ARRL 10 GHz and Up Contest 2022 Results

By Rus Healy, K2UA (k2ua@arrl.net)

The 2022 contest was fantastic in many ways. Compared to 2021, nearly all indicators were positive–better DX, better participation, more activity across several call areas, and mostly favorable weather. Mentoring has paid off as well, with more new operators joining the ranks in 2022. It's an exciting time to be on 10 GHz and up!

This year's contest saw some interesting operating patterns, one of which produced large QSO counts for a few stations. More about that in the analysis and sidebars. Home stations and portables within a small geographic area continue to prove that they're viable for competitive entries. And run-and-gun operating reached new peaks with VA3ELE's results as evidence. Some call areas struggle to get enough activity together to make a strong showing, but there are signs of growth thanks to grassroots efforts of a few stations. The southeast, surprisingly, continues to struggle to produce many logs, but the rest of the US and eastern Canada have grown.

The Logs

Participation was up 11% in 2022 (following a 12% in 2021), reaching an all-time record in the 2022 contest! Both categories showed growth. ARRL HQ received 96 logs for the 10 GHz category (up five from 2021), and 54 logs for the 10 GHz and Up category (up nine from 2021). It's especially encouraging to see strong growth in the 24 GHz and higher bands overall.

Entries by Year since 2002

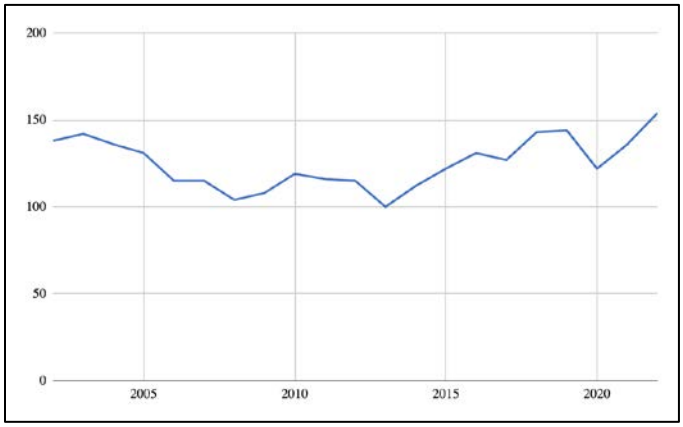


Figure 1–The ARRL 10 GHz and Up Contest has been on a strong growth trajectory since 2013, except for the expected pronounced dip in 2020. The contest has returned to its growth trajectory since then, notching its highest-ever entry count in 2022.

Growth in entries was led by the most logs ever submitted for 10 GHz and Up! A good number of new operators got on, and many added new bands. Several other highlights, and a few lowlights, came forth as well, as reported below.

Distances and Activity

Very strong DX contacts took place in the 2022 contest. W2RMA completed a stunning 866-km QSO to top the box–great work, Bill! Three contacts over 800 km made the box, including a fantastic 802-km contact between Chris, NØUK, in Minneapolis, and Gedas, W8BYA, near Fort Wayne, Indiana. This year it took 720 km to make the top-ten DX box on 10 GHz (up nearly 100 km from 2021!). Not long ago, very few stations had completed contacts that long–now the DX required just to get into the box is pretty staggering!

The 10 GHz top-ten DX box was occupied by stations from both coasts, Eastern Canada, and the Midwest. The average distance of contacts in the top-ten distance box was 782 km in 2022, up from 675 km last year. Most regions of the country saw excellent 10 GHz conditions during at least part of the contest, as this listing indicates. It also hints at successes driven by the use of KØSM's superb rainscatter.com website and better use of modes like airplane scatter.

The range of distances in this year's top ten on 24 GHz was 225 to 358 km, with an average of 261 km–again, much higher than last year. (The top spot in 2021 was 238 km and the average was 198 km). Like 10 GHz, 24 GHz saw top-ten DX entries from the West Coast, East, and Midwest regions. K6ML and W6QIW completed a very solid 358-km QSO to top the list.

On 47 GHz, our only exclusive Amateur Radio allocation among the microwave bands, the top ten distances ranged from 88 to 159 km. A set of four stations logged 159 km QSOs. The average distance of the QSOs making the top ten this year was up slightly from last year, from 113 to 122 km.

At 76 (and/or 78) GHz, four stations topped the DX box with 85-km QSOs. The average of the top distances on this band was 61 km, the same as the 2021 average, but only seven stations made the box. More stations are getting on the band–I predict much more activity in the 2023 contest on this band. Most operators are targeting

78.192 GHz rather than 76.032, but because some ops can do only one frequency or the other, it pays to be able to switch between the two to maximize QSO opportunities.

The best DX of the contest on 122 GHz was reported by Doug, K6JEY, at 7 km. There's a lot more room for growth here! On 300+ GHz, K1RZ, K3WHC, AF1T, and W1MKY made 8-km QSOs to top the DX in the nosebleed range. AF1T and K1RZ talk about these contacts in their sidebar articles.

Band	*2022 Average from Top Ten*	*2021 Average from Top Ten*
10 GHz	783 km	675 km
24 GHz	261 km	198 km
47 GHz	123 km	113 km
76 GHz	61 km	61 km

Table 1 – Top Distance Averages from Top Ten Distances by Band.

Bill, K2TER, with his 10 and 24 GHz setup and a copy of the issue of *QST* that carries the 2021 contest's results. Yes–that's him on the cover at the same spot in FN22! [Bill Rogers, K2TER, Photo]

Top Ten Analysis

The top ten features many of the same stations we've come to expect to post high scores. QSO totals and scores were up even more than last year, mostly for a specific reason – a highly orchestrated style of operation employed by a number of Midwest stations. WBØLJC shares more about that in his sidebar

10 GHz	*Score*	*QSOs*	*10 GHz and Up*	*Score*	*QSOs*
WBØLJC	73,850	279	K9PW	92,198	411
ACØRA	73,701	279	VA3ELE	75,461	288
VA3TO	59,157	186	W9XA	58,635	244
KB8U	46,870	204	AF1T	56,398	174
VE3KH	44,432	152	W1MKY	56,215	174
NØLNO	36,986	144	K6ML	54,327	228
WA2VOI	36,648	141	K9TMS	50,218	246
KBØOZN	35,948	149	K2UA	48,724	239
N6RMJ	35,289	119	K2DH	46,900	233
VE3SST	35,154	176	W6QIW	46,372	185

Table 2 – Top Ten by Category.

Average scores across both top ten boxes were up significantly in 2022. Gary, WBØLJC, extended his win streak to three years. Wyatt, ACØRA, made it a very tight race, coming in just 149 points behind. Gary's golden log lifted him to the top of the standings. Pete, K9PW, posted a 10 GHz and Up top score that is up significantly over last year's winning score. Peter, VA3ELE, though he didn't repeat as the winner this year, raised his score from last year by more than 40%--no easy feat. He definitely did it the hard way by covering thousands of kilometers of highway with Hugh, VA3TO, and others, as VA3TO reports in his sidebar. Peter makes a large number of stops, setting up and tearing down at each site more than twice as many times as other ops who use the same operating style–and the results speak for themselves. Peter is also capable of remote operation from his home station.

The top two entrants in the 10 GHz category and two of the top three in the 10 GHz and Up category, among several others in the top ten, took part in a highly orchestrated operation that took place on the shores of northern Lake Superior on the August weekend and across Lake Michigan and in Iowa in the September weekend. Their rapid-fire list operations allowed these stations to compile large QSO totals at moderate distances, resulting in a lot of QSOs and large distance points totals.

Note: The Unique Calls values in Table 3 in the published *QST* results were incorrect for the 10 GHz and Up category. (They counted only 10 GHz unique calls.) We regret the error, and it is corrected in Table 3, and addressed in the following analysis.

10 GHz	Score	QSOs	Unique Calls	10 GHz and Up	Score	QSOs	Unique Calls
WBØLJC	73,850	279	37	K9PW	92,198	411	64
ACØRA	73,701	279	37	VA3ELE	75,461	288	75
VA3TO	59,157	186	53	W9XA	58,635	244	51
KB8U	46,870	204	34	AF1T	56,398	174	82
VE3KH	44,432	152	55	W1MKY	56,215	174	82
N0LNO	36,986	144	23	K6ML	54,327	228	45
WA2VOI	36,648	141	17	K9TMS	50,218	246	45
KBØOZN	35,948	149	22	K2UA	48,724	239	89
N6RMJ	35,289	119	36	K2DH	46,900	233	87
VE3SST	35,154	176	41	W6QIW	46,372	185	46

Table 3 – Top Ten Scores By QSOs and Unique Calls Worked

10 GHz	*Best DX*	*Avg QSO DX*	*10 GHz and Up*	*Best DX*	*Avg QSO DX**
WBØLJC	544	251.4	K9PW	487	219.4
ACØRA	544	250.9	VA3ELE	712	248.2
VA3TO	720	289.6	W9XA	487	229.9
KB8U	570	213.1	AF1T	778	301.0
VE3KH	711	256.1	W1MKY	778	299.8
NØLNO	544	240.9	K6ML	598	225.4
WA2VOI	356	247.9	K9TMS	349	192.2
KBØOZN	390	226.5	K2UA	573	190.3
N6RMJ	598	266.3	K2DH	573	186.0
VE3SST	546	176.4	W6QIW	616	232.4

**Note: Average QSO DX for 10 GHz and Up category represents 10 GHz QSOs only.*

Table 4 – Best DX and Average DX of Top Ten Finishers.

Tables 3 and 4 bring out a lot of interesting details about operating styles and results. A couple of observations:

First, high QSO counts do not necessarily correlate to best DX or large numbers of call signs worked. More travel consistently yields higher call signs worked, and best DX results from focusing on long-haul QSO opportunities, which tend to take more time and effort to complete.

Second, home stations and operators who spend all their time in one or two portable locations, well-located, can produce truly impressive results. Kevin, VE3KH, continues to succeed from his home station in FN03cg, on the west end of Lake Ontario. Just above lake level, his QTH is apparently one of the best places anywhere to be for 10 GHz, and Kevin's station and operating skill put him in position to remain in the top ten. He reports on his methods in his sidebar. Hugh, VA3TO, operates 30-35 km north of VE3KH, and turned in the second-best 10 GHz unique total of 53 call signs, as well as a very impressive third-place finish in the category. Both are perennial top-ten entrants. KB8U goes out portable but operates remotely from his home station for some of his contacts. So, his is more of a hybrid entry, but also provides great results evident from his fourth-place finish.

Rus, K2UA, set a new high-water mark for calls worked this year with 89. Dave, K2DH, leader for the previous two years was just behind at 87 calls. Both are significantly higher than the previous best, set by K2DH last year. Both ops benefited from having 15 stations active in the Rochester area and about a dozen more in the nearby Toronto area. Many of these stations operate on at least two bands.

Dale, AF1T, and Mickie, W1MKY, logged 82 different calls each, which is especially impressive given that they are in the same general geographic area for both weekends. Because of their island locations, they also produced the highest average QSO distance of anyone in either top-ten box, with 300 km on 10 GHz.

Dave, K2DH, (left) and Rus, K2UA, operating from FN32jp (Mt Greylock western overlook) on the September weekend, along with Mike, N2MG and Tony, K8ZR. Their gear is shown to the right. [Mike Gilmer, N2MG, photo]

Regional Highlights

In the 2022 contest, the largest number of logs (23) once again came from New England. California and Canada followed closely with 22. The 21 logs from the W8 call area was up significantly, by 57%, from 2021. Every call area produced at least five logs, down slightly from last year, but the average number of logs per region rose to 14.

Regionally, the West is represented in the 10 GHz and Up top ten box, with repeat entries from K6ML and W6QIW. Regular top-ten entrant N9JIM turned in a solid 41k score, but just missed the box. N6RMJ was the only western station to make the top ten in the 10 GHz category, with 35k. WA6CDR narrowly missed the top ten in the 10 GHz category, by just over 1000 points, displaced by a number of new stations who were part of the Midwest pack operations. AF6RT and N5BF followed with good scores, over 25k, to round out the top three in the region.

West Coast Region

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

10 GHz		10 GHz & Up	
N6RMJ	35,289	K6ML	54,327
WA6CDR	34,229	W6QIW	46,372
AF6RT	28,016	N9JIM	41,823
N5BF	25,802	W6BY	13,392
N6VI	19,814	N6TEB	11,040

In the Central region, Gary, WBØLJC, and Wyatt, ACØRA, led the region and the contest with 73k scores. K9PW won the contest in the 10 GHz and Up category with 92k, and W9XA followed with a 58k top-ten score. WA9TT submitted an impressive 41k score as well. WBØLJC's sidebar gives insights into these operations.

Midwest Region

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

10 GHz		10 GHz & Up	
WBØLJC	73,850	K9PW	92,198
ACØRA	73,701	W9XA	58,635
KBØOZN	35,948	WA9TT	41,110
WØZQ	31,411	WQ5S	25,532
NØKP	23,556	W5LUA	13,516

Canadians once again made strong showing in the 2022 contest, with 22 entries (up by 14 from just nine in 2021!). They landed four stations in the top ten boxes. Hugh, VA3TO, led the pack with a third-place finish in the 10 GHz category, followed in fifth place by Kevin, VE3KH. Both worked 50+ call signs on this band in the process. VE3SST was a new entry to the top-ten box with a strong 35k finish and 41 calls. Peter, VA3ELE, was the sole Canadian in the 10 GHz and Up top ten with a whopping 75k score delivered by a relentless drive to activate as many locations as possible from Western Ontario to Quebec over the two weekends. Bravo on excellent planning and execution, Peter! Elsewhere, VE4MA, VE3ADQ, and VE3KRP also turned in 10k+ scores in the 10 GHz and Up category.

Central Region

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

10 GHz		10 GHz & Up	
VA3TO	59,157	VA3ELE	75,461
KB8U	46,870	K9TMS	50,218
VE3KH	44,432	AA9IL	45,143
NØLNO	36,986	K8ZR	44,964
WA2VOI	36,648	WB8TGY	42,610

The W8 call area produced a lot of strong scores, as many of these ops were part of the Lake Superior operation in August. KB8U finished strongly in the 10 GHz category with 46k, followed by N0LNO and WA2VOI with nearly identical 36k scores, then N0UTP with a solid 29k. Tony, K8ZR, led the 10 GHz and Up category with nearly 45k. Mark, WB8TGY, logged a 42k score, with WA8VPD (35k) and KB8VAO (24k) also delivering strong efforts.

In W9, Gedas, W8BYA, delivered a substantial 27k score from his home station near Fort Wayne. Gedas has really worked to optimize his setup since not many stations are within easy tropo range, and the results prove it's working. K9TMS topped the call area in the 10 GHz and Up category with a huge 50k score followed closely by AA9IL with 45k. Both took part in the Midwest pack operations.

Ken, N2ZN, set up in FN02 and made a 43 QSOs on 10 GHz. [Kenneth Boasi, N2ZN, photo]

Northeast region scores were up in 2022, thanks to impressive 56k scores from W1MKY and AF1T in the 10 GHz and Up category, followed by a strong 41k entry

from perennial island-hopper Paul, W1GHZ. Paul's score was up 14k this year over last year. K1OR and W1FKF rounded out the top five in New England with 20k+ scores. In the 10 GHz category, KCØIYT topped the group with almost 22k, followed by W1AIM, K1CA, N1DPM, and AA1I all closely grouped in the 18-19k range. New England continues to be a hotbed of activity in this contest, with consistently competitive scores in both categories.

In the second call area, two big home stations in the Rochester area duked it out. Wayne, N2WK, narrowly edged Jim, N2JMH, by less than 150 points to top the box on 10 GHz. Chris, K2CS, put in a solid 15k score from his one-weekend portable operation.

On 10 GHz and Up, perennial roving partners Dave, K2DH, and Rus, K2UA, began the contest on Lake Erie the first weekend and spent the second weekend mostly in New England, with K8ZR and N2MG (who also had a golden log!). K2UA topped the team with 48k, followed closely by K2DH with 46k. W2FU, KØSM, and WA2TMC rounded out the box with strong scores of 35k, 34k, and 25k, respectively.

Andy, KØSM, primarily operated from his home station in FN12eu, with a few trips up the road to FN12ev to work stations to the east. Both locations count as one in this contest as they're just 5 km apart. W2FU and WA2TMC traveled together to Lake Erie in the August weekend and several spots in ENY and WNY for the September weekend.

In the third call area, WA3GFZ and W2RMA both topped 10k in the 10 GHz category. K1RZ delivered a solid 44k score, with K3WHC just behind at 39k, in the 10 GHz and Up category. Both ops traveled to Block Island for the first weekend, as Dave, K1RZ, reports in his sidebar.

Northeast Region

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

10 GHz		10 GHz & Up	
N2WK	31,695	AF1T	56,398
N2JMH	31,550	W1MKY	56,215
KCØIYT	21,900	K2UA	48,724
W1AIM	19,917	K2DH	46,900
K1CA	19,902	K1RZ	44,272

There's more on the web!

For complete line scores, full contest results articles, photos, downloadable certificates and more, visit the ARRL contest portal at **CONTESTS.ARRL.ORG**

Bill, K2TER, (left) and Bruce, WA2TMC, line up a QSO from FN23nd in Central New York. [Jeff Ach, W2FU, photo]

W3IP and N9ZL led up the Southeast region with entries in the 10 GHz and 10 GHz and Up categories, respectively. In the 5th call area, WB5ZDP topped the list on 10 GHz with 12k, and WQ5S put in an impressive 25k 10 GHz and Up score. W5LUA also notched a 12k score in this category.

Southeast Region

(Delta, Roanoke and Southeastern Divisions)

10 GHz		10 GHz & Up	
W3IP	11,517	N9ZL	6,760
W5VY	6,116	----	----
NØEDV	794	----	----
AG4V	657	----	----
N8KH	101	----	----

Log Checking Notes

Last year we commented that there was a lot of room for improvement in logging accuracy in this contest. Indeed, we have seen significant improvement, especially in logs with large score reductions. The number of logs with high error rates is down significantly, the maximum error rate is down from well over 30% to 27%, and the number of ops causing busted contacts or NILs in other logs is way down. Good job focusing on accuracy, 10 GHz and Up ops!

This year, 63% of logs (97 out of the 154 submitted) had error rates under 3%. That's really good! Of those, 48 logs (31%) had a 0.0% error rate. Congratulations to the latter group, listed below, on your golden logs! Of the remaining logs, score reductions break down as shown in Table 5.

Score Reductions Due to Logging Errors	
Score Reduction	**Number of Logs and Percentage of Total**
10-27.3%	14 (9%) (down 5% from 2021)
5-10%	25 (16%) (up 2% from 2021)
3-5%	18 (11.6%) (up 1.6% from 2021)
0.5-3%	49 (31%) (up 6% from 2021)
0% (Golden Log)	48 (31%) (down 3% from 2021)

Table 5- Score Reductions Due to Logging Errors

The most common causes of operators causing others to lose contacts remain (1) ops logging something for their sent exchange that is different from what they sent over the air, causing a busted exchange for the other station, and (2) operators not logging QSOs, causing the other op to lose the QSO and distance points. Even some of our golden log entrants caused some errors for others in these ways.

Side note: One way to improve accuracy, at least for some ops, is by using the built-in record-to-micro-SD-card feature of the IC-705, which has quickly become the most popular microwave IF radio in use today. The 705 can be configured to record every sent and received exchange, so you can play back a QSO and make sure you've logged it correctly.

A reminder that nearly all logging errors in this contest are avoidable. Please take the time to log QSOs carefully. If you're logging on paper, cross-check what you entered into your computer from your paper log!

The next ARRL 10 GHz and Up Contest will be held August 19 – 20 and September 16 – 17, 2023

Golden Logs (*asterisks indicate top-ten entrants*):

10 GHz:
WBØLJC,* N1DPM, WB5ZDP, KØAWU/VE3, N7DA, KØHAC, VE3SMA, AF6NA, VE3EG, N8IUP, KA1ZD, WB2WGH, W3IPA, W5VY, VA3CW, WQØP, KA9VVQ, W9FZ, NØHZO, W3HMS, N6UTC, WZ1V, VE3JGL, K5LLL, K8CLP, AC7JD, W8RU, K2QO, NØEDV, AG4V, KM3T, VE7AFZ, KC8VGG, VA7SC, VE7HR, KB7IOG, N8KH

10 GHz and Up:
W1MKY,* WA9TT, K1OR, N2MG, WA1MBA, N1JEZ, N9ZL, N1SAI, WAØCNS, KJ7OG, VE4SA

Another 10 GHz and Up Contest that Didn't Disappoint!

Over the past few years, I have worked to improve my score from the previous year, and despite being unable to fully commit in August, I was able to continue that trend. I had to abandon my plans to rove Lakes Erie and Ontario with VA3ELE and VE3SST at the last minute in order to stay close to home.

Also, my 24 and 47 GHz rigs were damaged after taking a tumble in high winds just before the contest. I repaired the 47 GHz rig but was unable to get 24 GHz back in action in time, so I decided to operate in the 10 GHz only category. All things considered, my expectations for August were exceeded with quite several contacts over 500 km. September was also very productive, so I ended up surpassing last year's overall score by a significant margin.

I spent Saturday in August at my favorite portable site on the train overpass in grid FN03cn, about 20 minutes from home. In the morning I worked K2UA, K2DH, VA3ELE, and VE3SST, plus some other Lake Erie rovers, as well as a handful of locals.

Rain scatter opportunities that developed in the afternoon yielded a good handful of really nice DX contacts. I worked K2YAZ to the northwest in FN74av at 510 km, and then K1RZ, AF1T, W1MKY, and K3WHC in FN41ee on Block Island to the east. These latter contacts represent my personal best DX on 10 GHz at about 721 km, and also a new VUCC credit from my home grid (#49). Shortly afterwards I worked W1GHZ and W1AIM in FN44ig at 685 km for Grid #50.

I went home for dinner, then returned to FN03cn and worked W8BYA to the southwest off some more rain cells at 541 km, and W3IP to the south at 525 km, then finished off by working some of the rovers before calling it a night at around 8 pm.

On Sunday morning I decided to go to a different location to allow me to work some of the same stations again. I set up on the Niagara escarpment at the west end of Lake Ontario in FN03de, about 45 minutes from home. This location has some elevation with a fantastic view straight up the lake. I started off by working some locals, the Rochester crowd, and rovers VA3ELE and VE3SST along the North shore of Lake Ontario. More rain cells developed, and I was able to work N1JEZ, W1FKF, KA1NKD and W1EX in FN44ig at 687 km for a nice multi-op DX cluster of points. I also worked W1GHZ again, this time he was in FN34uk. Although this location doesn't have a great view to the west, I was able to work W8BYA again off a rain cell that happened to be in the direction of an opening between some trees not far behind me. I made some more close-in contacts then I had to run home for a bit.

Later on Sunday I went to FN03cq, just a little north-east of my home. More pop-up cells to the east offered two more DX contacts with W1GHZ and W1AIM in FN34om at 566 km. I worked some rovers and a few more locals then packed it in for the weekend at 7 pm.

In September VA3ELE and I drove 9 hours on Friday to Mont Megantic in the Eastern townships of Quebec with hopes of snagging some new callsigns in the East. We were counting on making the majority of the weekend Q's on Saturday since the forecast for Sunday was calling for a lot of rain along our path home.

We had a slow start on Saturday morning atop Mont Megantic, FN45kk (elevation 3650 ft). The temperature was a chilly 6°C (42°F) so we put on whatever layers of clothing we had, but we didn't think to bring a hat or gloves.

Conditions were initially poor, but it picked up through the morning. We worked W1GHZ on Block Island in FN41ee then AF1T and W1MKY on Martha's Vineyard in FN41ni. Also, a good haul to W2FU, K2TER, and WA2TMC in FN23nd. We worked a few others then moved on to Mont Hereford (FN45eb), then to a farmers field just west of Coaticook, QC (FN45bc) and finally Salaberry-du-Valleyfield (FN25wf) where we worked a couple of stations before retiring to an AirBnb for the night.

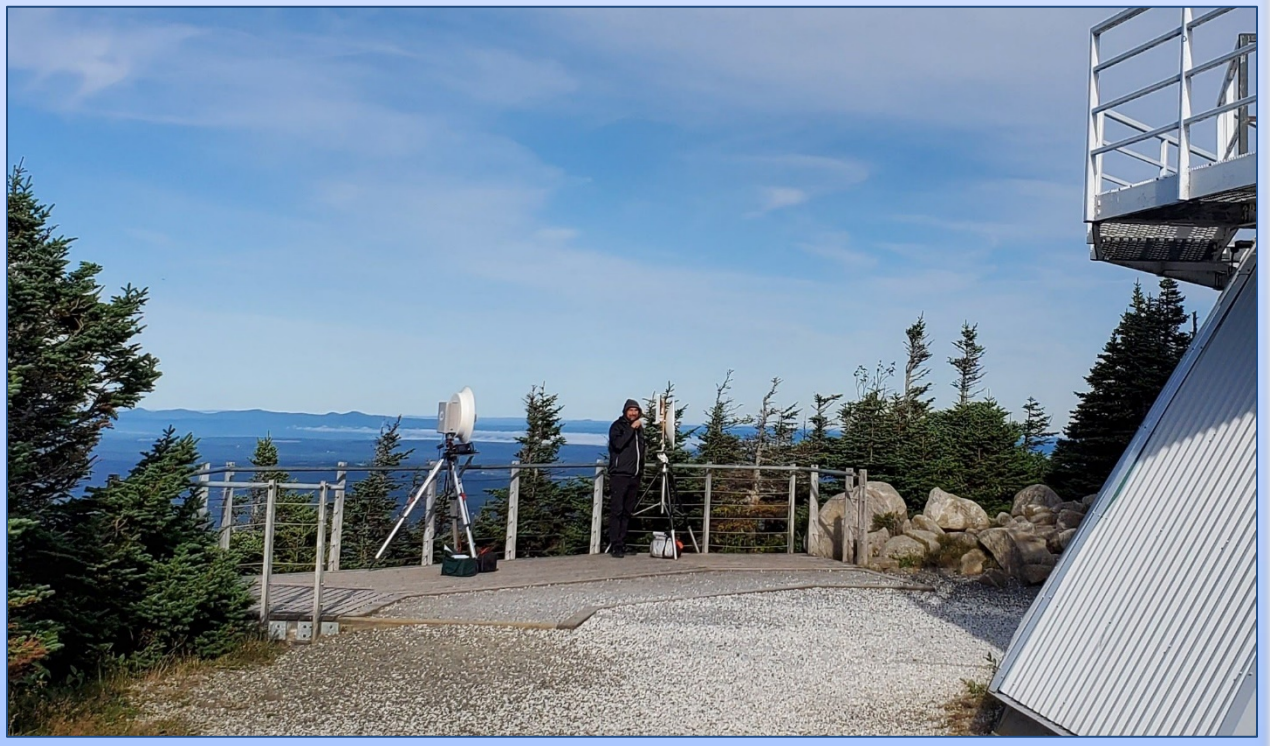
On Sunday morning we worked a few more stations from FN25wf including AF1T and W1MKY in FN41qk, W1GHZ in FN41ee, plus a few others until it started to rain. We packed up and proceeded west. The weather radar was showing breaks in the rain, so we drove while it rained then stopped to operate when there was a break. We continued this pattern until the rain passed later in the afternoon. We snagged K1CA, AA1I, N1DPM, and K1OR in FN42wb for another good multi-op group of points, then W1GHZ again in FN41ee from our second stop in FN25sd. We managed to work W1GHZ

in FN41ee a couple of more times as well as K1TEO in FN31jh. We made nine stops in total on Sunday, our last in FN14if in the final few minutes before midnight, working VE3KH. Despite the rain, Sunday turned out to be a lot more productive than Saturday.

With my best score to date, a new personal best DX record on 10 GHz and two new grids that brought me up to the 50 grid VUCC milestone, this year's 10 GHz and Up Contest turned out to be remarkable for me.

A big thank you to René, VE2UG, who roved to many grids on Saturday and operated from his home station on Sunday in September for several more Q's as we roved west. A special mention also to the home stations that we were able to work reliably like VE3KH, N2JMH, N2WK and KØSM. Also, to rovers W2FU, K2TER, WA2TMC and K2CS. We really appreciate their ability to get on quickly to work us so we could keep on rolling. All of those points add up!

And of course, thanks to my roving partner Peter, VA3ELE. There's nothing like roving with a like-minded operator who has a similar operating style and cadence. Sharing the same warped sense of humor helps make the hours of traveling together go by quicker as well. – 73, *Hugh VA3TO*



Hugh, VA3TO, and Peter, VA3ELE, operated from a cold mountaintop in FN45 in the September weekend. [Peter Prabucki, VA3ELE, photo]

The 2022 10 GHz and Up Contest

Mickie, W1MKY, and I really enjoyed this year's 10 GHz and Up Contest. I agree with K2UA that 10 GHz is the new "Magic Band." We are actively trying to recruit newcomers to explore the exciting Microwave Bands. In fact, we gave a 10 GHz presentation with Bob, KB1QV, at our Radio Club on October 11, and another with Chip, W1AIM, ("The Chip and Dale Show") at NEARFEST in Deerfield, NH, on October 14.

The August 20-22 weekend was spent with Dave, K1RZ, and Steve, K3WHC, on Block Island, RI (FN41ee). We had a fantastic ocean view from our rooftop porch about 230 ft ASL and were set up a few days before the contest. Saturday afternoon brought some great rain scatter contacts over 500 km, the most distant being VA3TO at 721 km. Sunday started out with some great coastal Tropo, but few folks were up early enough to take advantage. In all, 83 contacts were made on 10 GHz, with an average distance per contact of 329 km. The higher bands were not so good, with few people within

range. Mickie and I went to adjacent Grid FN41fd to work Dave and Steve on 10, 24, 47 GHz, and 478 THz (full-duplex voice using red LEDs). We had no success with 122 GHz, as the gear was dripping with dew.

In September, Mickie and I made our annual pilgrimage to Martha's Vineyard, MA. Saturday, Sep 17, was spent near the Gay Head Lighthouse (FN41ne, about 170 ft ASL). This is a very popular spot for tourists, so we often have to explain what we are doing. We present handouts to those who seem interested. The new lighthouse keeper and the tour guides welcomed us and are looking forward to seeing us next year! They witnessed a CW aircraft scatter contact, and were fascinated–maybe some new Hams in the future? By the way, look up the PBS "NOVA" Program about moving this historic lighthouse. Every year we visit and witness remarkable landscape changes from erosion.

Sunday, Sep 18, we went to another spot on Martha's Vineyard, at FN41qk. It was very windy, and activity was lower. But at least we didn't get soaked, like the folks to the west and the north of us. Several long-distance tries didn't work out, and our hoped-for contacts with the K2UA/K2DH/K8ZR/N2MG group as they traveled west in New York were washed away.

Summary

My contest total was 174 contacts with 82 unique band-calls. Mickie did nearly as well with a slightly lower score. Best DX of the contest was with K3WHC, K1RZ, and W2RMA in West Virginia–a new state on 10 GHz. My best DX claim of 786 km is from FN41ni93rq to FM08jl01xb, which is greater than the Cabrillo value of 779 km calculated from the centers of FN41ni and FM08jl.

Are we looking forward to this again next year? You should already know the answer to that. Mickie and I both consider this to be our favorite radio operating event. It's not just the technical challenge–there is a spirit of camaraderie and helpfulness, as well as being outdoors and coping with the weather, that bring about a great sense of accomplishment.
– Dale Clement, AF1T

VE3KH on Operating from Home

VE3KH's home station in FN03cg. [Kevin Hobbs, VE3KH, photo]

Working 55 call signs on 10 GHz took some persistence. Having a 24/7 home station has allowed me to get very familiar with who is within a 750 km circle, and the propagation needed for me to work them.

A combination of random search and pounce (made easier by the Flex wide spectrum waterfall, where I can always see 500 kHz of spectrum), augmented by texting and awesome tools like KØSM's rainscatter.com website and the K1RZ/W3SZ web map, made it possible.

There are still some Canada-to-USA text limitations for some people, along with some no-coverage zones. I am hoping for a higher count in the 2023 contest as some of the stations that were around Lake Superior in 2022 should be within range. New stations are also getting online, and I hope to have my improved 40-W station on the air by then.

VE3KH uses a bracketed tower with dishes for 10, 24, and 47 GHz. [Kevin Hobbs, VE3KH, photo]

10 GHz 2022 at K1RZ

Round 1

On Monday before the contest, Dale, AF1T, Mickie, W1MKY, Steve, K3WHC, and I met on the ferry to Block Island, and set up that evening on the porch on the highest point on the island and started playing on 10 GHz. Tuesday during the day we worked Ray N3RG, Jeff, K1TEO, Mike, W3IP, and Roger, W3SZ, just to be sure everything was working. On Tuesday evening, I worked Peter, VA3ELE, giving him FN41 for his 57th grid on 10 GHz using airplane scatter. Finished out the evening working John, N9ZL, in FM08us for the best DX of the day. Good activity for a Tuesday, I'd say.

On Saturday we started the contest working Tyler, KM3G, near his home at FM19ps for our first contact. Followed by our local beacon Jeff, K1TEO, and then Phil, K3TUF, and Paul, WA3GFZ, (both on Penobscot Knob PA) in FN21be. Then to the State of Maine reps John, K1OR, and Larry, K1CA, in FN53fu. Then W3SZ at FM19rx (and later on at home QTH FN20ad). During the next hour I worked John, W3HMS, on CW, also at FM19rx. During that hour we worked Tommy, W1AUV, FN41oo, and John, N9ZL, FM08us, on Hogback Overlook (VA) at 629 km.

Next up were the team of W1FKF, KA1NKD, and W1EX at FN43bj from the parking lot below the Mt Kearsarge (NH) summit. Followed by Dave, K1ZZ, and Linda, KA1ZD, on the school parking lot at FN42ad. Later on, I also worked Fred, N1DPM, and John, AA1I, at this same spot. And then the team of Paul, W1GHZ, and Chip, W1AIM, at FN34wl. Followed by Chris, KG6CIH, on Mt Agamenticus at FN43pf. And later on, worked Leandra, AF1R, at this same spot. Went on to work Glenn, KCØIYT, on Mt. Wachusett (FN42bl) and Ray, VE3FN, in FN25dk. All good locations for sure. After that, Ron, WZ1V, went out on his sidewalk in front of his house on the road lined with trees and found that the roadway actually was oriented directly toward Block Island, and Ron worked us all. Thanks for your good effort on these four contacts, Ron. Many operators were out at all kinds of locations, and this made it real fun for all involved.

Rainscatter: Who better to work for our first RS contacts than the creator of rainscatter.com, Andy, KØSM, in FN12ev? I immediately opened the https://rainscatter.com app on the phone and set up to also work Jim, N2JMH, FN12bw, Kevin, VE3KH, FN03cg, Wayne, N2WK, FN03xe, Peter, VA3ELE, FN03dm (operating his home station while out portable) and Hugh, VA3TO, FN03cn (at 721 km for best DX of round 1) – all on RS in the next couple of hours.

Late Saturday evening on the porch the dew was extremely heavy. And Dale said that other times this has happened when he'd been on Block Island it was a precursor to a band opening the next morning. And sure enough, the K3EJJ beacon north of Baltimore was S9 in the 6 o'clock hour on Sunday morning. We worked everyone else in Maryland and PA within the first two hours of the day to include Brian, N3OC (FM19le); Maurice, K3EJJ (FM19of); Tyler, KM3G (FM19rx) and Chris, NG3W (FN11bo). Thanks to you for getting on before the inversion layer burned off. And thanks to the many more who continued to operate through the day on Sunday. Overall, round 1 was very successful with 88 QSOs, 58 unique calls, and 27,521 km.

Round 2

Bill, W2RMA, Steve, K3WHC, and I had talked about operating from Reddish Knob, FM08jl, in WV at 4400 ft ASL over the recent years. And we decided to make the effort to do just that on Saturday. It is an interesting site, and when we got up there coming up from Harrisonburg VA before sunrise, it was a pleasant morning – shirt sleeve weather, and very little wind. But in trying to tune the beacons and other relatively local stations we felt like there was an inversion layer below us in altitude as we were unable to hear these local stations and may have to wait until the layering in the atmosphere would burn off in a few hours.

Three hours later I made my first contact with Paul, W1GHZ, on Block Island at FN41ee. It was an airplane scatter contact, and each of us worked Paul, but with the typical slowness of an airplane scatter contact. The predominant propagation of the day, with very few exceptions were the same–aircraft scatter, and happy for it. Then I worked Phil, K3TUF, in FN10we, Chris, NG3W, FN11cp, and John, N9ZL, on the next ridge over to the northeast at FM08us. I also worked John on 24 GHz. Plus, we worked Gene, WA4PGI, FM07as, down in the valley near his home QTH, with Gene using a bounce off a nearby tower. Then we three worked Dale, AF1T and Mickie, W1MKY, at FN41ni on Martha's Vineyard MA at Gay Head lighthouse, for our Best DX of the contest at 786 km. In the late afternoon we broke down our WV operation and drove to Bedford, PA.

Sunday we got up to Blue Knob Ski Resort, FN00rg, and set up for another very pleasant morning in terms of visibility and temperature. We worked W1GHZ again in FN41ee. Then we worked N2JMH and VE3KH using tower bounce off a ski-lift tower about 100 yds away and generally in the direction of WNY and Toronto. Later, using reflection off the same ski lift, we worked Wayne, N2WK, and Peter, VA3ELE (Peter was operating his Toronto station remotely while motoring across the north shore of Lake Ontario). Just after local noon we worked the team of Rus, K2UA, Dave, K2DH, Tony, K8ZR and Mike, N2MG on Mt Greylock at FN32jp at 517 km. We also worked John W3HMS, FN10mf, plus Phil, K3TUF, and Claire, KA3TUF, in FN10we. Next up was the team of Jeff, W2FU, Bruce, WA2TMC, and Chris, K2CS, at FN02xu. We finished by working Tyler, KM3G, in FM19pt.

My final score was 115 QSOs, 38,242 km, 66 unique calls and 44,272 points. Thanks to everyone who went out to make this activity more fun for all to enjoy. Thanks for the QSOs and the tries. – *Dave Petke, K1RZ*

New to 10 GHz and the Hook is Set

This contest was my first time on the 10 GHz band. I just finished setting up my 10 GHz station right before the first weekend. With the coaching of Steve, KB8VAO, I was able to log 18 QSOs from EN91kt.

For the second half I helped a fellow ham looking to get into the microwave bands by giving him his first three QSOs on 10 GHz! Now he has the bug and is looking to set up his own 10 GHz station. – *Tim Rossiter, W3IPA*

First-Timer in EM19

This was my very first effort at the 10 GHz and Up Contest. I had no idea what to expect. It turns out that it is very different from other VHF/UHF contests. It took me a bit to figure out the concept of the scoring.

The first weekend was long and very slow with only two contacts with my neighbors NØOY (my mentor), at 91 miles, and WØLGQ at 147 miles. These are my only two locals for now, but we are working on more, and looking to find others!

The second weekend was much more exciting for me as there was a group of rovers in Iowa that I was able to work from two different locations due to rain scatter, at 241 km, for my best DX of the contest. I was also able to work two stations north of St. Louis in Hannibal, MO, at 411 km via rain scatter.

I am running a DEMI 3-watt transverter with a Yaesu FT-817ND 144 MHz IF rig into a 24-inch prime feed dish mounted on a tripod. All of this is mounted in the back of a John Deere Gator that allows me to pick the best spots on my property for different directions. – *Greg, WQØP*

WQØP's gator allows for moving the 10 GHz system around the property for the best shot in any given direction. [Greg Cerny, WQØP, photo]

Adventures on Lake Superior and in Iowa

The First Weekend: Lake Superior

We have operated on the lake a number of times over the past 20 years. It's a moderate drive for those of us in the Minnesota Twin Cities area but much longer for those going to the UP of Michigan in Michigan and Illinois as well as those in Canada. This year we had groups in all three areas. In Michigan we use two sites on the northern end of the Keweenaw peninsula, Great Sand Bay EN57vk, about fifty feet above lake level and Mt Brockway EN67al at 750' above the lake. Both sites offer open views across the lake to all Minnesota sites. Unfortunately, only Brockway is open to Canada as there are dense trees and higher ground adjacent to Great Sand Bay that block the path. Most of the Michigan ops drove from lower Michigan and Illinois. In each group we had a few ops with 10 G only but most of the ops also had 24 G and some had 47 G. There were plans for even higher bands, but I don't believe that any contacts across the lake were made on those bands.

The Michigan group stayed at one site each day while those on the Minnesota North Shore (we call it the "North Shore" but it's really the west side of Superior) travel up the lake shore on Saturday, from the Duluth area to Grand Portage, near the Canadian border, and then back south on Sunday. The Canadian ops had planned to operate from two different sites, Terrace Bay, ON and Marathon, ON. Both sites that have been used previously, not always successfully. It turns out that Terrace Bay no longer has any place to operate so all operations from Canada occurred at Marathon.

On the Minnesota North Shore, we had a small group this time. WBØLJC, K9PW, WA9TT, W9XA, ACØRA, KBØOZN and W7XU. Unfortunately, W7XU found his equipment didn't work at the first site. He couldn't hear and was not able to troubleshoot the problem. He called it a day and headed back home to Sioux Falls, SD. K9PW, W9XA and WA9TT all had higher bands.

In Michigan there was a good-sized group consisting of KB8U, WA2VOI (from the Twin Cities), WB8TGY, WA8VPD, K3SIW, K8ZR (from Ohio), AA9IL, K9TMS, NØLNO, NØUTP and WA8WPI. The 10 G only ops were KB8U, NØLNO, NØUTP (both from Iowa) and WA8WPI. All the rest had at least 24 G and many 47 and up.

The Canadian ops were KØAWU from MN, KØKFC from WI, VE3KRP, VE4MA and VE3ADQ. VE4MA was late arriving as one of his last states was on 1296 EME early Saturday morning. After making the contact he made the long drive from Winnipeg to Marathon, so he was only able to be on Sunday.

Planning started in December 2021. Early planning was by WBØLJC, K9PW, WA2VOI, WB8TGY and VE4MA at their respective areas of the lake. The Minnesota North Shore and Michigan Upper Peninsula are vacation sites for many, so it can be hard to find a place to stay if you don't do it early. Some of the ops had already confirmed their rooms in January. After the early interest there was about a 50% fall off of those who said they planned to join us but chose not to make the trip. It could have been a huge event if there hadn't been so many drop outs.

Saturday- The Michigan ops set up at Great Sand Bay and the Canadian group at Marathon, ON. The MN North Shore rovers have started at Thompson rest stop, just south of Duluth, in previous years. Thompson overlooks the Duluth harbor and the lake. It's over 600' above the lake. Over the years the site has become overgrown and so isn't very useful anymore. However, the access road, about 30 feet lower, has a pull off with room for a few vehicles. It also has an open look back to the south, something Thompson doesn't have. Many of Twin City 10 GHz ops had decided to stay back near home this time but were willing to drive to a site with good views to the north. There aren't any usable sites near the cities so most traveled about an hour south. Another couple had a view to the north from the roof top of their apartment buildings. We quickly ran with all of them at moderate distances of 216 and 256 km. Then ran with the group at Great Sand Bay at 314 km. This is our longest path of the day with Michigan. I think some of the others made a contact with one of the Canadian group members.

Next is a drive through Duluth to a new site at Lester River. The site we normally use was closed this year for remodeling. We quickly ran with the Great Sand Bay group. The path to the south is blocked by buildings. Signals have only been fair so far, so we didn't try with the Canadians.

Our third stop was a new site chosen for its views only to the south. Since it's less than ten miles from Lester River we couldn't use it to work Michigan. The southern groups had agreed to stay around to work us.

We finished with everyone pretty quickly. While the last Q's were being made I walked by one of the other vehicles and noticed that one of our group was sitting on the ground with others standing around him. He had collapsed but was now sitting up. Emergency services were called, and he was taken to the hospital in Duluth. That left his vehicle sitting there full of equipment. Since I was riding with another op I agreed to drive it to the hospital, drop it off and then we would catch up with the other rovers at the next site. I dropped the vehicle off in the parking ramp, took the keys inside and left instructions about who the keys belonged to and where it was parked. I watched the info being written down. Since I'm not a relative they wouldn't allow me into the emergency room to tell him personally.

At this point we left to rejoin the rover group. The rest of the rover pack stopped at a new site that Pete, K9PW, had found earlier in the week. Unfortunately, I didn't know the location and through an oversight we didn't have a 2 M rig. When I finally got a hold of the group on the phone and found that we had already passed the site and they were finished with their contacts with Michigan and Canada. We decided to continue up the shoreline to the next site. Thus missing 11 Qs with the Michigan ops and some with the Canadian ops. Were able to work all the Canadians on Sunday, so no loss there.

We continued up the shore making four more stops. The long emergency delay caused us to miss a couple of sites on the north end of the route. At Grand Marais the 24 G and up ops wanted to work Michigan on the higher bands so the three of us with 10 G only left them and moved on. Our last stop was a beach site north of Grand Marais. We quickly worked the Michigan ops and then called the other rovers who were still at Grand Marais Harbor finishing up their Michigan contacts. We called them to get the uniques out of the way. To our surprise we heard "Stand by. We have another op." It was the op we had left in the hospital in Duluth. After a number of tests, the Doctors couldn't find anything wrong and since he had recovered they released him. His adventure wasn't done yet. The keys got to him but not the location of his vehicle. He took a taxi back to the site where he had collapsed and found no vehicle. Then back to the hospital in Duluth. After driving around, he finally found his vehicle in the parking ramp. I have no idea why the admin desk gave him the keys but didn't tell him where to find the vehicle. I saw the information being written down.

This was our last site for the day. We needed to make the 25-minute drive to Grand Portage and the Casino as the restaurant there closed at 8 PM. The upper band ops stayed in Grand Marais to work the higher bands with Michigan and to get dinner. Then drove north 35 miles north to the Casino.

Sunday-
We started at a highway overlook pull off just south of the Canadian border. The Michigan group was now operating on Mt Brockway. The distance to Michigan is short, 144 km, so contacts were made quickly. The 24 G and up group stayed to work 24 and 47 G. The 10 G only ops continued south using the same sites that we had used on Saturday. After working the Michigan ops from Grand Marais, we then worked the Canadian group in Marathon with strong signals.

Everyone moved to an overlook up the hill from Grand Marais called Pincushion Overlook. We ran with one of the Minneapolis group from his apartment roof top but nothing was heard either way. Unusual since we had always been able to work back into the cities from there. We continued with the 10 G only group leading the higher band group and leaving shortly after the high band group arrived at a site. Signals were outstanding most of the day. The longest Q's of the day were 392 km with the Marathon ops. Signals were excellent, S9+ at that distance. Unfortunately, we were not able to work Canada at our last three stops as they had called it a day. The Michigan group was getting smaller too. Many of them wanted to work higher band uniques so some of them moved to a LOS site near lake level to work those still on Brockway.

For the first weekend I had 187 Qs. Because of the missed stop most of the others had 198. Average distance for the weekend was 238.7 km. I worked 29 uniques.

The Second Weekend: Central and Northeastern Iowa

Saturday-
The rover group consisted of WØZQ, WBØLJC, ACØRA, NØLNO and NØUTP.

We started at a site north of Ames, Iowa. Our goal was to work our friends back to the north in the Twin Cities area and near St Croix Falls, Wisconsin. We also wanted to work the small group, AD7OI and KI7GVT, and AF4JF, in Hannibal, MO.

At our first site we got a phone call from Pete, WQØP, in Kansas saying that there was a chance to work on rain scatter. Fortunately, this year the view over the farm field to the SW was soybeans and not 8' tall corn. We put the northern group on hold to run with Pete. Then NØOY also let us know he was on frequency, so we worked him at 543 km. Both were CW. I don't know why we didn't try with the Hannibal ops. I guess it just didn't cross our minds as we were already running late for our next stop. Signals to the northern ops were weak at a distance of 350 km. It didn't help that there was a cold front between us but no rain. A cold front tends to kill the signal strength.

At our second site, a bridge over I-35, we worked the northern group and another near Rochester, MN. This is the site I had picked to run with Hannibal. We had easy contacts with all three ops there on SSB. There was a little rain scatter enhancement. Kevin and Tammy, AD7OI and KI7GVT, didn't need any enhancement with their 60 W–they were S9+ at 340 km. Herbert, AF4JF, with only, I think, 8 W, was only S4. Again, because we were running late we didn't try with WQØP or NØOY. We could see a long in flow band to the SW, so the rain was still there. I'm sure we could have worked both of them.

Our third stop was another bridge, this time over US-20. Good views to the north but not as good to the SE, there are some trees in the path. We worked the northern group and then the Hannibal ops, again with good signals from MO. Then we ran with WQØP and NØOY. NØOY was the longest Q of the contest and weekend at 545 km. We decided to move north rather than the planned Easterly move because of the weak signals from the northern end. This move left us without planned sites, so we had to resort to checking out sites from past roves in the area. We've roved the area many times so there were plenty to choose from, but you never know until you arrive if the site has corn or beans. Because of the move north this was the end of our tries with Hannibal and Kansas.

Four more stops working the northern groups and we called it a day. We needed to get to our hotel and the restaurant where we planned to eat dinner closed at 8 PM. We had missed many contacts with the couple who operate from their apartment balcony. Strange as they were the closest of the groups. The poor conditions and having to work many different directions slowed our progress. We were only able to make seven stops on Saturday, nine to eleven is more typical.

Sunday-
We started NE of Oelwein, IA, where we spent the night. Conditions were good, but it took 20 minutes to work the five northern stations. The long time is the result of having to aim in different directions. Then a quick Q with Ron, W9ZIH, in EN51nv and we were on the road for eight more stops. All but the last of these sites had been used before so there was no need to hunt for an open look north. We did spend a lot of extra time at the last four in EN42 and 43 beaconing toward EN37ed trying to work KØAWU. There was a little low rain in the path. Two of us were seen or heard weakly at each site, but not enough for a contact at three of the sites. We did complete at Highview road, EN43fi, at 452 km. This site has great views to the north, with the 15-mile horizon to the north. Signals were better on Sunday and improved throughout the day. Of course, we were getting closer to the northern sites and the cold front had moved east.

For the second weekend I had 92 Qs and an average distance of 277.9 km. I added another 8 uniques.

For the contest I had 279 Qs and 37 uniques with a contest distance average of 251.4 km. I had 62 Qs of 300 km or more, five Qs over 400 km and two over 500 km. No bad for the flatlands of Iowa and Lake Superior.

All in all, a good time both weekends. Thanks to Mike, KBØOZN, for letting me ride along the first weekend and to Jon, WØZQ, for letting me navigate and ride along the second weekend. – *Gary Danelius, WBØLJC*

2022 ARRL 10 GHz and Up Contest- Call Area Leaders

Call Area 0

10 GHz Only		10 GHz and Up	
WBØLJC	73,850	K9PW	92,198
ACØRA	73,701	W9XA	58,635
KBØOZN	35,948	WA9TT	41,110
WØZQ	31,411	AF4JF	6,243
NØKP	23,556	WAØCNS	1,478

Call Area 1

10 GHz Only		10 GHz and Up	
KCØIYT	21,900	AF1T	56,398
W1AIM	19,917	W1MKY	56,215
K1CA	19,902	W1GHZ	41,340
N1DPM	18,916	K1OR	22,180
AA1I	18,642	W1FKF	20,426

Call Area 2

10 GHz Only		10 GHz and Up	
N2WK	31,695	K2UA	48,724
N2JMH	31,550	K2DH	46,900
K2CS	15,218	W2FU	35,078
NR2C	9,375	KØSM	34,254
N2ZN	7,676	WA2TMC	25,418

Call Area 3

10 GHz Only		10 GHz and Up	
WA3GFZ	12,764	K1RZ	44,272
W2RMA	11,797	K3WHC	39,244
NG3W	9,211		
W3IPA	6,406		
W3HMS	3,740		

Call Area 4

10 GHz Only			
W3IP	11,517	N9ZL	6,760
NØEDV	794		
AG4V	657		
N8KH	101		
W3IP	11,517		

Call Area 5

10 GHz Only		10 GHz and Up	
WB5ZDP	12,835	WQ5S	25,532
W5VY	6,116	W5LUA	13,516
K5LLL	2,558	AA5C	12,026
WA5TKU	2,467	AA5AM	9,802
		KM5PO	9,295

Call Area 6

10 GHz Only		10 GHz and Up	
WA6CDR	34,229	K6ML	54,327
AF6RT	28,016	W6QIW	46,372
N5BF	25,802	N9JIM	41,823
N6VI	19,814	W6BY	13,392
W6DL	19,615	N6TEB	11,040

Call Area 7

10 GHz Only			
N6RMJ	35,289	KJ7OG	1,035
K6VHF	14,547		
N1AV	4,132		
AC7JD	1,206		
KB7IOG	241		

Call Area 8

10 GHz Only		10 GHz and Up	
KB8U	46,870	K8ZR	44,964
NØLNO	36,986	WB8TGY	42,610
WA2VOI	36,648	WA8VPD	35,414
NØUTP	29,217	KB8VAO	24,792
K8DP	10,236	K2YAZ	18,155

Call Area 9

10 GHz Only		10 GHz and Up	
W8BYA	27,158	K9TMS	50,218
		AA9IL	45,143
		KØKFC	32,982
		W9SZ	32,151

Canada			
10 GHz Only		10 GHz and Up	
VA3TO	59,157	VA3ELE	75,461
VE3KH	44,432	VE4MA	12,352
VE3SST	35,154	VE3ADQ	11,238
VE3FN	9,716	VE3KRP	11,139
VE3SMA	9,696	VE2UG	6,756