ARRL June VHF Contest 2018 Full Results

By Phil Koch, K3UA (k3ua1541@me.com)

How about those digital modes!

Not only did we have a fantastic 6-meter sporadic-E (Es) season compared to recent years but we also had FT8 and MSK144 digital modes for additional QSOs/grids. The FT8 mode provided an excellent opportunity to work DX as well as single- and multiple-hop paths while utilizing simple antennas and low power. Of course big antennas are much better — the Little Pistol was able to enjoy amazing success working new grids and new countries utilizing FT8.

Notes on FT8

If you suddenly see your FT8 spectrum "light up" on 6-meters in the June contest, it may be time to take a break from FT8 and go to SSB and CW to take advantage of the higher rates possible on those modes. Most of the top scoring stations on 6-meters did just that, at least from the eastern half of the country.

And yes, there were the ongoing problems with FT8 (and its sister meteor-scatter-optimized mode MSK144) and the mix-up between contest mode (allows quicker contest exchanges) and normal mode. The incompatibility when two stations with their "modes crossed" can be very frustrating as the QSO can take 2-3 times as long to complete. At press time, releases of *WSJT-X* 2.0 are under evaluation, which will make this problem a distant memory by the 2019 June contest.

Notes on MSK144

Es was not as prevalent for those participants far west of the Mississippi. It appeared non-existent in the Pacific Northwest. If there is no Es, the MSK144 mode in *WSJT-X* allows meteor scatter contacts at distances similar to single-hop E-skip. If you haven't tried this mode, consider giving it a spin on 6 meters in the next VHF+ contest. You can watch people setting up MSK144 skeds on the PingJockey webpage (www.pingjockey.net/cgi-bin/pingtalk) and the best time of day for meteor scatter is in the early morning. This year's contest had a nice Sunday afternoon and evening opening on 6-meters for the eastern half of the country, muting the advantage of the extra QSOs and grids available on MSK144.

In summary, keep an eye on conditions and adjust your operating accordingly. Take advantage of the rates available on SSB and CW when the band is fully open.

And there was some DX...

Although the June VHF Contest activity is primarily from North America there are some faithful calls active from the DX side. There are a few Mexico and Caribbean stations to represent the South America and European Continents.

Only one log was received from Europe — the SOHP log from YO9HP. But other logs received indicated that there were other Europe stations active on 6-meters.

From Mexico there were six entries with XE2CQ having the high SOHP and XE2JS having the top SOLP score from XE. XE2N (XE2DLC and XE2N, ops) had the only LM score from Mexico. South America was represented with the SOLP log from HK3W and the LM log from PJ4V.

From North America we had the SOLP log from VP9I (WA4PGM, op) and the SOLP log from CM2RSV. Thanks to all for being active and submitting logs.

Category Abbreviations

Single-Op HP/LP – SOHP/SOLP
Single-Op Portable – SOP
Single-Op 3 Bands Only – SO3B
Single-Op FM Only – SOFM
Multiop Limited/Unlimited – LM/UM
Rovers Classic/Limited/Unlimited – R/RL/RU

Multiop Effort — Six Meters from Bonaire

Regarding FT8, it "saved the day" for the PJ4V multi-op from Bonaire with NØJK, WØLD and N7BHC as operators. As recounted by Jon, NØJK, "We had planned to run high power with a M2 6M1K2 amplifier. The antenna is a 7-element LFA Yagi at 60 feet from a high hill overlooking Bonaire. Things went well preparing for the contest. We looked forward to running stations on SSB and CW. But right before the contest started, disaster struck — the SWR went high on the Yagi!

"We tried different coax connectors and even checked the Yagi on the tower. No luck. But oddly, the Yagi still seemed to have its normal pattern and gain. We used the YV4AB beacon as a reference and the strength was the same despite the sky-high SWR. We had a cavity filter,

which was put in the feed line. With the filter, we were able to tune the SWR down to 1:1 and use the FT-897. But the M2 amplifier kept tripping, so we were at about 60 watts for the contest.

"We tried to get things going on SSB and CW at the start — no replies to many CQs. But PJ4V was able to steadily put people in the log thanks to the FT8 mode. 6-meters was better for us Saturday. It was first open via sporadic-E at the start of the contest to the southeastern states, then gradually moved north to W1, W2 and W3. Later in the afternoon it shifted to the west to the Gulf Coast in Texas, where we worked the EL58 and EL84 grid expedition stations.

"One issue we and many others noticed was lots of callers on FT8 were not in "contest mode." In the contest mode FT8 exchanges only grid squares. When both stations are in contest mode an exchange may be completed in under a minute on FT8. But if not I had to manually change the exchange and hope the other station gave their grid. I lost many contacts due to other stations not being in contest mode. Perhaps stations did not use contest mode because they were using another logging program for FT8.

"Finally the opening drifted up to the Midwest and we put some W8, W9 and WØ stations in the log. We had good decodes on K2DRH, WQØP, and NØLL but could not complete QSOs due to heavy QSB. Es fizzled out by 0200Z. Sunday was very slow in Bonaire on 6 meters. Only a couple of North American stations were decoded in the morning on MSK144 but we had already worked those calls.

"We took the morning off to eat breakfast at a great beach side café while monitoring the ON4KST chat page. That afternoon, 6-meters opened to Europe and we logged a number of stations in Greece. Peter, PJ4NX and Martin, PJ4X called in on 6-meters and we invited them to visit the station. They came by the shack and we had a nice visit. Both were very curious about the FT8 setup and watched us make a few FT8 contacts.

"The last contact we made was with WA1EAZ in FN42 near the end of the contest. We decoded a number of New England stations including W2SZ/1, but had no success getting their attention. Later we found out that there was an intense sporadic-E opening between the northeast states and the Midwest on Sunday afternoon. DX stations closer in such as VP9I and CM2CSV had better luck.

"Bonaire is within double-hop Es distance of most of North America. Only Florida and the Gulf Coast are within single-hop range. In total, we ended up with over 100 contacts. We were glad we had set up on FT8 — only 4 contacts were made on SSB/CW!"

Single Operator Results

The SOLP winner once again is Bob, K2DRH with a improved score over his 2017 effort. For Bob this is his 7th straight win in a row and now his 15th win overall — a very Fine Business job, Bob! Once again, Dale, AF1T defended his 2nd-place SOLP spot from last year. While we are discussing defending previous Top Ten positions, Mitch, W1SJ at WB1GQR held his 3rd-place from last year. You guys must get together and arrange this! For 2018 the 4th and 5th-place finishers are W9GA and K5RQ respectively. W9GA upped his position over last year, moving from 10th to 4th. Excellent!

Single Operator, Low Power

K2DRH	283,554
AF1T	186,874
WB1GQR (W1SJ, op)	153,080
W9GA	79,348
K5RQ	78,942
N8RA	63,772
W4RAA	58,917
VE3DS	53,298
NØLL	50,949
K5QB	46,761

Now for the SOHP results: Many of the same operators returned to the Top Ten. Our top SOHP spot for the 2018 contest goes to Joel, W5ZN. Joel moved up to the top slot from his 3rd-place showing last year. Jeff, K1TEO who was last year's winner for SOHP lost a tower during a weather storm but managed to erect a temporary 6-meter antenna and work some of the activity. Jeff will be back again soon with the competitive station and spirit that we all know.

Single Operator, High Power

W5ZN	312,075
K1RZ	267,300
K1TO	234,132
WØUC	186,167
KC4PX	157,356
K9CT	153,300
K1TR	146,769
K1KG	143,081
W3IP	125,385
W7XU	114,492
K3ZO	114,492

Dave, K1RZ bettered his 2017 4th-place finish to land 2nd this year. Dan, K1TO also an accomplished HF contest champ upped his 2017 showing of 7th to finish 2018 in the 3rd position. Dan only operates 6-meters so without a

single-band category he knows he has to compete with the multi-banders, so nice job, Dan! Paul, WØUC also improved on his 2017 position by moving from the 6th spot to this year's number 4 position. Ivars, KC4PX landed the 5th and Craig, K9CT slides slightly from 5th in 2017 to number 6 in this year's event. Note the tie for 10th between W7XU and K3ZO! Congratulations to all.

Zach W9SZ braves all kinds of weather to take his gear QRP Portable. (Photo courtesy Zach Widup, W9SZ)

Single Operator Portable Results

WA2TMC is the winner this year — up from 4th in 2017. Bruce beat his 2017 score by nearly 10 times! The number 2 slot goes to David, W4DVE who had the top position last year — almost duplicating his score from last year. Alex, K7ALO was third, down a level from his number 2 spot in 2017. And Tom, W4RXR is down one slot from 3rd to 4th this time around. K7ATN broke into the Top Five in 5th place. Great job!

Single Operator, Portable

WA2TMC	42,582
W4DVE	8,670
K7ALO	4,648
W4RXR	4,387
K7ATN	3,740
WB2AMU	2,080
W6KKO	1,560
N3KCM	1,184
KQ2RP	1,148
VE2NCG	880

Single Operator, 3 Band Results

The 2018 running of the June VHF Contest marks the second year for the new categories of SO3B and SOFM. This year's winner for SO3B is Pete, K2PS who moved up from second place in 2017. Number 2 belongs to Joe, WA4GPM. Joe was 7th in 2017. Jeff, W2FU is in 3rd place and Tor, N4OGW gets the 4th spot while KR1ST is number 5. The difference between W2FU and N4OGW was only a few hundred points thereby making it a must to copy those exchanges and calls for the best accuracy.

Single Operator, 3 Band

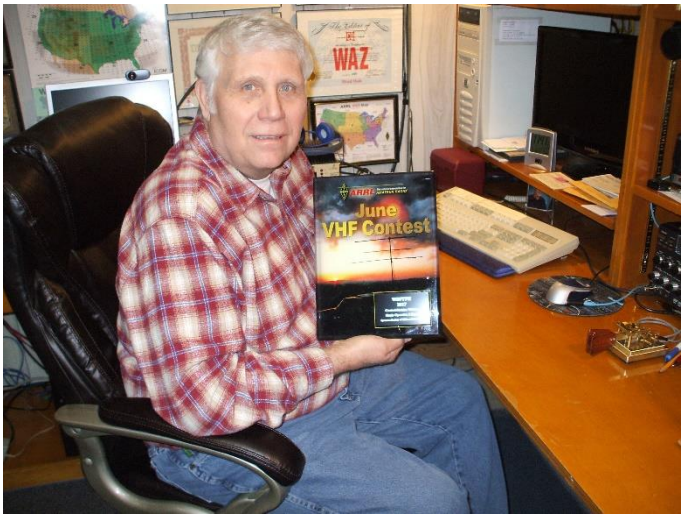
K2PS	90,440
WA4GPM	60,775
W2FU	42,672
N4OGW	42,224
KR1ST	36,295
KK4MA	35,775
AA5AM	34,181
AD5A	27,984
WB5TUF	27,060
KØNR	24,831

Single Operator, FM Only Results

This year's SOFM winner Mark, W6IA had an excellent showing with 1,500 points to easily outdistance the pack by a sizeable margin. The number 2 spot belongs to Jim, N2UZQ with 396 points. The remaining Top Ten finishes are all very close to the other's scores ranging from 244 to just under 50 points. To make the Top Ten box, every QSO became quite important!

Single Operator, FM Only

W6IA	1,500
N2UZQ	396
K7IMA	244
WB6ETY	224
KK6VIX	114
K3TW	99
N9VM (N1VM, op)	98
VA2DG	85
N6TCE	85
AA6XA	48



Gil, WB9TFH winner of the Central Division SO3B plaque for the 2017 June VHF Contest (Photo courtesy Gil Van Blaricom, WB9TFH)

Multiop Results – Limited and Unlimited

How about those Limited Multioperator scores?

Marshall, K5QE's big station from the South Texas flatlands has once again has risen to another win in the LM category for the 6th straight time! Wow! The crew of N2NT, N2NC, and WW2Y worked their wonders with the N2NT station and moved to the 2nd position — up from number 3 the year before. Be sure to read their story later in this article about their efforts. In the number 3 slot for 2018 we have AA4ZZ, improving from the 5th spot in 2017. The W3SO crew from Central PA placed in position 4, improving from 6th place last year. And the team from K1BX jockeyed solidly into number 5 for 2018.

Limited Multioperator

K5QE	394,605
N2NT	280,356
AA4ZZ	246,864
W3SO	234,070
K1BX	220,440
W2LV	157,780
NV9L	132,800
N4WW	107,984
NØEO	100,130
K2BAR	75,120

And how about those Unlimited Multioperator scores?

The W2SZ crew racked up another win in the UM category with an improvement from almost 712K in 2017 to nearly 753K this year. The Mt. Greylock Expeditionary Force has now won their 28th June VHF contest for the UM category. Amazing! Holding onto 2nd place is the Mt. Airy VHF Radio Club (aka Pack Rats), W3CCX. The group at K2LIM changed from 2nd-place LM in 2017 and decided to enter as UM, landing the 3rd position. The ops at W9XA pushed to the number 4 position in 2018 — up from number 7 in 2017. W4IY was 5th while WQØP, N8ZM, WE1P, VE3WCC, and KV1J rounded out the remaining Top Ten positions. A big congratulations to some very big efforts!

Unlimited Multioperator

W2SZ	752,955
W3CCX	613,600
K2LIM	446,652
W9XA	256,470
W4IY	186,416
WQØP	147,200
N8ZM	120,120
WE1P	104,144
VE3WCC	83,053
KV1J	72,435

And there were Rovers...

Classic Rovers (R) can haul equipment for as many bands as the multi-ops to multiple locations. By doing so they help fixed stations through the lean hours with new grid multipliers from running the bands.

For the Classic Rovers, Russ VE3OIL/R moved to the top of the pile in 2018 to win after being number 2 in 2017. Hats off to you Russ! Jarred, KF2MR/R improved his position from the 4th spot last year to this year's number 2 position. From the Pack Rats we have Russ, NN3Q/R who landed the 3rd position. Steve, AG4V/R improved his showing from last year by moving from 5th to 4th in 2018. Number 5 in 2018 is Tom, WA8WZG/R.

Classic Rover

VE3OIL/R	110,136
KF2MR/R	88,368
NN3Q/R	40,320
AG4V/R	36,994
WA8WZG/R	26,523
KD5IKG/R	24,938
K2ET/R	21,758
W5VY/R	21,620
K2LDT/R	18,096
KV2X/R	17,907

Limited Rover

K2EZ/R	72,334
K2QO/R	46,898
WW7D/R	31,920
KA5D/R	22,644
KØBBC/R	19,656
N2DXT/R	17,043
W9YOY/R	15,990
W1RGA/R	13,980
AE5P/R	13,860
N6RH/R	12,512

Unlimited Rover

VE3SMA/R	55,110
NØLD/R	47,040
K5SRT/R	37,291
K1SIG/R	33,120
N6JET/R	19,600
KD2IRH/R	8,064
VE7AFZ/R	816
WB8TGY/R	720

In the Limited Rover (RL) group, Andrea, K2EZ/R bagged a repeat win, racking up over 72K to easily outrun the second-place finisher Mark, K2QO/R. Darryl, WW7D/R, 2nd in 2017, made the 3rd-place slot. Be sure to read Darryl's summary of his effort later in this write-up. Kyle, KA5D/R is 4th, sliding slightly from his 3rd-

place level in 2017. Matt, KØBBC/R hits the number 5 slot in 2018. Great job everyone!

And finally for those that Rove…the Unlimited Rover (RU) showing. Cementing himself as the winner for 2018 is Steve, VE3SMA/R. Steve was 4th last year in the LR category and decided to give Unlimited a try. Great job, Steve! Repeating in 2nd place from last year is Randy, NØLD/R. Number 3 is Sid, K5SRT/R and numbers 4 and 5 are K1SIG/R and N6JET/R, respectively. Congrats to all.

Club Competition was Fierce

The Affiliated Club Competition for the 2018 June VHF Contest has several position changes from ups and downs to repeat winners.

Affiliated Club Competition

Club	*Score*	*Entries*
Unlimited		
Society of Midwest Contesters	1,156,768	65
Potomac Valley Radio Club	1,063,771	60
Medium		
Mt Airy VHF Radio Club	1,547,492	32
Florida Contest Group	673,585	24
North East Weak Signal Group	557,984	16
Yankee Clipper Contest Club	495,396	21
Northern Lights Radio Society	381,176	13
Contest Club Ontario	342,761	16
Rochester VHF Group	310,617	17
Florida Weak Signal Society	307,439	9
Carolina DX Association	273,271	6
Badger Contesters	270,046	15
Arizona Outlaws Contest Club	229,146	26
Central Texas DX and Contest Club	180,131	8
Pacific Northwest VHF Society	150,448	31
Alabama Contest Group	142,188	10
New Mexico VHF Society	131,571	16
Michigan VHF-UHF Society	102,630	5
Tennessee Contest Group	100,221	7
Southern California Contest Club	85,190	16
North Coast Contesters	81,581	5
Frankford Radio Club	76,163	13
Texas DX Society	53,682	4
South East Contest Club	53,161	5
Pottstown Area ARC	48,292	3
Minnesota Wireless Assn	48,182	9
Grand Mesa Contesters of Colorado	46,377	8
Roadrunners Microwave Group	41,224	6
Kentucky Contest Group	35,967	5
Mad River Radio Club	35,429	9
Northern California Contest Club	22,477	19
Hudson Valley Contesters and DXers	18,764	4
Kansas City Contest Club	12,250	3
South Jersey Radio Assn	11,457	4
DFW Contest Group	10,953	3
Mother Lode DX/Contest Club	3,542	3
Western Washington DX Club	1,485	3
Local		
Eastern Connecticut ARA	99,327	6
Chippewa Valley VHF Contesters	64,832	3
Niagara Frontier Radiosport	60,165	4
CTRI Contest Group	33,868	3
Bergen ARA	26,709	6
Meriden ARC	18,925	4
Bristol (TN) ARC	10,804	5

In 2018 the Unlimited category results are identical to 2017 with the Society of Midwest Contesters (SMC) closely edging out the Potomac Valley Radio Club (PVRC). Congrats once again to both of these highly competitive contest clubs. The SMC and PVRC club totals are both up from 2017 – from under 1 meg to both over the 1 meg mark. Considering the SMC average points per log submitted was 17,960 and for the PVRC the average points per log was 17,730 — resulting in only a 230 points per log difference. This shows just how close these two club scores are this year. Amazing! For more details about the SMC be sure to read Bob, K2DRH's sidebar about the club.

In-depth Stories and Features

Be sure to read the detailed discussions and blow-by-blow reports of the contest provided by several of the top stations; Single Op, Multiop, and Rovers. They give a detailed look at what the contest was like in their area and in their categories.

The Medium Club category's winner is the Mt Airy VHF Radio Club – moving up from the number 2 position achieved in 2017. Also known as the Packrats, they broke the 1.5M point mark — up from 2017 with about 1.135M points. The number 2 score is from the Florida Contest Group which improved from 4th in 2017. The North East Weak Signal Group slid to 3rd from their 1st-place finish in 2017. The Yankee Clipper Contest Club made a huge move from 13th place in 2017 to 4th in 2018. And rounding out the Top Five we have the Northern Lights Radio Society at 5th, moving up from 7th the previous year.

Once again, the Local Club winner is the Eastern Connecticut ARA. The Chippewa Valley VHF Contesters Club landed the second spot for 2018. The Niagara Frontier Radiosport club made a nice move, up from 8th in 2017 to 3rd in 2018. The CTRI Contest Group is 4th in 2018 down from the number 2 spot in 2017. Finally, the Bergen ARA is in the 5th slot, sliding slightly from their 2017 3rd position. A great job by all.

Congratulations to all for excellent jobs in the various club categories. It's always great to see clubs rallying the members to be active and make some QSOs regardless of which contest it is.

HF Ops Serious about VHF Contests

What happens when some HF contest guys get serious about VHF contests... and operate in them a lot? We are talking about the very active crew of N2NT, N2NC, and WW2Y when they operate LM from N2NT.

The N2NT VHF station is interleaved among a primarily HF station with the following breakdown of equipment and antennas:

Station 1

- K3s +DEMI transverters (222/432)
- 50 MHz Harris solid state amp ~1200W / 2 x M2 6M7JHV at 55'/35'
- 222 MHz Larcan solid state amp ~ 700W / M2 222-5WL at 65'
- 432 MHz brick + Henry 3cx800 amp ~500W / 2 X K1FO 22 ele (horizontally stacked) at 60'
- Automated bandswitching: Just type a frequency into *Wintest* for QSY to any band 50/222/432
- Top 50/222/432 MHz antennas same rotator-mast

Station 2 – Usually dedicated to 144 MHz

- K3 + DEMI transverter
- 144 MHz Larcan solid state amp – 1000W
- 2 x M2 2-meter 12-ele at 105'/115'

In this year's contest the N2NT crew had several observations concerning conditions and propagation. There was very little 6-meter Es on Saturday except for some spotty openings to the Florida area. Good 6-meter Es on Sunday started around 1600Z through 1700Z and was mostly single-hop. The Es shifted around a few times from W4/W5 to WØ/W9/W8 resulting in 151 total grids.

When the band was open there was good activity on SSB and CW. Once they got the good opening they were trying not to get tempted into "DXing on FT8" — and it can be very tempting! You've always got to max out the score when the band is open by working SSB and CW stations at higher rates.

On 144/222/432 the tropo conditions were flat to normal. They did call CQ a lot on 6-meters and 2-meters and used chat pages like ON4KST to set up longer DX QSOs but supplemented this method with calling CQ.

Here are N2NT's best DX noting likely propagation and QSO/Grid totals on each band:

50 MHz:	N6GP DM03 2,482 mi (Es)	600/151
144 MHz:	NØKK EN35 1,002 mi (MS)	249/46
	AA4ZZ EM96 486 mi (tropo)	
222 MHz:	AA4ZZ EM96 486 mi (tropo)	72/25
432 MHz:	VE3ZV EN92 347 mi (tropo)	78/22

The main goal is to have fun!

Being competitive and winning and/or making the Top Ten or Top Five is a great goal and aspiration but the time on the air while actually operating is what it is all about. When the contest finishes and you see how well you did, be sure to always reflect back to what it was like during the contest while operating. Too many times we feel as though the contest effort may seem wasted if we did not win or make whatever top spot goals we had. Let's enjoy the moments of working that new grid, that new country, that new state or that new meteor scatter QSO, etc.

Soapbox Galore!

Don't miss the compilation of comments. Many "First Contest!" and a lot of discussion pro and con on the new FT8 digital mode.

And a special thanks to Bob, K2DRH for his guidance; to John, N2NC for advice; and also to Ward, NØAX; Lenny, W2BVH; Craig, K9CT; Darryl, WW7D; and Chuck, N6KW for their encouragement.

Station Contest Reports

These stations contributed stories, photos, graphics, and memories of their contest experiences. We are glad to have them — maybe we'll see yours next year! – *Ed.*

June Contest Results at K1RZ

By Dave Petke, K1RZ, (Reprinted with permission from the Pack Rats July 2018 issue of Cheese Bits)

A June contest with some E-skip. Plus *WSJT-X*. Plus Rovers! Then throw in a few thunderstorms with close-by lightning. Quite a combination. All considered, it was great fun! But then EVERY contest on VHF is great fun!

The first few hours were spent working all bands 6-meters through 10 GHz, chasing Rovers (WA3PTV/R, KD3PD/R, NN3Q/R, K2EZ/R, W3ICC/R, N2XRE/R, KF2MR/R), calling CQ, tuning the bands, shutting down when the lightning got close, turning back on, moving stations up the bands. In other words, normal operations. I spent time reaching out to the multi-ops where possible and bouncing to FT8 for short periods.

Starting at 2047Z for half an hour I worked KE4AZZ, N2RM, K5RQ, K1KNQ, N4TWX and AC4TO on 6-meter phone in EL87 / 88 / 89 / EM70...thinking "OK - IT is starting", like it had earlier in the week. But the "IT" didn't start at that point. I continued with normal non-E skip regional operations. Later at 2316Z I worked K4QD on FT8 but no other distant stations. I then returned to local operations running the bands, etc. At 2355Z I worked K1TO and WB4TDH (both EL87) on phone, and then WB4TDH (EL87) on CW. In next few minutes there was K2PH (EL98) and WD5F (EL87) on CW and then WD4AB (EL95) and KG4QIV (EL86) on 6-meter phone.

Still wondering if "IT" was here yet. No - not yet. Worked more fixed stations and multiops W3RFC, W3CCX and the rovers, now with VE3SMA/R all in the region. There were reasonable tropo conditions to Stephen, VE3ZV (EN92) and Peter, VA3ELE. I worked both through 2304 MHz. I also picked up local station Chip, WA4VHF on eight bands using VHF rigs, mixers, amplifiers and broadband antennas, off his deck, looking down at me from 42 km away.

W3CCX — thank you Packrats for bringing it all together again on Camelback Mtn in FN21hb. Sorry for not getting up there, but glad we could work you easily on the ten bands. And we completed with an 8-band run from 222 MHz to 10 GHz in only 10 minutes! You guys are outstanding on passing stations up the bands.

Just after local midnight I switched to MSK144 on 6-meters and 2-meters and picked up some distant grids through the morning hours. Enjoyed running into the regulars on that mode. About 1300Z back on 2-meters on FT8 picked up KE1LI (FN41), VE3WCC (FN15), W2SZ (FN32), and both KV1J and N1JEZ (FN44). Then Bill W2RMA/R from Pittsburgh checked in to say there was an intense storm front over the Allegheny Mountains. I checked KØSM's rain scatter program with graphical analytics, pulling in the various NOAA weather radars showing we had an excellent chance for rain scatter on 10 GHz. I worked Bill easily on 10 GHz via rain scatter for EN90xh (267 km distance). KØSM's rain scatter program showed several other locations in the region could have also been worked. (This summer, Bill and I decided to test rain scatter between our stations and with our GHz neighbors, every time we see storm fronts in the region.)

I worked W2RMA/R again through 2304 MHz from EN90xh. Worked more rovers K2EZ/R and WA3PTV/R. Worked regular contact Paul, K1GX through 2304 MHz. Paul had extra duties, as he was filling in for Jeff, K1TEO who lost a tower and all antennas in May to a microburst type weather event. Jeff was back on 6 meters, but I missed him.

Then at 1747Z I returned to 6-meters with friend W3HMS (FN10), finishing a 5-band run, and there was N7VD in DM43, with my antenna still to the north to work John! This WAS "IT" — the elusive "IT"! I turned west and stayed there the rest of the afternoon. Mostly phone, and a few CW contacts, and a few FT8 contacts when things slowed for a few minutes before 50 MHz came back strong again. Breaking every so often — K2EZ/R (thanks Ria, N2RJ, and Andrea), and thanks W3ICC/R (Drex and Paul, W2PED). Thanks W4IY multiop — you are always there for FM08. Thanks W3SO multi-op in FN00. We all appreciate the massive efforts you use to bring your stations on the air for these contests. Thanks K2LIM multi-op in FN12mg, Ken, Al, and others, plus guest op Ray, N3RG. You guys have been solid for years. Will miss you all beginning in 2019.

Switched to 6-meter FT8 at 1924Z as I could see PZ5RA (GJ25) and VP9I (FM72) on DX Maps (dxmaps.com). This was my only DX.

I could see incredible station density across the whole central and eastern part of the country solidly represented on the DX Maps (www.dxmaps.com). I should have used DX Maps more often. I heard others say Europe was in, but I did not work any.

At 2016Z I took a short break to work Bob, W2SJ thru 3456 MHz and Mike, N2DEQ thru 902 MHz, both stations in FM29. More Qs with rovers W3ICC/R, VE3SMA/R, and K2EZ/R. And then back on 6-meters as it was still solid with signals, starting with N4OGW (EM53), N9UDO (EN53), KYØO (EM29), and more central US. Worked Jerome, K3GNC through 2.3 GHz, plus others in the region. Then it was back to 6-meters at 2243Z starting with KP4TR (EL87), AF4K (EL98), and K4EA (EM74) to end my E-skip operations for the contest at 2245Z.

I was able to do two more grids with Drex and Paul, W3ICC/R, and K1KG (FN42) thru 902 MHz. N1JEZ (FN44) on 222 and 432. Then my neighbor Maurice through 10 GHz. Worked my close neighbor Ed, W3EKT, now with the addition of 5 and 10 GHz, for ten bands. Glad you guys were on. Finished six bands with close neighbor Mike, W3IP. Mike, thanks for your help earlier this year to get my 222 and 432 transverters stabilized to effectively work FT8 on those bands. These mods allowed me to complete FT8 contacts with Ken, KU8Y in EN51 on 222 and 432 MHz under extremely unstable atmospheric conditions across the region.

Thanks to Lenny, W2BVH (FN20up) for working me through 1296 MHz. It is always good to get to talk with you. Good to finish off the bottom four with Bill, AA2UK (and Bill, thanks for all the wisdom and advice you bring

to us all with regards to finer points of FT8 and MSK144). And thanks Terry, W8ZN and Margie, K4MEP for working me through 3.4 GHz. You guys are awesome! I know you will soon be on as beacons from your new QTH at FM09te. Also glad to hear Brian, K3MEC (N3IQ) as he continues to build a mountain station, close by at FM09. Mike, WB2RVX, thanks so much for connecting with me right at the end to work all our bands through 10 GHz. Thanks Ken, KU8Y (EN61uw) for 144 (CW), 222, and 432 (both FT8) for contacts near the end. And finally, Glenn, WB2JAY (FN30) whose patience got us the 222 contact!

Finally I am so glad we all have the ON4KST 144/432 Region 2 chat page to set-up these contacts. Those folks are amazing for facilitating this essential chat page.

Operating from the Pacific Northwest...

WW7D Roves the 2018 June VHF Contest

By Darryl Holman, WW7D

I roved in the 2018 June VHF contest. It generally went well, and there were lots of other rovers on the air in the Pacific Northwest. Overall, I was pleased. The only negative was a total absence of sporadic-E (Es) propagation for the weekend here — zip, zero, zilch. There were maybe one or two superstations that found a brief opening here and there from the Pacific Northwest, but I heard no Es stations, which is pretty unusual for the June contest.

The contest started out in Ocean Shores, WA in CN76 and then north 1/2 mile to the CN77 line. Saturday afternoon is a long trek to Kalama, WA to work both CN85 and CN86, and finally an evening trip into CN95 on the Columbia River near N. Bonneville, WA. This year I stayed in a motel in Woodland, WA for the night.

Sunday morning began with a drive from Woodland to Mowich Lake Road near Carbonado, WA, which permits me to hit CN87 at 2,160′, CN86 at 3,000′ and CN96 at 3,100′. Next, CN97 and CN87 are activated from Central Park, Issaquah, and then off to CN88 at a school parking lot (400′) in Lake Stevens. The contest ends on the side of Mt. Pilchuck at about 3,000′.

First, I used to have a sweet spot in CN85 on an empty lot (with the owner's consent) that regularly got me into the Puget Sound and western Oregon on all four bands. Alas, the lot has been developed and there is a family living where I used to park my rover. I tried a spot at the same elevation slightly south of there. It gave me great reach to the south, but part of Green Mountain blocks me to the north. I'll look for something better for September.

The second change was Sunday afternoon. My CN98 spot is usually the side of Mt. Pilchuck on a national forest service road at about 3,000′. This year that forest service road was still gated shut by the start of the contest. Instead, I went to the Lime Kiln Trailhead (a Washington State park) at about 600′ for CN98. It worked well, but not as well as sitting at 3,000′.

The equipment was almost identical to last June as shown here.

- 6-meter SSB/CW: Kenwood TS-480sat with a TE Systems 170W 6-meter brick
- 2-meter SSB/CW: Yaesu FT-857d (#1) with RF Concepts 170W brick
- 222 MHz SSB/CW: Elecraft XV222 transverter used with Yaesu FT-857d (#2), plus TE Systems brick for 100W
- 432 MHz SSB/CW: Yaesu FT-857d (#1) with RF Concepts brick for 100W
- 6-meter FM: TYT9800plus (#1)
- 2-meter FM: TYT9800plus (#2)
- 223 MHz FM: Jetstream JT220M with 223 MHz into Mirage 100W brick.
- 440 MHz FM: TYT9800plus (#1)

...A total of six radios, one transverter, and five bricks. (For non-VHFers, "bricks" are solid-state amplifiers about the size of…well…a brick. Typical bricks amplify mW or a few watts up to 50 – 200 W. – *Ed.*)

I rebuilt my 11 element 222 MHz and 8 ele. 2-meter beams as the wooden booms snapped in half during the January contest after failing to dodge a low hanging tree. The 6-meter Yagi required a bit of work, too. I haven't repaired my 6-meter amplifier, so I was running only 100W.

It rained on and off all weekend. The only serious issue I had during the contest was when my windshield wiper motor decided to die on Saturday night. It wasn't a fuse. The lack of wipers changed the timing of some of my stops, as I would wait until the rain subsided before traveling. As it turned out, I got pretty lucky with the breaks in the rain.

There was a good turnout of other rovers. My log included AC7SG/R, AL1VE/R, K7BDB/R, KE7MSU/R, NR7RR/R, VE7AFZ/R, and WA7BBJ/R. On Sunday afternoon, Todd, NR7RR and his wife Toni met me on the highway in Black Diamond for a brief chat.

After removing duplicates, here are my results for 2018:

- Number of QSOs: 512
- Points: 701
- Grids Worked: 38
- Grids Activated: 10
- Total Mults: 48
- Score: 33,648

NN3Q/R June VHF Rove Report

By Russ Lamm, NN3Q (Reprinted with permission from the Pack Rats July 2018 issue of "Cheese Bits")

As June rolled around, preparations were made to populate the rover van. Normally after each contest the K3s, computers, and large monitor are removed from the van. It's not so much a security issue but more of a protection issue as the van is parked outside and the interior of the van experiences large temperature swings. This may not be the best environment for these sensitive electronic devices. The installation went well and the radio checkout was nominal. Microwave offsets were noted, and recorded.

For the June contest our 6-meter station was made FT8-capable. Certain software additions had to be made and with the help of Roger, W3SZ, all necessary software was added to the computers, allowing *WSJT-X* to log directly into *N1MM+*. The microwave station had an addition of a HDSDR allowing much better resolution to see weak signals on the large monitor.

Planning the rove, we decided to visit FM08us, the famous Hogback Overlook (3,400+feet ASL) inside the Shenandoah National Park on Skyline Drive. We would then rove back to PA and stop at a new FN10 site just east of Harrisburg. On Sunday we planned to follow our normal routine of FN10 (Pismire Ridge), FN11 (solely to work W3CX), FN20bi (Reading), and finish in FN10xi.

My calculations for the drive to FM08us were off by about 45 minutes, and we arrived after the 2 PM start on Saturday. After a quick setup we were on the air and it was fantastic!! After experiencing how great this site works, our rover plans for the day were changed. Hogback Mountain produces contacts almost at will and is all that you can anticipate as a rover. We parked on this little hill for 3-1/2 hours until the clock made us migrate to the valley below. While in motion Russ operated, as best that could be done from inside a noisy (mechanical and electrical) moving van. The drive back to the home QTH was late in coming and two tired ops poured from the van to regroup Sunday morning.

FM08 allowed us to work many stations, with a great run of all ten bands with the W3CCX crew (sort of mountaintop to mountaintop). K1RZ also gave us a great run on 10 bands with his super station.

All week leading up the contest we kept hearing conditions on 6 meters were very good and we observed those conditions during the contest and took advantage when the opportunity presented itself. Being a rover is fun but it sometimes lacks the advantages of fixed stations.

It was not until late Sunday afternoon that we began working "unique" grids (those outside our normal line of sight range). While in FN20, 6-meters finally opened for us and many EL, EM, and EN grids populated the log. This continued for a long time until we pulled the switch around 8:30 PM. We did not work any stations into New England, or Canada.

NE3I/R Fun through Simplicity

By Bob Griffiths, NE3I (Reprinted with permission from the Pack Rats July 2018 issue of "Cheese Bits")

My objective this June was to rove again, avoid frustration, fatigue and injury, visit the W3CCX site, and have fun. Deployment began at Camelback. After checking out the always-impressive operation and obvious camaraderie there, I made multiple laser and lower 4-band QSOs with W3CCX and other autonomous and gourmet operators there and at large. I decided to reposition to the area of Little Gap to look for possible rover sites there.

Winding my way on unfamiliar roads and passing through the thriving mini-metropolis of Little Gap (essentially an intersection), I crossed over a covered bridge (twice because I made a wrong turn), and found the road over Blue Mountain. To my surprise, at the top of the ridge I found the Blue Mountain Resort. At 1,250 feet, with plenty of parking, it had an unobstructed view northwest through Northeast particularly, line-of-sight to Camelback and W3CCX, approximately 16 miles away.

I worked W3CCX on four bands and other stations in FN21 and FN11 only using verticals. I had dinner on the southern slope at the Blue Mountain Drive Inn and from its parking lot, worked stations on 6-meters in FN20, FM70, EL87, EL98, and EL99. On Sunday I operated from some spots near home in FN20 and again with the vertical, worked, inter alia, stations on 6-meters in DM54 and DM32. 67 Q's, 26 Grids, 2600 Pts. Thanks for the QSOs.

K2DRH - Single Op, Low Power Top Score

By Bob Striegl, K2DRH

I put a long description of what it took to get on for this test at the end. It isn't easy to keep all this stuff running! My heart goes out to Jeff, K1TEO a true contest champion who lost one tower to a weather event and it took all the antennas off his other tower when it went down. Jeff is a real trouper who put up a temporary 6-meter beam just to get on and give out points! It wouldn't be the same if he wasn't in my log.

The contest started out pretty good. No Es but guys were there to work on 2-meter and 6-meter SSB for the first hour or so. After an hour that all changed as 6-meters was quiet on the analog side and everyone seemed to retreat to digital FT8. 2-meters was a wasteland — no signals on the scope, no answers to CQs. 6-meter FT8 was hopping with all the locals I normally work on 2-meters and the new frequency of 144.174 MHz we have been using for FT8 with great results up to 500 miles in the mornings was all but abandoned. It was tedious and disheartening to have to look for locals on 6-meters, try to remember if they had 2-meters, work them on FT8 over a minute or so when we could have worked in few seconds on SSB, then pry them loose with 4 or 5 repeated free messages of "W3xxx 144.xxx?", until they realized they had to reply wait for that reply (sometime all I got was "NO") and finally work them there.

FT8's free message of 13 characters is WAY limited to try and direct a QSY request. If you include their call it helps but there is no room for yours. Call plus "QSY 2-meters" gets you back "WHERE?" or "QRG?" instead of just assuming the calling frequency. I'm astounded I didn't see more locals trying to get each other to QSY to make better scores. You can type in a call and 144.2xx or 144.1x and eventually get a response and maybe a QSY but until it catches on it takes a while. (This indicates an opportunity for a standard technique and message to be developed in the VHF+ contest community. For example, "QSY 144.200?" is a clear and compact message. Bob's right that it will take a while but let's start now! – *Ed.*)

I'm also amazed that locals I can see with +05 or better signals (quite audible and moving the S meter) on FT8 seem to have trouble hearing/decoding me and it can take a minute or three to even get to the QSY part! Guess all that aluminum gain causes multipath and maybe some other stuff that disrupts FT8 on the strong ones. I'm flabbergasted that many just kept right on CQing on FT8 right through 20 over band openings when the "channel" was totally choked and their receivers couldn't handle it. While the band was really open there was a literal sea of green of unanswered CQs while my instantaneous ratemeter was hitting 200 plus!

All day long Saturday there was very little Es (a few short bubbles) and nobody on 2-meters. not even in the evening as usual. Some of the stations I work on four bands didn't even bother to set them up and QSYed to 2-meters only with a vague promise of "later' which almost always means never. Unless you were a serious multiband station or rover there were few band runs and like January my 2-meter and above QSOs are WAY down because of this. And of course there were the stations that refused to go into contest mode and failed open when they got "funny

grids". I realize now that some are using *WSJT* programs made for HF that don't have contest mode.

2-meters and above was pretty flat due to all the rain. Many of the local rovers were washed out Saturday and Sunday and couldn't get set up or had to tear down suddenly. Some just had to abort. The wet and foggy conditions severely inhibited UHF and above contacts for the whole weekend. One station 90 miles away I normally work on 1296 SSB I couldn't hear at all even on CW.

Saturday evening the static crashes from lighting kept building. Around the time MSK144 got effective for meteor scatter and things were picking up was when the thunderstorms came back with a vengeance. I had to disconnect in the middle of a sked with W5UHF on 2-meters since the noise went to S9 and the lightning was almost overhead. The storm was so big it lashed us with a deluge from midnight to 5 AM so at least I got some sleep. I ended the day with barely over 150 QSOs in the log.

Sunday morning was still really noisy as the thunderstorms went slowly east and clobbered propagation in that direction. It was tough to decode the pings through the crashes but MSK was effective and I worked several by using the Ping Jockey web page (www.pingjockey.net). My morning sked with a rare grid was a bust and my usual sked with KØAWU failed at 432 MHz due to the weather. I CQed on 6-meter MSK144 but didn't get a lot of random replies — too many on FT8 already! I kept sniping at FT8 for mults and trying to get a QSY or three. It was pretty grim going until around 1400Z when I got a trickle of SSB Es to FL and to TX. That waxed and waned until 1730Z or so when the rate picked up and I started to get some Atlantic FM grids in there too. I have multiple antennas, one fixed on FL, another on TX and was able to bring the low bay of the array (the only one working) on the FM grids to good advantage.

At 1800Z the band suddenly opened to the FN grids in the NE and I got the 2x11 beams that way and started a feeding frenzy of 150 Qs that hour! It has not opened so strong to the NE like that here in a very long time during a June contest, 10 years or so! It ebbed a little during the 1900Z hour and I was able to work several multiband stations and rovers on multiple bands and still put over 50 6-meter QSOs in the log. The next two hours were also 125 plus hours. It was thinning out by 2200Z when I had to tear myself away again to work the rovers that did make it out. You really can't win this contest on 6-meters alone, at least not against a station that can put a decent effort on 2-meters and above.

The skip got really short at one point and I'm sure there had to be some 2-meter Es somewhere. 6-meters stayed open but not as strong for the next hour or two but there was little for me to work that I hadn't already. I didn't get any double-hop at all to the West Coast and there weren't a lot of Es QSOs to the NW, SW, or even normal hot spots like Colorado.

By evening stations realized that there was life on 2-meter SSB and a lot of mults went in the log with band runs and such. Conditions were still way down but it was more like normal and it was actually hard to work, sometimes getting multiple callers in different directions to run the bands all at once. They should have been doing it the day before when 6 was dead! The last hour my cell phone and computer screen was going crazy with 2-meter and above band requests! Where were they all day and evening on Saturday??!!

I ended up with a really good score, but it could have been a great score had I worked all the stations on 2-meters that I normally can! Let's just hope that this sudden surge on 6-meter FT8 helps folks get wise to the true potential of FT8 to ADD mults and such to the score like MSK144 has, rather than just hanging there all day long to try and make the bulk of their Qs. Please be more flexible to work a little analog radio that is much more efficient! FT8 should be a tool, not a be all and end all! Maybe more will get hip to the potential of finding more QSOs on 2-meters when they see a local like me say QSY to 2-meters on FT8! And maybe let's hope that FT8 takes off on 2-meterstoo since it holds a lot of promise for some pretty long QSOs.

Due to family health issues and yard work due to early warm weather, I didn't even get to the usual spring maintenance stuff on the towers (never mind the broken stuff) until Memorial Day weekend.

The 6-meter pair of 11 element beams had high SWR that was traced to a bad N Tee on the power divider: The center fingers on the main coax side were sprung and had it had been arcing internally. The 3456 MHz problem I thought was a relay was really a bad amplifier stage in the tower mounted preamp so after troubleshooting I had to take it down and just put a straight coax between the relays until I can get it fixed. It actually hears better than I expected with all the coax loss. It was then that we discovered the lithium-ion batteries on one of our old 440 FM radios is going bad.

The 2304 MHz Superflex had aspirated water between the jacket and shield spiral and shed water into the connector to the LMR600 rotator jumper. I'm done with using FSJ4 ½-inch Superflex on the tower, it's easier to work with and

cheaper than LMR600, but it gives you nothing but grief due to the poor bonding on the outer jacket to copper spiral causing it to aspirate humid air from any jacket imperfection and sublimate out water that rolls right down into the sealed connectors.

The squirrels also had their way with my 160-meter wire antenna, chewing the rope and causing it to tangle in the 6-meter array elements in the strong spring winds before I noticed and rotated the tower. That bent several elements as well as breaking one off requiring several hours of tower work.

Thursday and Friday nights before the contest the thunderstorms were huge with torrential rain making it difficult sleeping. Sometime between Friday morning and evening the SWR on the 8x7 6-meter array went sky high on any antenna combination and it sounded dead compared to the other antennas. The controller was putting the right voltages to the right relay outputs but when it was connected to the tower box the readings were way off. With reluctance I climbed the tower Saturday morning before the contest to about 70 feet where the relay antenna combiner and matching box is and had my wife, N2KMA switch the controller but none of the relays were pulling in at all (it grounds the antennas by design). Rather than take any time out of the contest to troubleshoot it I hard wired the bottom pair as the most useful for Es, and the quietest pair in a thunderstorm as these were predicted all weekend. It proved to be a good decision!

I'm still struggling with N1MM+ and the Flex 6700 since I use the second VFO for a 2-meters and above slice/panadapter and can't automate two radios with multiple transverters to the second VFO. This leaves me with no voice or CW keyer on 2-meters and above. Good thing I'm used to doing CW by hand on the UHF and microwaves anyway.

N1MM+ no longer supports the Buckmaster lookup in the main window so now you don't have it pop up with exact heading info to the 6-character grid, very useful with tight antennas especially on the microwaves where the antenna beam width is only a few degrees. Similarly, there is no way to look up headings to a rover's 6-character grid. I have Buckmaster running in a separate window as well as a bearing and distance program for rovers.

It all seemed a lot easier when I just had regular dumb radio, a few switches and a basic logger. Anymore I find myself doing more computer stuff than radio stuff!

Society of Midwest Contesters (SMC) on VHF – Quest for the Gavel

By Bob Striegl, K2DRH

The SMC has been shooting for the June VHF Contest Unlimited Club gavel since 2007 by rallying the troops to submit more than 50 logs. With the advent of more HF contest rigs that also had 6-meters, SMC VHFer Kevin, W9GKA saw an opportunity to stimulate VHF contest activity in the Midwest. He initiated the effort to have SMC submit more than 50 logs and kick off the Unlimited club category in the June contest. It was a logical transition since good 6-meter propagation could make it more like the HF contests that most of the members were familiar with and they had the potential to run rate, something that gets nearly every contester's heart pumping.

Group picture at the 2018 SMC Fest – A Large Percentage of SMC Members Enjoy both HF and VHF Contesting (Photo courtesy Society of Midwest Contesters)

SMC won its first June VHF Unlimited Club gavel in 2007. It was presented to Kevin for his organizational efforts and his VHF contesting advocacy among SMC members. The second one in 2008 went to Bob, K2DRH for his scoring abilities in SOLP showing that a Midwestern station could consistently take 1st place in a single-operator category after Pete. K9PW led the way with the first ever W9 win. The third in 2009 was received by then-President Mike, AJ9C who is rumored to have used it in his real job as a judge! In 2010 it went to noted HF contester Barry, N2BJ for his many years of efforts keeping VHF contesting alive in the Midwest.

SMC won the gavel again in 2011 and 2012 but stopped awarding it to members. Along with a major reorganization of SMC participation dropped and there were not enough logs in 2013. All of these Unlimited Club efforts went unopposed by other, much larger clubs.

Pete, K9PW is a microwave madman up to 47 GHz! This is his rover antenna setup from the recent 222 and Up Distance Contest (Photo courtesy Pete Walter, K9PW)

The Potomac Valley Radio Club (PVRC) has been a powerhouse in HF contesting and has many top national ranked VHF contesters in their vast membership. Their aggregate scores have landed them the top spot in the June VHF Contest Medium Club Category for many years running. Back in 2014 their combined score was almost double that of SMC but despite being at least three times the size in membership PVRC only posted enough entries for the Medium club category and we were again the sole entry for Unlimited. In 2015 we thought we had enough logs for the Unlimited Club Category but upon log checking a few who listed SMC in their logs were found to be non-current members or outside the circle and were not included in the club score. In 2016 we bounced back with almost 70 logs and again had the field to ourselves.

Over the past few years there has been a growing rivalry with PVRC in the North American QSO Party (NAQP) club challenge competition to the point that a special cup was fashioned that resides with the winning club each year. SMC has been successful in retaining that cup in 2018. PVRC has also apparently taken notice of our success in the June VHF contest and gotten their considerably larger membership to submit the necessary logs to break into the Unlimited category themselves in 2017.

This new area of rival club competition and the SMC sponsorship of top score Central Division plaques in several operator categories has inspired the SMC membership to once again increase their participation in June VHF and make more QSOs. Several SMC members have become category leaders and two fledgling multis have been spawned. The quest for the Unlimited Club gavel has really helped boost VHF contest participation in the Midwest during an era of overall declining VHF weak-signal activity throughout the country.

Luckily there are no major HF contests scheduled on the same weekend as the ARRL June VHF to dilute the efforts of these major contest clubs. Serious VHFers in the Midwest, for example, notice a big drop in activity if a major HF contest is scheduled at the same time as a VHF contest. Examples include ARRL Jan VHF with NAQP SSB, ARRL Sep VHF with CW Sprint, CQ WW VHF with NAQP RTTY, ARRL 222 MHz and Up with NAQP CW, and so forth. Many VHF contesters are active HF contesters, too, and this hurts participation in both, particularly for club efforts. Conflicts also put a damper on station builders who might otherwise be interested in creating stations capable of winning VHF contests. If there is increasing interest in VHF+ contesting, this would be a good time for sponsors of the major US contests — ARRL, NCJ, CQ, major state QSO parties — to discuss small rearrangements of the calendar to promote activity across the board. (Good idea! – *Ed.*)

In 2017 PVRC made the cut for the Unlimited Club Category in the June VHF Contest and gave us some serious competition. With our increased focus and 75 logs, however, we managed to prevail by a narrow margin. 2018 is the 2nd time in a row SMC has won the gavel for Unlimited clubs with PVRC in the running so now its apparently game on! In 2018 we had 10 fewer logs than 2017, and again led only by a narrow margin. We will have to up our game yet again in 2019 to hold on to the lead!

Bob, K2DRH gives a presentation at the 2015 SMC Fest about VHF contesting. (Photo courtesy of Society of Midwest Contesters)

Sponsored Plaques

Plaque Category	*Winner*	*Plaque Sponsor*
Overall Single Operator High Power	W5ZN	Charles Dietz, W5PR
Overall Single Operator Low Power	K2DRH	Jeffrey Klein, K1TEO
Overall Single Operator, 3-Band	K2PS	Northern Lights Radio Society
Overall Single Operator, Low Power, Rookie	KC3BVL	W3ZZ First Log Award - Memorial by Tim, K3LR and Dave, W9PA
Overall Multioperator	W2SZ	Directive Systems and Engineering - in memory of W3ZZ and K3CB
Overall Limited Multioperator	K5QE	Gene Zimmerman, W3ZZ, Memorial - ARRL Contest Branch
Overall Rover	VE3OIL/R	In Memory of Tim Ertl, KE3HT, Microwave DX Addict
Overall Limited Rover	K2EZ/R	Rochester VHF Group
DX Single Operator High Power	VP9I (WA4PGM, op)	Bill Tynan, W3XO, Memorial - ARRL Contest Branch
Atlantic Division Single Operator High Power	K1RZ	Potomac Valley Radio Club
Atlantic Division Single Operator, 3-Band	KR1ST	Rochester VHF Group
Atlantic Division Single Operator Low Power	WA3EOQ	Potomac Valley Radio Club
Central Division Single Operator High Power	WØUC	Society of Midwest Contesters
Central Division Single Operator Low Power	K2DRH	Society of Midwest Contesters
Central Division Single Operator, 3-Band	WB9TFH	Society of Midwest Contesters
Central Division Limited Multioperator	NV9L	Society of Midwest Contesters
Dakota Division Single Operator Low Power	NØUR	Northern Lights Radio Society
Delta Division Single Operator High Power	W5ZN	Memorial to Mike Bruck, W5MRB, from his friends
Midwest Division Single Operator Low Power	NØLL	Northern Lights Radio Society
New England Division Rover	KJ1K/R	North East Weak Signal Group
Northwestern Division Single Operator, 3-Band	N7QOZ	Pacific Northwest VHF Society
Roanoke Division Single Operator High Power	W3IP	Potomac Valley Radio Club
Roanoke Division Single Operator Low Power	N9NB (W4FS, op)	Potomac Valley Radio Club
Canada Single Operator Low Power	VE3DS	Neil Macklem, VE3SST
Canada Rover	VE3OIL/R	Toronto FM Communications Society

Regional Leaders

West Coast Region
(Pacific, Northwestern and Southwestern Divisions; Alberta, British Columbia and NT Sections)

WA8WZG/R	26,523	R
KE6QR/R	9,656	R
KE7MSU/R	6,426	R
AC7SG/R	3,240	R
KF7NP/R	560	R
WW7D/R	31,920	RL
N6GP/R	5,004	RL
K6LMN/R	4,466	RL
K7BDB/R	3,792	RL
VA6AN/R	1,160	RL
N6JET/R	19,600	RU
VE7AFZ/R	816	RU
W7MRF (KW7MM, op)	36,084	SOHP
N1RWY	23,229	SOHP
N7CW	19,240	SOHP
N6VI	16,940	SOHP
KE7SW	16,802	SOHP
W6IT	31,347	SOLP
KC6ZWT	10,332	SOLP
AC7MD	9,856	SOLP
KE6GLA	9,030	SOLP
WJØF	7,140	SOLP
W4DVE	8,670	SOP
K7ALO	4,648	SOP
K7ATN	3,740	SOP
W6KKO	1,560	SOP
VE7FYC	728	SOP
KE7GRO	14,863	SO3B
N7IR	13,332	SO3B
N7RK	3,304	SO3B
AF6SA	3,270	SO3B
N7AT (K8IA, op)	2,759	SO3B
W6IA	1,500	SOFM
K7IMA	244	SOFM
WB6ETY	224	SOFM
KK6VIX	114	SOFM
N9VM (N1VM, op)	98	SOFM
NN7AZ	69,300	LM
W6L	3,649	LM
N6RPM	1,026	LM
NI6E	20,164	UM
WA7JTM	14,418	UM
K6HS	13,185	UM
K6YK	3,036	UM
WB6HUM	2,358	UM

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

KD5IKG/R	24,938	R
KK6MC/R	10,388	R
NØHZO/R	7,191	R
KCØP/R	6,854	R
KA5D/R	22,644	RL
KØBBC/R	19,656	RL
N6RH/R	12,512	RL
K5ND/R	10,695	RL
KT5TE/R	8,910	RL
NØLD/R	47,040	RU
K5SRT/R	37,291	RU
W7XU	114,492	SOHP
KØSIX	102,135	SOHP
N5RZ	72,874	SOHP
WD5K	64,224	SOHP
WAØCSL	53,055	SOHP
NØLL	50,949	SOLP
K5QB	46,761	SOLP
WQ5S	23,600	SOLP
W5PR	17,575	SOLP
NØUR	14,673	SOLP
WØAMT	168	SOP
KIØG	63	SOP
NØSUW	24	SOP
N8GOU	6	SOP
W2FU	42,672	SO3B
AA5AM	34,181	SO3B
AD5A	27,984	SO3B
WB5TUF	27,060	SO3B
KØNR	24,831	SO3B
KI7FUO	30	SOFM
K5QE	394,605	LM
NØEO	100,130	LM
W5ROK	37,572	LM
KØDAS	24,190	LM
W5KFT	11,692	LM
WQØP	147,200	UM
W5UHF	57,876	UM
NR7T	18,430	UM
KC5MVZ	6,336	UM

Central Region
(Central and Great Lakes Divisions; Ontario East, Ontario North, Ontario South, and Greater Toronto Area Sections)

VE3OIL/R	110,136	R
W9SNR/R	16,308	R
KF8QL/R	14,204	R
AA9IL/R	5,157	R
K9TMS/R	4,650	R
W9YOY/R	15,990	RL
N9GH/R	7,840	RL
AI9I/R	5,824	RL
WD9HBF/R	4,560	RL
K9JK/R	3,075	RL
VE3SMA/R	55,110	RU
WB8TGY/R	720	RU
WØUC	186,167	SOHP
K9CT	153,300	SOHP
W9EWZ	83,475	SOHP
VA3ELE	69,917	SOHP
NØAKC	61,004	SOHP
K2DRH	283,554	SOLP
W9GA	79,348	SOLP
VE3DS	53,298	SOLP
VE3WY	24,752	SOLP
K8MR	23,664	SOLP
VA3TO/P	126	SOP
WB9TFH	21,412	SO3B
AB9H	20,064	SO3B
N9TF	16,932	SO3B
N9EAT	16,300	SO3B
VE3SST	16,074	SO3B
N9SJ	1	SOFM
WD9CIR	1	SOFM
NV9L	132,800	LM
W9RVG	63,384	LM
KA9CFD	53,186	LM
W9VW	20,928	LM
N2BJ	20,384	LM
W9XA	256,470	UM
N8ZM	120,120	UM
VE3WCC	83,053	UM
K8JH	18,054	UM

Southeast Region
(Delta, Roanoke and Southeastern Divisions)

AG4V/R	36,994	R
W5VY/R	21,620	R
AE5P/R	13,860	RL
NC5AX/R	4,230	RL
W4PH/R	3,450	RL
W4OWL/R	1,728	RL
WB5RMG/R	650	RL
W5ZN	312,075	SOHP
K1TO	234,132	SOHP
KC4PX	157,356	SOHP
W3IP	125,385	SOHP
N4BP	104,748	SOHP
K5RQ	78,942	SOLP
W4RAA	58,917	SOLP
NF4A	34,093	SOLP
AA5AU	26,166	SOLP
WB4TDH	20,856	SOLP
W4RXR	4,387	SOP
KC8KSK	378	SOP
K2PS	90,440	SO3B
WA4GPM	60,775	SO3B
N4OGW	42,224	SO3B
KK4MA	35,775	SO3B
AJ6T	23,504	SO3B
K3TW	99	SOFM
KW4LU	1	SOFM
W4POT	1	SOFM
AA4ZZ	246,864	LM
N4WW	107,984	LM
WB4WXE	50,978	LM
W6SAI	31,312	LM
K5GDX	26,606	LM
W4IY	186,416	UM
W4NH	29,526	UM
KJ4ZYB	18,067	UM
K4HZ	7,314	UM

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

KF2MR/R	88,368	R
NN3Q/R	40,320	R
K2ET/R	21,758	R
K2LDT/R	18,096	R
KV2X/R	17,907	R
K2EZ/R	72,334	RL
K2QO/R	46,898	RL
N2DXT/R	17,043	RL
W1RGA/R	13,980	RL
KJ2G/R	10,726	RL

K1SIG/R	33,120	RU
KD2IRH/R	8,064	RU
K1RZ	267,300	SOHP
K1TR	146,769	SOHP
K1KG	143,081	SOHP
K3ZO	114,492	SOHP
N3HBX	105,064	SOHP
AF1T	186,874	SOLP
WB1GQR (W1SJ, op)	153,080	SOLP
N8RA	63,772	SOLP
WB2JAY	45,617	SOLP
WA3EOQ	39,345	SOLP
WA2TMC	42,582	SOP
WB2AMU	2,080	SOP
N3KCM	1,184	SOP
KQ2RP	1,148	SOP
VE2NCG	880	SOP
KR1ST	36,295	SO3B
N3ALN	17,226	SO3B
K3SFX	17,100	SO3B
N1ZN	16,016	SO3B
KZ2I	15,925	SO3B
N2UZQ	396	SOFM
VA2DG	85	SOFM
K3EO	8	SOFM
KC3LPC	1	SOFM
N2MH	1	SOFM
KD2MNU	1	SOFM
N2NT	280,356	LM
W3SO	234,070	LM
K1BX	220,440	LM
W2LV	157,780	LM
K2BAR	75,120	LM
W2SZ	752,955	UM
W3CCX	613,600	UM
K2LIM	446,652	UM
WE1P	104,144	UM
KV1J	72,435	UM

Division Winners

Classic Rover

Atlantic	KF2MR/R	88,368
Central	W9SNR/R	16,308
Dakota	NØHZO/R	7,191
Delta	AG4V/R	36,994
Great Lakes	KF8QL/R	14,204
Hudson	WB2SIH/R	9,522
New England	KJ1K/R	2,842
Northwestern	KE7MSU/R	6,426
Pacific	KE6QR/R	9,656
Rocky Mountain	KK6MC/R	10,388
Southwestern	WA8WZG/R	26,523
West Gulf	KD5IKG/R	24,938
Canada	VE3OIL/R	110,136

Limited Rover

Atlantic	K2QO/R	46,898
Central	N9GH/R	7,840
Dakota	KØBBC/R	19,656
Delta	AE5P/R	13,860
Great Lakes	W9YOY/R	15,990
Hudson	K2EZ/R	72,334
Midwest	KEØHZX/R	4,785
New England	W1RGA/R	13,980
Northwestern	WW7D/R	31,920
Pacific	K6JS/R	120
Roanoke	W4PH/R	3,450
Rocky Mountain	W3DHJ/R	6,372
Southwestern	N6GP/R	5,004
West Gulf	KA5D/R	22,644
Canada	VA6AN/R	1,160

Unlimited Rover

Atlantic	KD2IRH/R	8,064
Great Lakes	WB8TGY/R	720
New England	K1SIG/R	33,120
Pacific	N6JET/R	19,600
West Gulf	NØLD/R	47,040
Canada	VE3SMA/R	55,110

Single Operator, High Power

Atlantic	K1RZ	267,300
Central	WØUC	186,167
Dakota	W7XU	114,492
Delta	W5ZN	312,075
Great Lakes	W7JW	56,834
Hudson	N2GHR	57,540
Midwest	KØTPP	47,333
New England	K1TR	146,769
Northwestern	KE7SW	16,802
Pacific	N6MI	6,678
Roanoke	W3IP	125,385
Rocky Mountain	K5AM	45,012
Southeastern	K1TO	234,132
Southwestern	W7MRF (KW7MM, op)	36,084

West Gulf	N5RZ	72,874
Canada	VA3ELE	69,917
DX	XE2CQ	9,936

Single Operator, Low Power

Atlantic	WA3EOQ	39,345
Central	K2DRH	283,554
Dakota	NØUR	14,673
Delta	AA5AU	26,166
Great Lakes	K8MR	23,664
Hudson	WB2JAY	45,617
Midwest	NØLL	50,949
New England	AF1T	186,874
Northwestern	AC7MD	9,856
Pacific	KC6ZWT	10,332
Roanoke	N9NB (W4FS, op)	20,020
Rocky Mountain	AI5I	9,954
Southeastern	K5RQ	78,942
Southwestern	W6IT	31,347
West Gulf	K5QB	46,761
Canada	VE3DS	53,298
DX	VP9I (WA4PGM, op)	29,590

Single Operator, Portable

Atlantic	WA2TMC	42,582
Dakota	NØSUW	24
Delta	W4RXR	4,387
Hudson	WB2AMU	2,080
Midwest	N8GOU	6
New England	N1PRW	304
Northwestern	W4DVE	8,670
Pacific	W6KKO	1,560
Roanoke	KC8KSK	378
Rocky Mountain	WØAMT	168
Southwestern	K7CNT	512
Canada	VE2NCG	880

Single Operator, 3 Band

Atlantic	KR1ST	36,295
Central	WB9TFH	21,412
Dakota	NØHJZ	17,316
Delta	N4OGW	42,224
Great Lakes	W8JH	7,137
Hudson	W2JTM	13,197
Midwest	W2FU	42,672
New England	N1ZN	16,016
Northwestern	N7QOZ	2,750
Pacific	AF6SA	3,270
Roanoke	KK4MA	35,775
Rocky Mountain	KØNR	24,831
Southeastern	K2PS	90,440
Southwestern	KE7GRO	14,863
West Gulf	AA5AM	34,181
Canada	VE3SST	16,074

Single Operator, FM Only

Atlantic	K3EO	8
Central	N9SJ	1
Central	WD9CIR	1
Delta	KW4LU	1
Hudson	N2UZQ	396
Northwestern	K7IMA	244
Pacific	W6IA	1,500
Rocky Mountain	KI7FUO	30
Southeastern	K3TW	99
Southwestern	K6QCB	27
Canada	VA2DG	85

Limited Multioperator

Atlantic	W3SO	234,070
Central	NV9L	132,800
Dakota	NØEO	100,130
Delta	K5GDX	26,606
Hudson	N2NT	280,356
Midwest	KØDAS	24,190
New England	K1BX	220,440
Pacific	W6L	3,649
Roanoke	AA4ZZ	246,864
Rocky Mountain	K5LRW	1,519
Southeastern	N4WW	107,984
Southwestern	NN7AZ	69,300
West Gulf	K5QE	394,605
Canada	VA2RC	918
DX	PJ4V	4,644

Unlimited Multioperator

Atlantic	W3CCX	613,600
Central	W9XA	256,470
Great Lakes	N8ZM	120,120
Hudson	WE1P	104,144
Midwest	WQØP	147,200
New England	W2SZ	752,955
Northwestern	K7TM	910
Pacific	K6HS	13,185
Roanoke	W4IY	186,416
Rocky Mountain	W5UHF	57,876
Southeastern	W4NH	29,526
Southwestern	NI6E	20,164
West Gulf	KC5MVZ	6,336
Canada	VE3WCC	83,053

QSO/Mult Band Leaders by Category

Classic Rover

50 MHz QSOs

AG4V/R	128
KF2MR/R	120
NN3Q/R	110
WA8WZG/R	96
KD5IKG/R	82

50 MHz Mults

AG4V/R	60
NN3Q/R	43
W5VY/R	40
KF2MR/R	39
VE3OIL/R	38

144 MHz QSOs

WA8WZG/R	80
KE7MSU/R	77
KE6QR/R	72
KF2MR/R	68
K2ET/R	61

144 MHz Mults

VE3OIL/R	19
W5VY/R	17
KF8QL/R	15
K2LDT/R	14
KF2MR/R	14

222 MHz QSOs

KD5IKG/R	47
KF2MR/R	42
VE3OIL/R	38
KE6QR/R	35
WA8WZG/R	33

222 MHz Mults

VE3OIL/R	13
AG4V/R	11
KD5IKG/R	11
W5VY/R	10
W9SNR/R	9

432 MHz QSOs

WA8WZG/R	70
KF2MR/R	60
K2ET/R	50
VE3OIL/R	47
KD5IKG/R	40

432 MHz Mults

W5VY/R	17
VE3OIL/R	14
KF2MR/R	11
WA8WZG/R	10
KD5IKG/R	9
W9SNR/R	9

902 MHz QSOs

KF2MR/R	48
K2ET/R	30
VE3OIL/R	28
KC2YSR/R	25
KV2X/R	24
W2AAA/R	24

902 MHz Mults

VE3OIL/R	10
KF2MR/R	9
K2ET/R	5
NN3Q/R	5
W9SNR/R	5

1.2 GHz QSOs

KF2MR/R	47
K2ET/R	31
VE3OIL/R	29
KC2YSR/R	24
KV2X/R	24
W2AAA/R	24

1.2 GHz Mults

VE3OIL/R	10
KF2MR/R	9
KCØP/R	8
NØHZO/R	8
W9SNR/R	6

2.3 GHz QSOs

KF2MR/R	17
VE3OIL/R	17
K2LDT/R	12
W3ICC/R	11
K2ET/R	10

2.3 GHz Mults

VE3OIL/R	9
KF2MR/R	8
K2ET/R	4
KV2X/R	4
W3ICC/R	4

3.4 GHz QSOs

K2LDT/R	11
VE3OIL/R	6
W9SNR/R	6
KF2MR/R	5
NN3Q/R	5

3.4 GHz Mults

KF2MR/R	5
K2LDT/R	3
NN3Q/R	3
VE3OIL/R	3
KF8QL/R	2
KJ1K/R	2
W9SNR/R	2

5.7 GHz QSOs

VE3OIL/R	13
NN3Q/R	7
K2ET/R	5
KF2MR/R	4
K2LDT/R	2
KJ1K/R	2

10 GHz QSOs

VE3OIL/R	11
NN3Q/R	7
KF8QL/R	4
K2LDT/R	2
KF2MR/R	2
KJ1K/R	2

10 GHz Mults

VE3OIL/R	9
KF8QL/R	3
NN3Q/R	3
K2LDT/R	2
KF2MR/R	2

24 GHz QSOs

VE3OIL/R	4
KF8QL/R	3

24 GHz Mults

VE3OIL/R	4
KF8QL/R	2

Light QSOs

VE3OIL/R	9
NE3I/R	5
VE2LJV/R	1

Light Mults

VE3OIL/R	9
NE3I/R	1
VE2LJV/R	1

Limited Rover

50 MHz QSOs

K2EZ/R	216
K2QO/R	190
KØBBC/R	177
WW7D/R	148
AI9I/R	90

50 MHz Mults

KØBBC/R	94
K2QO/R	79
K2EZ/R	57
AI9I/R	47
K5ND/R	47
W3DHJ/R	47

144 MHz QSOs

WW7D/R	159
N2DXT/R	112
K2EZ/R	107
K2QO/R	72
AE5P/R	71

144 MHz Mults

K2EZ/R	21
K2QO/R	20
N2DXT/R	19
W9YOY/R	14
W1RGA/R	13

222 MHz QSOs

WW7D/R	86
K2EZ/R	70
AE5P/R	56
N6RH/R	56
KT5TE/R	46

222 MHz Mults

K2EZ/R	13
K2QO/R	13
KA5D/R	9
KJ2G/R	8
W9YOY/R	8
WW7D/R	8

432 MHz QSOs

WW7D/R	93
K2EZ/R	75
AE5P/R	69
N6RH/R	66
KT5TE/R	53

432 MHz Mults

K2EZ/R	15
K2QO/R	11
KA5D/R	9
W1RGA/R	9
W9YOY/R	9
WW7D/R	9

Unlimited Rover

50 MHz QSOs

K1SIG/R	120
N6JET/R	94
K5SRT/R	88
NØLD/R	87
VE3SMA/R	75

50 MHz Mults
K1SIG/R 43
VE3SMA/R 37
K5SRT/R 32
NØLD/R 32
N6JET/R 9
144 MHz QSOs
NØLD/R 102
K5SRT/R 81
N6JET/R 81
VE3SMA/R 71
K1SIG/R 51
144 MHz Mults
VE3SMA/R 20
NØLD/R 16
K5SRT/R 15
N6JET/R 11
K1SIG/R 10
222 MHz QSOs
NØLD/R 66
K5SRT/R 58
VE3SMA/R 45
N6JET/R 40
K1SIG/R 28
222 MHz Mults
NØLD/R 16
K5SRT/R 14
VE3SMA/R 14
K1SIG/R 10
N6JET/R 7
432 MHz QSOs
NØLD/R 80
K5SRT/R 67
VE3SMA/R 41
N6JET/R 40
KD2IRH/R 24
432 MHz Mults
NØLD/R 16
K5SRT/R 15
VE3SMA/R 13
K1SIG/R 9
N6JET/R 5
902 MHz QSOs
KD2IRH/R 24
VE3SMA/R 20
K1SIG/R 7
N6JET/R 4
WB8TGY/R 2
902 MHz Mults
VE3SMA/R 6
KD2IRH/R 4
K1SIG/R 3
N6JET/R 3
WB8TGY/R 2
1.2 GHz QSOs
KD2IRH/R 24
VE3SMA/R 21
N6JET/R 11
K1SIG/R 9
NØLD/R 3
1.2 GHz Mults
K1SIG/R 5
N6JET/R 5
KD2IRH/R 4
VE3SMA/R 4
NØLD/R 3
2.3 GHz QSOs
K1SIG/R 6
VE3SMA/R 3
N6JET/R 1
2.3 GHz Mults
K1SIG/R 3
N6JET/R 1
VE3SMA/R 1
3.4 GHz QSOs
VE3SMA/R 1
3.4 GHz Mults
VE3SMA/R 1
5.7 GHz QSOs
VE3SMA/R 5
10 GHz QSOs
N6JET/R 4
WB8TGY/R 2
VE3SMA/R 1
10 GHz Mults
N6JET/R 2
WB8TGY/R 2
VE3SMA/R 1
24 GHz QSOs
VE3SMA/R 5
WB8TGY/R 2
24 GHz Mults
VE3SMA/R 4
WB8TGY/R 2

Single Operator, High Power
50 MHz QSOs
K1TO 1308
N4BP 812
KC4PX 783
W5ZN 715
W3EP 598
50 MHz Mults
K1TO 179
KC4PX 170
W3EP 169
K3ZO 166
K9CT 159
WØUC 159
144 MHz QSOs
W1VD 250
KA1ZE/3 (KA1ZE, op) 194
W5ZN 135
K1RZ 134
N3HBX 104
144 MHz Mults
KA1ZE/3 (KA1ZE, op) 89
W5ZN 73
W1VD 48
K1RZ 45
KE8FD 36
222 MHz QSOs
K1RZ 62
W5ZN 38
K1TR 30
N7EPD 30
KE7SW 29
VA3ELE 29
222 MHz Mults
K1RZ 26
W5ZN 22
KE8FD 18
WØUC 17
N1JEZ 16
VE3ZV 16
432 MHz QSOs
K1RZ 67
W5ZN 59
K7YDL 45
W3IP 45
KE8FD 41
432 MHz Mults
K1RZ 28
KE8FD 24
W5ZN 24
VE3ZV 22
W2KV 20
902 MHz QSOs
K1RZ 27
VA3ELE 21
WØGHZ 13
K1KG 12
VE3ZV 12
902 MHz Mults
K1RZ 16
VA3ELE 11
K1KG 9
WØGHZ 8
VE3ZV 7
WØUC 7
1.2 GHz QSOs
K1RZ 33
VA3ELE 25
K1KG 14
N1RWY 13
VE3ZV 13
W2SJ 13
1.2 GHz Mults
K1RZ 17
VA3ELE 13
W2SJ 9
K1KG 8
VE3ZV 8
2.3 GHz QSOs
K1RZ 21
VA3ELE 12
K1KG 10
W2SJ 8
VE3ZV 7
2.3 GHz Mults
K1RZ 13
K1KG 8
VA3ELE 7
W2SJ 6
K3GNC 5
VE3ZV 5
3.4 GHz QSOs
K1RZ 9
K1KG 8
VA3ELE 5
VE3ZV 4
K2YAZ 3
W2SJ 3
3.4 GHz Mults
K1KG 7
K1RZ 6
VA3ELE 4
K2YAZ 3
VE3ZV 3
W2SJ 3

5.7 GHz QSOs
K1RZ 4
K1KG 3
W3SZ 3
VA3ELE 2
WB2RVX 2
10 GHz QSOs
K1RZ 8
VA3ELE 6
K1KG 5
W3SZ 3
K2YAZ 2
N3OC 2
WB2RVX 2
10 GHz Mults
K1RZ 5
K1KG 4
VA3ELE 4
W3SZ 3
K2YAZ 2
WB2RVX 2
24 GHz QSOs
VA3ELE 1
24 GHz Mults
KØTPP 1
VA3ELE 1
Light QSOs
W2SJ 1
Light Mults
W2SJ 1

Single Operator, Low Power
50 MHz QSOs
K2DRH 694
K5RQ 669
WB1GQR (W1SJ, op) 484
AF1T 354
NF4A 331
50 MHz Mults
K2DRH 157
K5QB 137
AF1T 133
NØLL 125
K5RQ 118
144 MHz QSOs
WB2CUT 115
WB1GQR (W1SJ, op) 109
AF1T 74
K2DRH 71
N8RA 68
144 MHz Mults
K2DRH 36
WA3EOQ 25
WB1GQR (W1SJ, op) 24
W9GA 22
N8RA 21
VE3DS 21
222 MHz QSOs
WB1GQR (W1SJ, op) 40
AF1T 39
K2DRH 31
WA3EOQ 27
KC6ZWT 24
VE3DS 24
222 MHz Mults
K2DRH 20
WA3EOQ 17
VE3DS 14
AF1T 13
WB1GQR (W1SJ, op) 13
432 MHz QSOs
WB1GQR (W1SJ, op) 49
AF1T 47
K2DRH 44
VE3DS 33
K2GMY 30
432 MHz Mults
K2DRH 21
VE3DS 17
WA3EOQ 16
AF1T 14
W9GA 14
902 MHz QSOs
AF1T 18
VE3DS 16
K2DRH 13
W4RAA 11
W9GA 10
902 MHz Mults
AF1T 11
K2DRH 9
VE3DS 9
W9GA 8
WB2JAY 7
1.2 GHz QSOs
AF1T 20
K2DRH 20
W6IT 15
WB1GQR (W1SJ, op) 12
VE3DS 11
WB2JAY 11
1.2 GHz Mults
K2DRH 13
AF1T 10
VE3DS 7
WB1GQR (W1SJ, op) 7
W6IT 6
WB2JAY 6
2.3 GHz QSOs
AF1T 11
VE3DS 8
W6IT 7
K2DRH 6
WB2JAY 6
2.3 GHz Mults
AF1T 8
K2DRH 6
W6IT 6
WB1GQR (W1SJ, op) 5
WB2JAY 5
3.4 GHz QSOs
W6IT 7
K2DRH 6
AF1T 5
WB2JAY 4
WB1GQR (W1SJ, op) 3
3.4 GHz Mults
W6IT 6
AF1T 5
K2DRH 5
WB1GQR (W1SJ, op) 3
WB2JAY 3
5.7 GHz QSOs
W6IT 7
AF1T 4
W1RGA 1
W3EKT 1
10 GHz QSOs
AF1T 9
W6IT 8
W3EKT 2
W1RGA 1
WA3NUF 1
WA7ZZI 1
10 GHz Mults
AF1T 7
W6IT 6
W1RGA 1
W3EKT 1
WA3NUF 1
WA7ZZI 1
24 GHz QSOs
AF1T 1
N2PEQ 1
24 GHz Mults
AF1T 1
N2PEQ 1
Light QSOs
AF1T 1
WB3IGR 1
Light Mults
AF1T 1
WB3IGR 1

Single Operator, Portable
50 MHz QSOs
WA2TMC 156
W4DVE 65
K7ALO 48
W4RXR 47
WB2AMU 33
50 MHz Mults
WA2TMC 68
W4RXR 29
N3KCM 26
KQ2RP 19
WB2AMU 19
144 MHz QSOs
WA2TMC 72
W4DVE 62
K7ATN 48
K7ALO 40
W4RXR 18
W6KKO 18
WB2AMU 18
144 MHz Mults
WA2TMC 12
WB2AMU 9
K7ALO 7
W4DVE 7
W6KKO 6
222 MHz QSOs
WA2TMC 45
W4DVE 20
K7ATN 13
K7ALO 11
W4RXR 11

222 MHz Mults
WA2TMC 8
W4DVE 5
K7ALO 4
W4RXR 4
K7ATN 3
VE7FYC 3
432 MHz QSOs
WA2TMC 68
K7ATN 36
W4DVE 32
K7ALO 19
W6KKO 13
432 MHz Mults
WA2TMC 6
K7ALO 5
W4DVE 5
K7ATN 4
VE2NCG 4
902 MHz QSOs
W4DVE 5
K7ATN 4
KØBAK 1
W6KKO 1
902 MHz Mults
K7ATN 3
W4DVE 3
KØBAK 1
W6KKO 1
1.2 GHz QSOs
K7ALO 6
K7ATN 5
W4DVE 3
VE2NCG 2
KØBAK 1
VE7FYC 1
1.2 GHz Mults
K7ATN 3
K7ALO 2
VE2NCG 2
W4DVE 2
KØBAK 1
VE7FYC 1
2.3 GHz QSOs
KØBAK 1
2.3 GHz Mults
KØBAK 1
3.4 GHz QSOs
KØBAK 1
3.4 GHz Mults
KØBAK 1
5.7 GHz QSOs
KØBAK 1
10 GHz QSOs
VA3TO/P 1
10 GHz Mults
VA3TO/P 1

Single Operator, 3 Band
50 MHz QSOs
K2PS 646
WA4GPM 387
N4OGW 344
W2FU 307
KR1ST 267
50 MHz Mults
K2PS 140
KK4MA 130
WA4GPM 128
AA5AM 121
WB5TUF 120
144 MHz QSOs
N7QOZ 49
K3SFX 46
KR1ST 38
KA2BPP 36
N7RK 36
144 MHz Mults
K3SFX 21
KR1ST 16
KA2BPP 15
N1IBM 15
N1ZN 12
N4OGW 12
W2FU 12
222 MHz QSOs
N7QOZ 10
W7AIT 7
AA5AM 3
K4NRT 1
KC2JRQ 1
222 MHz Mults
AA5AM 2
W7AIT 2
K4NRT 1
KC2JRQ 1
432 MHz QSOs
N7IR 29
N7RK 22
K3SFX 19
K6KQV 16
K7VIT 15
432 MHz Mults
W2FU 9
K3SFX 8
N7IR 7
N7RK 7
KE7GRO 6
N9TF 6
VE3SST 6
WA4LDU 6
WB9TFH 6

Single Operator, FM Only
50 MHz QSOs
K3TW 8
W6IA 8
K7IMA 7
N2UZQ 4
VA2DG 1
50 MHz Mults
K3TW 7
N2UZQ 2
W6IA 2
K7IMA 1
VA2DG 1
144 MHz QSOs
W6IA 32
WB6ETY 22
K7IMA 20
KK6VIX 19
KI7FUO 15
144 MHz Mults
KK6VIX 5
W6IA 5
N2UZQ 4
WB6ETY 4
N9VM (N1VM, op) 3
222 MHz QSOs
K7IMA 8
W6IA 6
N2UZQ 3
K3EO 2
AA6XA 1
N9VM (N1VM, op) 1
222 MHz Mults
W6IA 3
K3EO 2
N2UZQ 2
AA6XA 1
K7IMA 1
N9VM (N1VM, op) 1
432 MHz QSOs
W6IA 24
K7IMA 9
N2UZQ 7
VA2DG 6
N6TCE 5
WB6ETY 5
432 MHz Mults
W6IA 5
N2UZQ 3
N6TCE 3
N9VM (N1VM, op) 3
WB6ETY 3

Limited Multioperator
50 MHz QSOs
K5QE 943
K1BX 912
N4WW 794
N2NT 600
AA4ZZ 536
50 MHz Mults
K5QE 201
K1BX 193
AA4ZZ 191
W3SO 158
N2NT 151
144 MHz QSOs
N2NT 249
AA4ZZ 204
W3SO 201
W2LV 159
K2BAR 139
144 MHz Mults
K5QE 90
NN7AZ 60
AA4ZZ 49
W3SO 49
N2NT 46
222 MHz QSOs
N2NT 72
W2LV 46
W3SO 39
K2BAR 35
AA4ZZ 26

222 MHz Mults

N2NT	25
W2LV	21
W3SO	20
AA4ZZ	16
K2BAR	14

432 MHz QSOs

W3SO	80
N2NT	78
K2BAR	65
W2LV	60
AA4ZZ	48

432 MHz Mults

W3SO	36
K5QE	29
AA4ZZ	22
N2NT	22
W2LV	21

1.2 GHz QSOs

N6RPM	6
KD2LGX	5
W9VW	2
N2BJ	1

1.2 GHz Mults

KD2LGX	5
N6RPM	5
W9VW	2
N2BJ	1

Unlimited Multioperator

50 MHz QSOs

W9XA	709
W3CCX	672
W2SZ	645
K2LIM	581
WQØP	517

50 MHz Mults

K2LIM	179
W9XA	172
W4IY	170
W2SZ	158
W3CCX	150

144 MHz QSOs

W3CCX	260
W2SZ	238
K2LIM	235
W4IY	131
W9XA	113

144 MHz Mults

K2LIM	58
W2SZ	43
W3CCX	40
W4IY	40
N8ZM	37

222 MHz QSOs

W2SZ	92
W3CCX	87
K2LIM	75
W9XA	29
N8ZM	28

222 MHz Mults

K2LIM	34
W2SZ	25
W3CCX	25
N8ZM	18
WQØP	17

432 MHz QSOs

W2SZ	122
W3CCX	106
K2LIM	74
W4IY	50
W9XA	46

432 MHz Mults

K2LIM	30
W2SZ	28
W3CCX	27
W4IY	22
N8ZM	19

902 MHz QSOs

W2SZ	41
W3CCX	35
K2LIM	21
WQØP	9
W1XM	7
W9XA	7

902 MHz Mults

W2SZ	21
W3CCX	18
K2LIM	16
W1XM	7
W9XA	7

1.2 GHz QSOs

W2SZ	45
W3CCX	39
K2LIM	15
W1XM	12
WQØP	12

1.2 GHz Mults

W2SZ	22
W3CCX	16
K2LIM	12
W1XM	7
WQØP	7

2.3 GHz QSOs

W2SZ	42
W3CCX	32
VE3WCC	10
K2LIM	9
W1XM	4

2.3 GHz Mults

W2SZ	20
W3CCX	15
K2LIM	8
W1XM	4
W9XA	2

3.4 GHz QSOs

W2SZ	37
W3CCX	18
K2LIM	4
VE3WCC	2
W9XA	1

3.4 GHz Mults

W2SZ	18
W3CCX	12
K2LIM	4
VE3WCC	1
W9XA	1

5.7 GHz QSOs

W2SZ	20
W3CCX	14
VE3WCC	11

10 GHz QSOs

W2SZ	23
VE3WCC	14
W3CCX	13
K2LIM	8
W9XA	1

10 GHz Mults

W3CCX	10
W2SZ	8
VE3WCC	2
K2LIM	1
W9XA	1

24 GHz QSOs

W2SZ	16
VE3WCC	1

24 GHz Mults

W2SZ	6
VE3WCC	1

Light QSOs

W3CCX	10
VE3WCC	5

Light Mults

VE3WCC	1
W3CCX	1