



ARRL 10 GHz and Up Contest 2013 Results

By Bruce Richardson, W9FZ

Another year, another adventure on the microwaves



Kevin, AD7OI's equipment and view from Mt Frazier (DM04ms). Mt Frazier has a challenging road to get to the top. But once there, the views are incredible in many directions. (Photo AD7OI)

Microwave operators took to the air on August 17-18 and September 21-22, 2013 to see what they could accomplish on frequencies of 10 GHz and up. Beforehand, it's fun to plan on where to go and who to attempt to contact. Then, when the weekends arrive, it's time to put the plan into action—first by loading the car. Some operators went to mountaintops or seashores to get a good, unobstructed horizon. Some went to the flat farm fields of the plains often looking for soybeans to shoot over rather than corn which blocks the way.

Wherever the operators are, they marvel when signals are surprisingly loud, usually in the early morning and late evening. When conditions get tough or distances quite long, they utilize all their skills to eke out a contact from the noise. It all starts with a clear horizon. Close-in foliage or terrain will either block or severely attenuate microwave signals. Mountain tops and shorelines of lakes and oceans offer clear horizons. Inland, in varying terrain, one has to work harder to find a clear view. However, if one can get even one mile away from obstructions, trees, buildings, and rolling terrain, that is a clear enough horizon. If a mountain blocks your desired direction, you'll have to be five to thirty miles away from it to have a good chance of working beyond it. Your transmitted signals will energize the dust particles and water molecules above the close-in obstruction and will scatter in all directions. Fortunately, some of the signal scatters in the direction of the station you are trying to work.

Single sideband (SSB) is preferred for its ease and speed of making a contact. As signals get weak near the noise level,

repeats and well-articulated phonetics help get the message through and complete the contact. When signals get weaker still, switching to CW gives margin above the noise to still get a signal and message through. When CW is so weak as to tell a signal is there but not make out what is being said, some switch to digital modes like JT65 and JT4 and crawl into the noise and find the signal. Not many microwave operators are using digital modes portably—yet—but the number is growing every year.



Art, KC6UQH, was on Mt. Frazier, DM04ms, for the August weekend. Art is seen here working Pete, W6DXJ, 526 km to the North on Bald Mountain. Conditions were good. W6DXJ's signal was armchair copy. (Photo K6NKC)

Conquering Murphy

Each year, a few operators are beset by equipment problems. It's very frustrating to have a system that worked at home not seem to be working on the hilltop. That leads to troubleshooting in the field and in the heat-of-battle. With the wind blowing, many an operator has crouched on their knees by their dish system with DVM probes in their hands trying to determine what's working or not. Weekends are salvaged when a resourceful operator is able to reattach a broken dish feed or rewire a connector and continue making contacts. It's in trying times like equipment failures that fellow operators come to the rescue. Sometimes the spares box of one operator may have just the item another needs to get back on the air.

2013 Contest Highlights

Both East and West Coast operators made multiple 600+ km contacts. Neither coast had particularly good conditions but used skill and patience to make contacts at these distances. In September, Colorado operators were off-the-air completely due to the terrible flooding that happened earlier in the month. The northeast was impacted by rain during part of the September weekend.

Richard, W6SR, had the longest 10 GHz QSO this year at 676 km. He was on Bald Mountain (CM88ws) northwest of Sacramento, CA and worked Mel, WA6JBD, who was on Mt Potosi (DM25gu) northwest of Las Vegas, NV. Richard reports that Mel was workable for over 30 minutes during the middle of the day and suspects a weather front between the two helped make it possible. On 24 GHz, five operators: W1GHZ, KA1OJ, W1FKF, W1EX, and N1SAI worked 298 km. Some were on Mt Mansfield, VT FN34om while the other end of the path was at FN41no. On both 47 GHz and 78 GHz, KA1OJ and WA1MBA were the only stations reporting activity and completed 36 km contacts.



Kevin, AD7OI, spent the August weekend on Cunningham Mountain DM23tn near Blythe, CA. (Photo AD7OI)

10 GHz Only Category

In the 10 GHz Only category, Gary, WBØLJC, for the third year in a row, led all 72 operators in this class with a score of 84,754. Although his log slipped through the cracks in late September, Joel, KD6W, had a fine second-place finish with 286 QSO's and 68,603 points. Joel activated 50 locations over the two weekends and had an average distance of 230 km for all of his contacts. Mike, W6YLZ, came in 3rd place and Jerry, KØCQ, was 4th. Most of the remaining Top Ten came from Ø-land.

10 GHz and Up Category

Lars, AA6IW, took top honors in this category this year with 60,200 points. Pete, K9PW, came in 2nd with a mixture of roving in Minnesota and along Lake Michigan. Ron, K6GZA, repeated this year in 3rd place. The rest of the Top Ten were all in either the first or sixth call-areas. All of the 21 participants in this category were active on 24 GHz. Only one entrant reported Light contacts, making contacts over a distance of 4 km.

Regional Highlights

The first call area had the most submitted logs with 21. Many of the traditional Appalachian mountaintop and coastal locations were activated. Regulars activated places like Block Island, RI and Martha's Vineyard for coastal locations. Notice the familiar names for often activated mountaintops: Mt Mansfield, Mt Equinox, Mt Washington, Mt Wachusett, Mt Greylock, Hogback Mtn, Mt Kearsarge, and Camelback (PA).

Many 1-landers only activate one to four locations on a weekend. This gives them the time to reach out to Pennsylvania, Maine, Quebec, and down the coast to Delaware, Virginia, and beyond.



Chip, W1AIM, stays relaxed on Block Island, RI FN41ee. This location has been one end of many QSOs—particularly ones over 600 km. (Photo W1GHZ)

In the West and Southwest, adventures are mostly on mountaintops. Kevin, AD7OI, spent the August weekend with KA6SPD and others on Cunningham Mountain in Arizona. For the September weekend, he traveled to be with several California operators atop Mt Frazier. More pictures of Kevin's two weekends are visible on his website at www.ad7oi.com. The views from atop mountains are striking—and windy. Kevin tells how rain scatter impacted a 200+ km contact with a rover. "We all made our contacts on SSB (just barely) and I suggested we switch to FM. There was reluctance to try such a long FM path through rain, but the results were astounding. The conversation was local UHF repeater quality with a few minor scratchy noises once in a while. I had heard that FM was the way to go on rain bounce or through rain fades. This is definitely the case!"



Alf, NU8I, joined AD7OI and KA6SPD on Cunningham Mountain DM23tn in August. Here, at sunset, Alf looks for incredibly weak signals on his SDR. (Photo AD7OI)



Brian, AF6NA, operating near Long Beach, CA at DM03wt. From this spot, Brian completed with Rex, KK6MK, 623 km north on Mt Vaca. (Photo AF6NA)

The gang on Mt Frazier had quite a challenge on Sunday of the September weekend. Overnight, wind, rain and ice hit their mountain. The ice accumulated on the big microwave towers that live permanently on the mountaintop. As the weather cleared and the day warmed on Sunday, the falling ice off the tower was incredible—but the relentless wind helped keep the ice near the tower. You can see more pictures and video of the activity on Mt Frazier by visiting Rex, KK6MK's webpage at www.xertech.net/10G13/10G2013.html.



Ben, K4QF, climbed this fire tower at EM65wc four times to get his equipment up and back down. The view was worth it. (Photo K4QF)

In the fourth call area, Ben, K4QF, set-up in a fire tower in south-central Tennessee. He found activity to be light but was successful working W4WSR, W4ZRZ, and W4FIG in the 150 to 200 km range. The fire tower provides outstanding views, in many directions—particularly Illinois and Indiana--if only there were more stations with which to make an attempt. Ben made a point on this weekend to activate five different grids to help Chris, W4FIG, earn her VUCC on 10 GHz. Ben got a workout that weekend as he used a couple of fire towers for operating. Each location required four trips up the tower! Also in 4-land, Florida had several operators throwing microwaves around—difficult because of the flatness and the foliage.



Courtney, N5BF, operating on the beach DM13ia in southern California. (Photo AF6NA)

For the September weekend, Brian, AF6NA, reports he roved southern California with two new operators: Courtney, N5BF, and Frank, AG6QV. They worked from San Diego to Santa Barbara activating many locations. A real highlight for Brian was working 623 km from the Long Beach area to Mt Vaca northeast of San Francisco with the San Gabriel Mountains directly in the way. Once his signals topped the San Gabriel's, they traveled unobstructed up the inland valley of California.



Bob, WA5YWC, hails from Plano, TX. He traveled all the way to Chicago for the August weekend. Here he checks out the Lake Michigan shore near Kenosha, WI EN62cn. (Photo WA5YWC)

The fifth call area had light activity this year and most of it was on the September weekend. Two active 5-land microwave operators found themselves, for differing reasons, in the Chicago area for the August weekend. Al, W5LUA, and Bob, WA5YWC, tried out several lakeshore and inland locations to work other stations throughout the region. Shots up Lake Michigan landed with Bob, K2YAZ, and Neil, W9NU. Overland shots to Don, WW8M, in southern Michigan as well

as Ron, KOØZ and Herbert, AF4JF, down near St Louis were rewarding. Bob reports he had fun and fair activity contacting 14 other stations. But he also travelled 2000 miles to make it happen. Where will he go next year? You can read his travelogue at [w9fz.com/ham/2013wa5ywc10 GHz.pdf](http://w9fz.com/ham/2013wa5ywc10%20GHz.pdf).



Jon, WØZQ, shows off his “handheld”. He’s worked across hundreds of kilometers off of rain scatter from within his car with the rig on the dashboard shooting through the windshield. (Photo W9FZ)

For August in zero-land, Bill, KØAWU, and Jim, KØMHC, roved in the Red River Valley which runs along the North Dakota-Minnesota border. From there, they made multiple contacts with Dennis, NTØV, Wally WØPHD, Barry, VE4MA, (in Winnipeg) and two other rovers operating near Winnipeg. Also in August, twelve operators populated Buck Hill on the south side of Minneapolis while a rover-pack of about six operators travelled to southwestern Minnesota quite near the South Dakota border. Many contacts ensued with morning and evening conditions being incredible. A “mid-day lull” was noted again this year. For September, Buck Hill again had a contingent of eight operators and a rover-pack of three roved northeastern Iowa and a rover duo activated spots in southwest Wisconsin. Conditions were average to poor on the September weekend.



August found several ops atop Buck Hill EN34ir which is on the south side of Minneapolis-St Paul. Views were good in many directions and contacts generally easy towards the rover-pack in southwest Minnesota 200 km distant. (Photo W9FZ)

In the Great Lakes area, 8-landers and many VE3’s spent the August weekend on the shores of Lake Erie and Lake Ontario. For September, most of the Michigan operators again convened at Bob, K2YAZ’s in EN74 to operate on the Lake Michigan shoreline. Most of their contacts crossed the lake to Zack, W9SZ, Pete, K9PW, and a few others. Saturday was hampered by rain but things improved for Sunday. K2YAZ’s

hospitality is legendary. The Michigan ops take the time to work new bands and new paths. Several extended their personal 24 GHz distance records.



Ron KOØZ, spent some time at Ohlman Cemetery EM59ji. Here, he’s beaming southwesterly to St Louis and beyond. Map research shows that many cemeteries are on hilltops or at least higher ground. (Photo KOØZ)

Near St Louis, activity is on the upswing. This year, the August weekend had the most activity with at least five operators on the air. Ron, KOØZ, found several spots east of St Louis in the farm fields of Illinois that gave him good shots in several directions. The highlight was working up to the Chicago area at near 200 km on Sunday.



Yet another view from Cunningham Mountain DM23tn. They don’t have to worry about soybeans versus corn here! (Photo AD7OI)

Three-landers were again active both weekends. The September weekend brought the challenge of rain, but the same rain that challenges can also enhance signals. The best situation is when the rain is between the two stations trying to make contact. The rain cleared and Joe, WA3PTV, completed a 650 km contact with AF1T who was on Martha’s Vineyard at the time.



Joe, WA3PTV, at FM19aw works AF1T 650 km away. The rain finally cleared away but it remained chilly—note his gloves. (Photo WA3RJQ)

In Canada, there was activity in Manitoba, Ontario, and Quebec. The VE4s worked southward down the Red River Valley into North Dakota and Minnesota. The VE3s worked across Lakes Erie and Ontario to stations in Ohio, New York, and Pennsylvania—both on the shore and well inland. In Quebec, Pierre, VE2PIJ, and Jimmy, VE2JWH, activated a scenic overlook west of Montreal at FN25xm. They had great views in many directions but need more operators to work in those directions. They worked many stations in NH, VT, and MA. You can see more pictures from their operation at www.qsl.net/v/ve2pij/fn25xm.



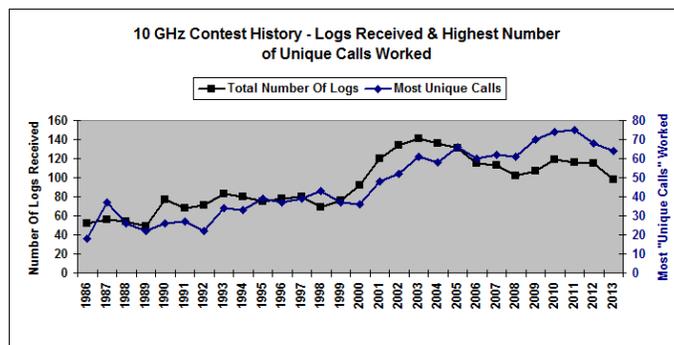
Pierre, VE2PIJ, and Jimmy, VE2JWH, on a high spot west of Montreal FN25xm beaming south. (Photo VE2PIJ)

Analysis

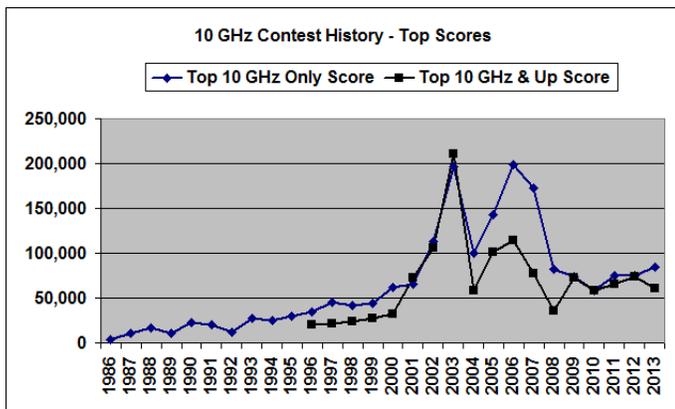
For those of you who like to analyze participation and distances over time, it is interesting to look for causes such as weather or organizational efforts by clubs. These charts were originally created by WØZQ and I thank him for them.

Indicators on participation are mixed. “Logs received” is trending down with a sharp drop from 115 last year to 98 this year. Yet, unique callsigns worked remains strong at 64. In some ways, our recruiting efforts are working getting new operators on the air. First-time logs (for 2002 onward) were received from: AA1I, KK6EME, KW2T, N5BF, N5WCO, NU8I, VA3TO, VE3EG, W6OAL, W6QWN, WAØCNS, and WA3RGQ. Hopefully each of them had fun and will make a point to be active in 2014.

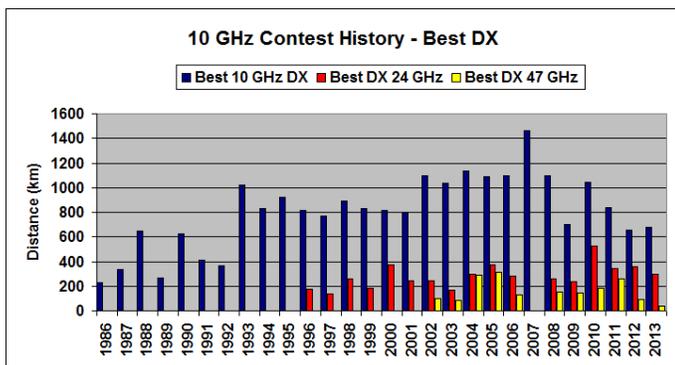
This improvement is offset by experienced operators either not getting on-the-air (or not sending in a log). Microwave contesting is not easy. Each year, conquering the logistic and energy challenges to get on-the-air for one or even two weekends can lead to burnout—particularly when August and September offer the UHF Contest, September VHF contest, and EME contests. I want to commend operators who avoid burnout and get on-the-air every year. Reliable participants for 11 years since 2002 are: K2YAZ, KB8VAO, KC6UQH, VE3NPB, VE3SMA, W1MKY, W3HMS, WA6YQR, and WA8VPD. Even more notable, the following submitted logs in all 12 years of 2002-2013: WB8TGY, WBØLJC, WA2VOI, W6OYJ, W1GHZ, W1FKF, N9RIN, N6RMJ, NØUK, KA1OJ, and AF1T. Good show! May all of you get on the air and submit a log in 2014!



The trend for Top Score ticks up slightly for the 10 GHz Only category and shows a slight down-tick for the 10 GHz and Above category. Another metric that showed a concerning drop from last year is the total number of QSOs represented in the submitted logs. The recent trend has been in the mid 9000s and this year came in at 7923. Submitted logs indicate the known activity. Certainly there are operators who get on but do not submit logs. I read activity reports from around the nation and most reported that activity levels were average to slightly below average.



Looking at Best DX graphed, over the years, can show the effect of an unusual propagation event or the variability of activity levels on the 24 GHz and above bands. In the past five years, good tropo or rain scatter opportunities led to the two longer 10 GHz DX distances. While 676 km is a real accomplishment, this year conditions didn't grant spectacular enhancement as in some years. The decline in 47 GHz DX this year was more an indicator of activity since only two submitted logs showed 47 GHz activity. Obviously, the more activity, the more we can explore the limits of what is possible. I know operators in several parts of the country hope to take their first steps on 24 GHz and 47 GHz next year. Even if the contacts are only a few kilometers distant, it's a start.



Top 10 Scores

10 GHz Only	Score	10 GHz and Up	Score
WBØLJC	84,754	AA6IW	60,200
KD6W	68,603	K9PW	54,746
W6YLZ	59,288	K6GZA	45,651
KØCQ	58,119	AF1T	36,319
KCØP	45,817	W1MKY	34,535
N6RMJ	44,945	W6QIW	33,015
WØJT	44,924	N9RIN	28,335
NØKP	44,884	N1JEZ	27,128
WØZQ	44,884	W1GHZ	25,838
NØUK	42,989	KA1OJ	25,169

Version 1.1 includes the score of KD6W that was inadvertently overlooked and omitted from the original results.

Top 10 QSOs

10 GHz Only	QSOs	10 GHz and Up	QSOs
WBØLJC	372	K9PW	298
KØCQ	248	AA6IW	232
W6YLZ	231	K6GZA	178
N6RMJ	207	AF1T	148
KCØP	200	N9RIN	144
NØKP	195	W1MKY	144
WØZQ	195	W6QIW	139
WØJT	191	KA1OJ	131
KE6HPZ	184	W1JHR	101
W9FZ	183	W1GHZ	97

Participation by Call Area

Call Area	Call Entries	Area	Entries
1	21	3	7
6	19	5	4
Ø	16	7	3
VE	9	4	3
8	8	2	1
9	7	DX	0

Change for the better?

The 10 GHz and Above Contest has static rules and format for many years now. The contest is unique in that it employs distance-based scoring. It was designed that way as an appropriate way to reward or scale contact difficulty. The "and Above" portion of the contest began in 1996 recognizing all bands above 10 GHz up to and including Light.

Microwave contesters discuss how things are and how they could be better. Certainly, that which is not broken should not be fixed. The biggest issues are how to motivate more 24 GHz, 47 GHz and "up" activity and whether there is a way or need to include 5.7 GHz in our event as it is a "dish" band. The 10 GHz and Above Contest is not immune from category jumping. That is where an operator makes almost all of his contacts on 10 GHz and makes a single "and up" contact to jump to the "and up" category. This is not a big issue, but can we make things better?

Members of the Florida Weak Signal Society thought about these issues and came up with two specific changes they would like to see in this event. Initially, they shared their thoughts with other attendees at the spring 2013 Southeast VHF Society Conference. The intent was to prompt discussion and thought. (By the time you read this, you should be able to find the original document on the Florida Weak Signal Society webpage, flwss.net.) The conversation continued in the hospitality suites at the Central States VHF Society conference in late July and Microwave Update in October. Conversation and thought continues on regional microwave email reflectors.

Join the conversation and it need not be limited to the two specific changes proposed by the Florida Weak Signal Society. There is no consensus for change—yet. Continued dialogue may end with no initiative for change—but it might. Individual operators and weak-signal organizations in other

parts of the country will hopefully join the conversation because their ideas and voices are needed.

We no longer have a VHF/UHF Advisory Council as an avenue for careful change in our event. Any initiative will have to pass through an ARRL Division Director. But first there is much more nation-wide dialogue needed to carefully consider benefits, negatives, and even unintended consequences. Talk about our event—its format and rules. Are there rewordings that would improve understanding and readability? Are there changes that would improve the event and the hobby by motivating desired behaviors such as longer contacts or more activity on higher bands? What are desired behaviors, in your view, and how should they be rewarded?

This sidebar is meant to get you thinking about how to make things better. No train has left the station. I have much fun each year participating on both weekends of our event. I will again in future years even if we make no changes. Creating individual band entries thereby eliminating the “and up” category and including 5.7 GHz are the two ideas put forward by the Florida Weak Signal Society. Those and other ideas like increasing reward for pushing distance limits and increasing rewards for “and up” bands are worth considering.

Looking Ahead

Those who microwave contest know it is fun—mostly for conquering challenges. Most would agree that making more contacts leads to more fun. Activity begets activity. I challenge all microwave operators to get on-the-air for the 2014 event and, more importantly, share the fun by bringing along a new operator. If you’ve been doing the same thing — same mountain-top or same seashore—for the past few years, I encourage you to try new things or new locations. Start making plans to be on-the-air August 16-17, 2014 and September 20-21, 2014. Be sure to check out an expanded web-only report at www.arrl.org/contests—look for the 2013 10 GHz and Up listing.