
K7TAB	3
AA4Q	1
AA6XA	1
K7ATN	1
N2YTF	1
NØJK	1
W7JET	1
WA7JTM	1
1.2 GHz QSOs	
W7JET	18
K7TAB	14
WA7JTM	14
K7ATN	8
AA4Q	6
AA6XA	6

1.2 GHz Mults	
AA6XA	5
K7TAB	4
W7JET	4
AA4Q	3
WA7JTM	3
2.3 GHz QSOs	
K7ATN	1
2.3 GHz Mults	
K7ATN	1
Light QSOs	
KB3SIG	2
K3EGE	1
WA3WUL	1
Light Mults	
K3EGE	1
KB3SIG	1
WA3WUL	1
Single Operator 3 Band	
50 MHz QSOs	
AI3Z	120
W1QK	120
KO9A	109
N4HUF	81
N1API	79

50 MHz Mults	
N4HUF	48
KO9A	37
W1QK	36
AI3Z	26
VE3SST	26
144 MHz QSOs	
K1HC	87
W7OTL	83
KO9A	63
N7EPD	60
N7QOZ	44
144 MHz Mults	
KO9A	26
K4EA	22
K1HC	21
W1QK	18
N3AAA	17
432 MHz QSOs	
W7OTL	35
WB2EOD	28
N7IR	27
KC2THQ	26
N7QOZ	24
XE2CQ	24
432 MHz Mults	
K3SFX	7
N7EPD	7
N7QOZ	7

KO9A	6
VA3MW	6
WA4LDU	6
Single Operator FM Only	
50 MHz QSOs	
KM4KMU	33
KG6IYN	21
K2NUD	8
KI7LTT	7
WB9WOZ	6
50 MHz Mults	
KM4KMU	7
KG6IYN	6
K2NUD	4
WB9WOZ	2
WG4I	2
144 MHz QSOs	
KG6IYN	123
KJ7AXA	99
KM4KMU	95
KI7LTT	51
K3RW	41
144 MHz Mults	
KG6IYN	11
KM4KMU	9
W6IA	5
K2NUD	4
KJ7AXA	4
KØPHP	4

N9VM (N1VM, op)	4
WB6ETY	4
WB9WOZ	4
WG4I	4
222 MHz QSOs	
KM4KMU	23
KG6IYN	16
WB9WOZ	8
K2NUD	6
KD7RUS	5
WG4I	5
222 MHz Mults	
KM4KMU	8
KG6IYN	7
K2NUD	3
WB9WOZ	3
KL7XJ	2
N9VM (N1VM, op)	2
W2BSN	2
W7AIT	2
WG4I	2
432 MHz QSOs	
KG6IYN	72
KM4KMU	49
KI7LTT	22
WB9WOZ	19
K2NUD	18
432 MHz Mults	
KG6IYN	11

KM4KMU	7
KØPHP	4
K2NUD	3
KD2TFW	3
N9VM (N1VM, op)	3
W6IA	3
W7AIT	3
WB9WOZ	3
WG4I	3
Limited Multioperator	
50 MHz QSOs	
N2NT	273
K5QE	168
W2MMD	157
N4HB	137
W3SO	121
50 MHz Mults	
K5QE	104
WD9EXD	65
N2NT	55
N4HB	47
AD4ES	42
144 MHz QSOs	
N2NT	270
K5QE	149
W3SO	133
N4HB	107
VE3MIS	105
144 MHz Mults	

K5QE	89
N2NT	45
N4HB	37
W3SO	37
WD9EXD	36
222 MHz QSOs	
N2NT	67
W2MMD	31
K5QE	22
VE3MIS	14
N2JQR	10
222 MHz Mults	
N2NT	21
K5QE	15
VE3MIS	8
W2MMD	7
W2CCC	5
WB4WXE	5
WD3R	5
432 MHz QSOs	
N2NT	75
W2MMD	43
VE3MIS	34
W3SO	32
K5QE	29
432 MHz Mults	
K5QE	23
N2NT	21
W3SO	18

VE3MIS	15
W2MMD	8
1.2 GHz QSOs	
WO1S	3
1.2 GHz Mults	
WO1S	3
Unlimited Multioperator	
50 MHz QSOs	
N3NGE	281
KE1LI	220
N8GA	172
W4NH	142
WØRSJ	120
50 MHz Mults	
N8GA	62
N3NGE	54
W4NH	51
KE1LI	38
KD2LGX	35
144 MHz QSOs	
N3NGE	243
KE1LI	122
KD2LGX	115
N8GA	99
W1XM	77
144 MHz Mults	
N3NGE	42

N8GA	39
KD2LGX	35
W4NH	27
KE1LI	25
222 MHz QSOs	
N3NGE	98
WA3EHD	37
KD2LGX	27
WØRSJ	24
KE1LI	21
222 MHz Mults	
N3NGE	24
W4NH	11
KE1LI	8
KD2LGX	6
WØRSJ	5
432 MHz QSOs	
N3NGE	121
WA3EHD	39
KD2LGX	38
W4NH	31
KE1LI	30
432 MHz Mults	
N3NGE	28
W4NH	16
KD2LGX	13
KE1LI	9
WØRSJ	7

902 MHz QSOs	
N3NGE	28
WA3EHD	16
WØRSJ	12
KD2LGX	8
W3RFC	3
902 MHz Mults	
N3NGE	12
KD2LGX	4
WA3EHD	3
WØRSJ	3
W1XM	2
1.2 GHz QSOs	
N3NGE	28
W7MRF	19
WA3EHD	18
W1XM	17
WØRSJ	11
1.2 GHz Mults	
W1XM	12
N3NGE	7
W7MRF	4
KD2LGX	3
KE1LI	3
W4NH	3
WA3EHD	3
WØRSJ	3
2.3 GHz QSOs	
N3NGE	20

WA3EHD	10
WØRSJ	5
W1RGA	1
2.3 GHz Mults	
N3NGE	6
WA3EHD	3
WØRSJ	2
W1RGA	1
3.4 GHz QSOs	
WØRSJ	2
3.4 GHz Mults	
WØRSJ	1
5.7 GHz QSOs	
N3NGE	9
W1RGA	1
5.7 GHz Mults	
N3NGE	5
W1RGA	1
10 GHz QSOs	
N3NGE	6
W1RGA	1
W7MRF	1
10 GHz Mults	
N3NGE	4
W1RGA	1
W7MRF	1

47 GHz QSOs	
N3NGE	1
47 GHz Mults	
N3NGE	1
Light QSOs	
N3NGE	2
WA3EHD	2
Light Mults	
N3NGE	1
WA3EHD	1