

Rover Redux 2013

The Evolution of a VHF Subculture

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Disclaimer: The information contained in this paper is based on articles in QST, web sites, interviews and recollections of VHF contesting participants and may have some inaccuracies.

VHF Contesting has been with us for decades. Over time, and when the sunspot cycle was not providing those great 6 meter E_s openings, someone had a good idea to increase their multipliers by having stations operate in areas that were under-populated by VHF operators. Two of the forces behind this included the Motorola Radio Club in Massachusetts and the Mount Greylock Expeditionary Force, W2SZ. Even before the Rover class was established, they had stations travel to ARRL sections (in pre-grid multiplier days) or grids that were rarely heard.

In June 1991, Rover and Multi-Limited categories were developed after a series of articles in the NCJ galvanized popular support for the creation of these new categories¹. The rules were published in May '91 QST and listed the Rover class as one or two operators of a single station that moves along 2 or more grid squares during the course of a contest. "All Rovers are encouraged to adopt operating practices that allow as many stations as possible to contact them." Rover scoring was unique and their score was calculated using "the total number of QSO points from all bands times the number of multipliers from all grid squares in which they operated." There would be a plaque award for the top scoring rover and a certificate for the top rover in each ARRL Division where significant effort or competition was evident. Billy Lunt KR1R ARRL Contest Manager and Warren Stankiewicz NF1J Assistant Contest Manager wrote the QST article and stated, "One of our goals in administering the VHF QSO parties and VHF Sweepstakes is to make them interesting and enjoyable so that participation will remain high. This requires periodic adjustments, as technology and times change. This year we added two categories to the ARRL June VHF QSO Party: Rover and Limited Multioperator. Good intentions are one thing, but the proof is in the pudding. Both categories proved extremely popular....Roving too suits participants—Rovers and non-Rovers alike." Dean, WA0TKJ/R, was the top rover scorer with 263,725 points on the basis of 473 contacts and 385 multipliers. He had been a rover long before this class was added to the ARRL activities. There were 50 Rover entries published in the QST results, with WA3UGP and KC1EB using 10 bands each.

In the September VHF QSO Party in 1991 there were 29 Rover logs submitted. By January 1992, there were now 79 Rover entries with many scoring more than 150,000 points under this quite liberal multiplier system. In the June 1992 report there were 66 Rover logs, and two teams of operators in the Central Division covered 14 and 15 grids each. The scores appear to correlate with both the number of bands operated and the number of grids covered. (That year, I was operating with the Providence Radio Association as a multi-op station from Block Island.) The September VHF QSO party now had 46 Rover entries.

Fred, N1DPM, and Stan, KA1ZE, were driving to a regional VHF Conference together and they discussed the rules and scoring for rovers on their trip. They realized that with the option of having two rovers, well equipped with several bands. They could count unique grid multipliers each time they changed grid locations, and between the two vehicles could amass a mighty score. On top of that plan, each of the vehicles would have a father-and-son licensed operator team, and the family rule would apply, allowing each contact to be doubled by passing the mike or key to the other family member. Stan called the League headquarters to ask about the

legitimacy of this activity and the response was, "Nobody is going to do that." There was a winter storm that battered the Northeast and many fixed stations had problems with their antennas, including Stan. So he went about assembling a 9 band station (50MHz-10GHz minus 5GHz). The antennas were assembled on roof racks made of 2X4 frames and they also used simple coffee can antennas for the microwaves. The two rovers each went to two 4-corner grid intersections and did the rover dance around the grid corners. Although this would seem to be a simple thing to do, it is a bit tricky to do in the Northeast corridor due to the topography. The younger boys had a great time with this, trying to speak as quickly as they could to speed up the point collecting process. The scores were 1,277,860 for KA1QAS, 1,269,637 for K1CPJ, 1,252,440 for NR1L and 1,250,640 for KA1ZE. Each of them had over 900 QSOs and over 360 grid multipliers. Although the bulk of their contacts were between the two family station rovers, they did manage to work many other members of their Hampden County Radio Club. On occasion during their runs with each other they were interrupted by another station trying to call them. They sometimes had to ignore that call in order to complete their runs and continue their rhythm. All told there were 110 Rover entries in that contest. Roving was clearly gaining popularity and the scores were continuing to climb. The write-up in QST said the following, "In this year's VHF SS results, the big story is the success of several rover teams and the effects their scores had on the club aggregates. A four station group consisting of two father-and-son teams, KA1ZE and NR1L and K1CPJ and KA1QAS, respectively, *ran away* with the top four rover spots and provided a huge boost to the Hampden County RA's aggregate score...Although their ingenuity led these four operators to new scoring levels, there's controversy in the VHF/UHF contest community as to whether the rules should be changed to discourage this kind of rover operation in the future." The actual club aggregate score for the Hampden County club was 6,189,502 points, with the Rochester VHF Group scoring 2,568,944. Both topped the scores of the Packrats that year, who with their 57 entries had an aggregate of 2,056,420. This also marked the first time that there were four entries in the Unlimited Club class, needing 50 or more log entries. There was then a request for feedback to the Contest Branch, followed by commentary on the value of roving, especially with use of the microwave bands, as the Rochester VHF Group pulled past the Mt. Airy VHF RC. This was the first time since 1961 that the Mount Airy VHF RC was not the top winner in the VHF SS club competition. The write-up went on to say that adding a rover to your club counts double, with points for both the fixed and rover station. There was also the warning to be sure that the 175 mile radius was heeded. Paul, KF9EY had his article, "Roving for VHF Gold in the Colorado Rockies" published in the same edition of QST that had the January results. Articles such as this as well as the soapbox feedback were encouraging to other rovers and gave a reality check of what it was like to be on the road in the wilderness, in the scrutiny of park rangers and law enforcement officers as well as curious visitors. It also reflected the changing and often unexpected weather conditions on mountaintops and other unique geographies.

The June 1993 Rover category rules introduced another regulation that prohibited stations from combining their fixed and rover station points as a single entry. This also clarified the ability of a station to operate both a fixed and a rover station during the contests. This is an opportunity that is used by a few hams that have both a fixed station and another set of radios that can be used in the rover. Remember that you cannot use the same radios and antennas under two different calls during the contest, except for the family station rule.

By January of 1995, the Rover rules again were modified. This time there was a prohibition of the use of the family rule, and only one call could be used from a rover. They also changed the scoring so that a rover would submit separate scores for each grid square of operation and the final score would be the sum of the scores from each grid. No more aggregate multiplier. This change in scoring was a huge disappointment for many of the rovers who were so keen to see scores in the 6-digit ranges. Some vowed never to rove again. But the rules were the same for all rovers. It would however change some of the strategy and tactics of various rovers, depending on which parts of the country they were operating. This substantial change in the scoring system also kept club scores from being astronomically inflated with the addition of a few grid-circling rover scores. There were 70 rovers that submitted logs for the January VHF SS. The highest rover score submitted by WA2MOP under the new scoring system was a mere 81,000 points. Again the Rochester VHF group won the

Unlimited Club competition, but the Packrats won the Medium Club category as they only had 46 log entries. In the June contest the highest rover score was 21,000 points by ND3F. Wayne, N6NB, entered a rover log with a score of less than 10 points. In the September contest, AA7VT turned in a 39,500 point score. This is also the first contest where I operated as a rover in the RI and MA grids, submitting a score of a few thousand points.

In the November 1995 QST, another set of rules changes for Rovers was announced based on a poll of rovers and other VHF operators and this was approved by both the ARRL Contest and the Awards committees. The new rules would take effect starting in January, 1996. The objectives of the rules were to be simple to calculate scores, fair to all, progressive scoring over the course of the contest and discourage "grid circling." The following QST issue had a one-page invitation to the January VHF SS and a boxed synopsis of the new rover scoring rules that added all the QSO points and multiplied them by all of the grids worked during the contest, regardless of which grid they were made from, and also added one additional multiplier for each grid in which the rover made QSOs.

Glen, KB1GW, had an article published in the January 1996 QST (p59) entitled, "It's Time to Explore VHF/UHF Contesting." In that article he pointed out that rovers are "contesters who pack their vehicles full of radios and operate from more than one grid square, and especially the rare grids for the benefit of other operators."

In the January VHF 1996 SS, there were over 70 rover entries, and Brian, ND3F, covered 16 grids and scored 126K points on the basis of 556 QSOs and 115 grid multipliers. Wayne, N6NB, also submitted a log now with 47K points. The rover scoring seemed reasonable, and there was a bonus multiplier for crossing into a new grid and making even 1 QSO. Brian's comment was, "my plan to operate from 16 grids was flawed because I didn't 'work the bands dry' from each site." The average of the top ten rover scores was 47K. Clearly the rules had proven to give a boost to the class with a reasonable scoring scheme. By June, even with the reduced point values per QSO, the top ten rover scores averaged 66K. The top rover, Brian, ND3F had a 96K score. I managed to submit a 54K rover score. Once an amateur had attempted a rove, if the activity and the results were rewarding, it encouraged further effort. Add more bands, increase the power output, get bigger antennas and be able to raise them higher. Publish your rover route. Add another driver or operator to reduce fatigue and speed band passing while still keeping the running bands open.

The January '97 VHF SS continued to see large numbers of rovers despite problematic weather conditions. Billy Lunt, KR1R, the ARRL Contest Manager then wrote in QST, "Rovers are another entity that contributes to the overall fun of the contest...With the lack of enhanced band conditions when nearby grid square multipliers are hard to come by, rovers offer us those much appreciated grid square multipliers, especially on the microwave bands...Hats off to the rovers! Their presence and efforts don't go unrecognized." Jack, AB4CR, was the top scoring rover with 143K. One remarkable feat by a rover was KB6JVV, the daughter of John Kitchens, NS6X, who roved in 5 grids and used 16 bands including the letters from A to P except M. This was accomplished between the father and daughter team by use of 5' dishes and a special signal generators and frequency counters for bands above 24GHz in the Los Angeles area hill tops. John remained as the fixed station, and the story is reported as a sidebar in the June 1997 issue of QST (p106).

The June '97 VHF QSO Party rules reiterated the restriction of the rover being used as a family station under two different call signs. This will be of interest as the application of this prohibition seemed to fade in a few more years. AB4CR/R with N4GN was top rover with 214K, passing through 14 grids with 11 bands, but seemingly tracked by K4EFD/R who had a similar band complement and the same 14 grid rove.

The January '98 VHF SS rule 2.3.2 stated, "A rover may not operate with more than one call sign." There was no further verbiage regarding the application of the family station rule. When the '98 June VHF QSO Party rules were published, there was a change in numbering of the rules and there was no explicit statement regarding the use of only 1 call by a rover station. The January '98 VHF SS was remarkable for a new Rover record of 21 grids in operation, surpassing the record of 20 grids set earlier by N0LRJ/R. The team of Tim,

KX7C, and Ward, WB7VVD, scored 107K on that outing, making 674 contacts with 114 multipliers using bands ABCDE. The June results again showed AB4CR/R +KF4TUK as the top rover score with 255K and 12 grids roved. N4STK also had a 13 grid rove with the same 11 bands. What were their tactics?

In January 1999, there was a new rover scoring record set under the new scoring rules. Operating under the call of N3IQ/R, operators Brian, ND3F and Terry, WD8ISK (later K8ISK and then W8ZN), posted a score of 1,391,942. They used 12 bands and had a tandem rover, K8GP/R operated by Owen K6LEW (now K3CB) and Joel KA3QPG (now W3RFC), who posted a score of 827,372 points. N3IQ/R activated 14 grid squares; K8GP/R activated 12 grids. They usually worked each other on 11 bands--and then set out to work everyone else they could hear or raise in the VHF station dense northeast corridor. W3ZZ reviewed the log afterward and noted that the team worked 35 different stations at least 20 times in the contest. N3IQ also had a 4 laser QSOs for a 12th band. The N3IQ/R station towed a generator that powered KWs on the lower 4 bands, with short antennas rotatable while driving. Brian did most of the operating; Terry did most of the driving. A big challenge for the operator was sitting backwards (facing the back of the van) for long periods of time. They lost their microwave preamps at one of the first sites in New England, probably from operating too close together, possibly limiting the score somewhat! There was a "random" breakfast meeting of several rovers on Sunday morning. W3IKE/WA0QII/R (SK), N3KTV/R, W3EKT/R, along with Brian, Terry, Joel and Owen and others -- about 10 rover operators all together ---met near the FM18/FM19/FM28/FM29 grid corner. They enjoyed coffee and doughnuts, and worked each other a few times, too. Brian described it as really fun--despite having to repair the generator on the fly, getting rain into the 222 KW tube amp (big pops while driving on I-287!), getting rear-ended by a drunk driver in Delaware, and almost falling asleep at the switch on Sunday night. They actually quit about 10pm due to fatigue.

The June '99 VHF QSO Party continued to demonstrate increasing rover activity and higher scores. From the numbers of contacts, grids operated and bands used, it appears that many of the highest scoring rovers continued to do some grid circling or partner-roving with a similarly equipped rover.

The January 2000 VHF SS rolled around and my son Leon, N1XKT, was now living back home with us in Pennsylvania, where we had moved in 1997. I wrote to Dan Henderson, N1ND, the ARRL Contest Manager, and asked if the rover could be considered a family station. He answered that it could, and there did not appear to be any specific current prohibition in the published rules at that time. Currently the following information is on the ARRL website for the contest rules for VHF:

2.5.1. A rover vehicle may transport only one station using a single call sign. An exception is provided for in "General Rules for All ARRL Contests" number 3.5 (Family Rule). 3.5. A transmitter used to contact one or more stations may not be subsequently used under any other call during the contest period, except for family stations where more than one call has been issued, and then only if the second call sign is used by a different operator. (The intent of this rule is to accommodate family members who must share a rig and to prohibit manufactured or artificial contacts.)

Since that time there have been many family rovers, including a three generation rover of David All, N3XUD, his daughter Angel, KB3STA, and Bill All, N3KKM, now a Silent Key. In 2000, Leon and I both went out in the aging station wagon, with bands A through I and P, minus 5GHz. We roved in 2 local grids, using the stop-and-shoot method and had fun garnering 9K and 8K respectively. Leon had more QSOs and grids as he was able to operate using the whip mag-mounts while I drove. Our picture appeared in the QST write-up, and I sure remember how cold it was doing a stop-and-shoot operation in January. I vowed that I would design a rover that would not require going out of the vehicle for more than a few short minutes.

There was also a developing body of knowledge about roving and much was being shared at regional VHF conferences, over the internet, and in various publications. From a review of the QST rover listings in the VHF contests, there are some perennial rovers, like Russ, VE3OIL and his partner Murray, VE3NPB (20+ yrs), and

then others who shined brightly for several years and then went on to other phases of VHF. By 2001 the number of rovers represented in the contest was stabilized between 60-100, depending on the season and weather. This would be the year that Bill Seabreeze, W3IY (SK), shows up in the Rover category and operated together with Brian, ND3F, in June, covering 12 grids and coming in first place. In the September contest we also see Christophe, ON4CFX/W4, operating as a rover. I remember contacting him and being very excited to hear that unusual call, and even more excited to have a new grid, FM09 in my log. Christophe would later change his call to ON4IY and become a regular roving partner with Bill, W3IY. When Bill passed on and his rover, "The Intergalactic Jitney," was sold to John, W1RT, Christophe would partner with John for roving.

Hams were adding names to their rover vehicles. The "Red Rover" showed up at several southern ham fests. The "Psycho Rover" from N2JMH made a great YouTube video: <http://www.youtube.com/watch?v=YwngvV-tilw>. I dubbed my recently purchased used 1994 Ford van "The Great White." Scores of the top rover entries were in the 100-300K range. Fixed stations were happy to track the progress of the rovers and try to work them in as many grids as possible, especially if they had the high-point bands of the microwaves. Many of the rover stations were adding microwave bands as this improved not only their score, but their popularity among the bigger multiband operators. There were also mini-rover conventions during a contest, when several rovers would converge on one particular popular high location, and then a flurry of contacts would take place, each rover benefitting from a significant number of contacts, especially on the higher point bands. Brian, ND3F, bought an ambulance that had been taken out of service and converted it for roving with a crank-up tilt-over tower. He spent considerable time removing the ambulance red and blinking lighting to make the vehicle road-ready. Sadly the vehicle did not last more than a few outings. There were discussions on the internet contest reflectors regarding the best rover antennas and schemes for stacking. Ideas were shared regarding the most efficient ways to maximize operating time, minimize driving and set-up times. Mark Herson, N2MH, "The Lighthouse Rover," published a web site <http://www.n2mh.net/rovesite.htm> that identified useful rover operating locations. The site links to several mapping programs that shows the grid, latitude and longitude, roads, topography, and satellite views. There were also user notes along with the compass headings to some of the larger fixed stations. I personally make significant use of this website in addition to compiling the routes and roving locations used by many others. This has been an outstanding resource, and also includes the N2MH rover routes up through 2007.

Ev, W2EV, suggested the use of APRS for the rovers, however this was considered a "self-spotting" tactic. It proved to be not acceptable to the contest rules, as noted in the VHF and Up column written by Gene Zimmerman, W3ZZ (SK), in his column in the January 2003 QST. "APRS in ARRL VHF/UHF/SHF Events: There still appears to be some confusion about the legality of using APRS to track stations in ARRL VHF/UHF/SHF operating events. This in spite of what I thought were clear statements from ARRL Contest Branch Manager Dan Henderson, N1ND, on various VHF oriented Internet reflectors. For the record, Dan says, 'The purpose of APRS is to announce report and track a station's location. The use of APRS during an ARRL contest is considered self-spotting which is a violation of Rule 3.14 of the General Rules for all ARRL Contests, which reads: "In contests where spotting nets are permissible, spotting your own station or requesting another station to spot you is not permitted." ' So the use of APRS as a tracking aid is not legal for any class of operation, single-op, multi-op or whatever." This rule would also be modified in the future.

In 2002, there were no longer complete listings of the results of the entries in QST. The top scoring stations were listed by category and the rest of the results were posted on the ARRL website. This raised a ruckus with the contesting community. Everyone liked to see their call listed in the results or soapbox. But the ARRL and the QST publication needed to become more cost efficient, and the contest results listings were sacrificed. For a few years after, there continued to be rumblings. Now in 2013, we have accepted the fact and are able to make use of the on-line archives, sortable contest results and contest records on the ARRL website. During the year, Wayne, N6NB, made a trip east and purchased a 4x4 vehicle and outfitted it with a few radios. He came to Camelback Mountain during a contest while I was operating and watched as I operated my rover,

making QSOs on bands through 10GHz and LASER. I gave him a spare LASER communicator and together we made a few QSOs as we traveled through FN21, FN11 and FN10. Another time he set himself up in FN20 at the Alamuchy site off Rte 80 with a newly purchased 5GHz transverter from DEMI and made a QSO with me while I was on Camelback. He was shocked that the signals were 20+ dB/S9! I made a video recording from my end and he later drove up to see it and was amazed at the quality of the signals on that band—it was about a 40 mile line-of-sight contact. He was further stimulated to enhance his rover capabilities.

In 2003 we had some unique developments. The top January rover score was by N2JMH/R with 525K points! He was followed by K2TER/R with 473K. The average score of the top ten rovers in this event was 272K, likely due to the combination of grid circling, pack roving and a nice 3 hour 6m Es opening. The Rochester VHF group was the top club in the Medium category with 3.3 million points and 44 log entries. This was accomplished with two large multi-op scores and five big rover scores in addition to their other 37 entries. Wayne, N6NB/R, returned in January of 2003 with a Ford E350 Supervan to further test his roving skills. He traveled over 6,500 miles round-trip to make this pilgrimage, back to the heart of East Coast density of VHF ham operation. It was also a sentimental journey--N6NB/1 on Mt. Equinox, VT, set national scoring records in the June and September VHF contests as a single operator in 1979-1980 with his cab-over kilowatt mobile station.

In the April 2003 issue of QST (p86-88), Gene, W3ZZ, published an article entitled, "VHF Contests Reexamined: Changes in the Wind." He expressed his thoughts concerning the gradual reduction of the number of submitted logs from 1993-2002 in almost all of the VHF and up ARRL events (10GHz saw an increase) and the gradual decline of the top and average scores from 1997-2002. These issues were brought to the Member Services Committee and the ARRL Board. Gene could not point to any clear reason for the changes. He was concerned that despite an increase in Rovers and their ability to make multiple contacts with the same stations and the wider availability of radios capable on at least bands AB&D that there was some sort of ennui affecting the ham participation. He set out several points for consideration including this regarding rovers, "*Return to the original rover scoring rules*—One very promising development over the last decade is the appearance of rovers who travel from grid to grid. Changes were made in the original rover rules to fix a problem in club competition. The present rules, for strategic reasons, strongly inhibit rovers from visiting rare squares particularly if they are isolated and in odd directions from population centers. One obvious solution is to return to the original rover scoring rules, but do not allow rovers to submit scores for clubs, so their scores will not distort club competition. If a club is a real VHF club and has many active members, each one of their scores will benefit immensely from the operation of even a single rover in club territory. Thus, the rover is a benefit to a club but is permitted to travel freely from grid to grid without being constrained by the scoring rules."

The 2003 June VHF QSO Party was hopping with 93 rover logs submitted. Bill, W3IY/R with his roving partner Christophe, now ON4IY, roved many coastal and Shenandoah mountain grids to amass 270K points. Brian "The Rover" ND3F/R also had a great activity, but was unable to submit a complete log as he had one disastrous computer glitch. On the West Coast, N6TEB/R (KG6EPM opr) was in second place with 230K points, and in 6th place was Wayne, N6NB/R with 116K. By September, Wayne was putting together more multiband rovers and he turned in a score of 360K to top the list. Six of the top ten rover scores were posted from California. Bill's W3IY/R jitney managed only 3rd place despite a 306K score.

The 2004 January VHF SS showed Wayne N6NB/R making his way up the score list, with three rover stations that he engineered, each breaking the 1 million point mark and taking the top three spots. Wayne's score of 1.097 million fell short of Brian's mark of 1.39 million, and that would be the next target for the Southern California Contest team. With the rovers travelling together doing both pack-roving and grid-circling at relatively close range, there is not a great need to for high power or large antennas. Attention needs to be paid to the remote switching of the IF rig to the transverter. The project eventually multiplied into 12 such rover stations,

including the addition of 24GHz to some. The full story and pictures of these rovers is posted at:
<http://commfaculty.fullerton.edu/woverbeck/rover.htm>

In the May 2004 QST (p84-85) column on 50 MHz and Up, Gene, W3ZZ, wrote about the decline in the number of logs submitted for the VHF contests and various ideas that might promote greater participation and log submission. He again decried the practices of grid circling by rovers and the captive rover exploits. The possibility of a return to the original rover scoring rules was suggested, with rover-to-rover contacts within the same or adjacent grids limited to 1 point each, or the practice of grid-circling banned. At the same time in the May 2004 NCJ (p28), Wayne, N6NB, wrote "Roving in VHF Contests: How to Score Three Million Points--And Why."

The June 2004 VHF QSO Party again showed the California team of three rovers in the win, place and show spots with between 1.292 and 1.131 million points each by roving through 20 grid squares in West Texas, Oklahoma, Kansas and Nebraska. Continued suggestions and feedback on the scoring, rules and participation encouragement were made by contesters as well as the various ARRL committee members. In the September VHF QSO Party the W3IY/R team of Bill and Christophe made their mark with 382K points, and had no competition from the California rovers.

The January 2005 VHF SS saw the California rover team setting another record with a rove through 22 grids in West Texas and New Mexico. The three teams scored between 2.202 and 2.153 million points each by pack-roving and grid circling. The June VHF QSO Party had Dave, N6TEB/R, as the overall winner, with Bill and Christophe operating W3IY/R in second place. This would be Bill's last rove as he became a Silent Key at the end of the summer. His legacy is marked with his web-site maintained as a resource page for rovers by John, W1RT/R at: <http://www.w1rt.us/w3iy/index.html> The "Rover Recognition Award" was also established in his memory by the Mt. Airy VHF Radio Club. This award has been given annually since 2006 to a rover station that demonstrates particular excellence throughout the year. Consideration is given to the effort, regularity of operation, bands operated, grids covered, and contribution to the VHF community, unique factors and operating characteristics. The September VHF QSO Party that year had Russ VE3OIL/R and Murray, VE3NPB, in the number one rover spot.

In 2006 and 2007, there was an increase in the number of Southern California 10-band equipped rovers and in most of the contests they dominated the winning positions. My comment in the June VHF QSO Party write-up in QST that Single-op and Multi-op stations analyzed the impact of rover contacts and they accounted for 20-35% of their total scores. In the case of the SCCC rovers, spending most of their time focusing on each other and perhaps a few selected fixed stations, they could set up to capture top honors in selected classes. They used this strategy in several subsequent events.

Rules changed in 2008 for rovers. Rovers were now allowed to use APRS providing call and location in Beacon Mode only. Use of APRS information through digipeaters and/or the internet was limited to multi-operator stations (LM, UM, Rover) as per the general contesting rules. All Rover classes could use HamIM. There were three classes delineated: the rover (classic) with 1 or 2 operators and unlimited bands; the limited rover, again 1-2 operators and using 4 bands of their choice and having a low output power restriction; the unlimited rover allowing any number of operators and with no restriction to carry all their equipment and antennas. The rover and limited rover could participate in club aggregate scores as long as operation was within the 175 mile radius of the club. Those classes were also limited to 100 QSOs with any other rover. Unlimited rovers could not participate in club aggregate scores and had no limits on rover-to-rover QSOs. Since this time and rule change, the group of Southern California Contest Club rovers has not done any grid-circling. They have continued to use their stations to follow the rules and contact limitations, moving the group from grid to grid to maximize their opportunities for both contacts and multipliers. In his QST column in March of 2008 (p89), Gene, W3ZZ, commented that these changes would appear to deal with the grid-circling and pack-roving issues and increase rover participation with the wider availability of transceivers that covered

several of the VHF/UHF bands. Steve, K4GUN, wrote a nice article in the 2008 October issue of QST (p48-50) outlining his learning experience as a first-time Limited Rover. How would the new rules affect rovers and what would the results show? In the first outing in January 2008 under the new rules, there were 34 Rover entries, 24 Limited Rover entries and only 1 Unlimited Rover entry, whose score of 17K points was unremarkable. In the June event that year, it appeared that there was still a group of rovers that worked together, under the limits of the rules, and won the top honors in Rover, Limited Rover and Unlimited Rover categories. There were only a total of 8 entries in the UR class. It is especially notable that KG6TOA/R used four top bands, from 2.3 through 10GHz and crossed 15 grids, staying under the limit of 100 QSOs with any other single rover, and scored 97K points to win the category. The next highest LR score was 36K. Noting this scoring aberration, the rules would again soon change for this rover class. In the September VHF QSO Party there were only three entries in the UR class, and there did not appear to be a clear distinction as to why the station was in this class, as many of the rovers did not have multiple operators, nor did they appear to make more than 100 QSOs with another single rover. It appeared that a station could simply declare itself as an Unlimited Rover to get into a smaller competition pool.

In January of 2009, the California rovers continued their tactics to dominate the top places in all three rover categories. The ARRL announced in the August edition of QST that the Limited Rover category would only include the lowest 4 bands for the contests—that would be bands ABCD (50-432MHz) and for the UHF Contest bands CD9&E (222-1296MHz). Those rules were actually in effect for the June VHF QSO Party and it did not make a significant change in the number of entries in that category nor a significant difference in the overall scores. There was however an absence of the California team rovers in the submitted logs and there was some concern that the series of constructed VHF and microwave rover stations were languishing in disuse. This thought was put to rest as the September VHF QSO Party showed those rovers back in action and taking the top 5 spots in the Rover category.

Adding to their list of top honors, the Southern California Contest Club had their rovers scoring in the 500K point range in the January 2010 VHF SS which led them to a first place in the Medium Club competition with an aggregate of over 5 million points from 12 logs. These scores and tactics continued to distort the field of competition. In the June activity they had a group of 15 operators in 10 vehicles and fixed multi-operator and single-operator stations. Each vehicle had 10 bands with 3 also equipped for 24GHz. The design of the rover stations was cleverly done, with the microwave transverters all mounted in a toolbox and the antenna stack mounted atop the toolbox. The entire package was then mounted to a rotator which is fixed to the vehicle. This arrangement has several advantages for the rover. It keeps the feed lines to the antennas very short, aligns all the antennas simultaneously, and allows the package to be fitted to any suitable vehicle without drilling any holes in the metal. Nine of the vehicles entered the Rover category and they won the top 8 spots nationally with scores from 224-299K. Murray VE3NPB and Russ VE3OIL came in 9th with their score of 120K. They have been a team for almost 20 years of roving, switching off and using each other's call signs for the different contests. In this outing, Brian, ND3F, and David, N3XUD, teamed up and operated in the Unlimited Rover category to score 180K points and lead the group of 10 entries. The September QSO Party had a similar rover story with the SCCC rover group taking the top 8 places with scores in the 200K bracket. This time N6NB entered as a QRP station, from a nicely positioned mountaintop location. He was able to break the scoring record for this category with 266K points, supported by working all the pack rovers with hundreds of QSOs.

In January of 2011 there was more of the same rover activity from the usual players, with the SCCC copping all the top spots in all three Rover categories. This time John, K9JK, joined forces with N6MU to take the first place Rover position, working with the pack or team rovers in the west. June's rover standings were slightly different, but the same group of SCCC rovers was leading the scoring again in their categories. In September the SCCC group was not on the air. Wayne, N6NB, was on his way to New England to rove with his new trailer set-up and tower when he received a call about the canyon fire on September 4th that destroyed the mountain-top cabin and all the station contents. He aborted the trip east and returned to California to manage the losses.

John W1RT/R with Andy K1RA placed first in the rover category with 245K points. The VE3OIL/R team was second with 119K. In the LM category, K2QO/R scored top honors with almost 66K. The NN3Q/R team was tops in the RU category with 52K. This seems to illustrate the unique nature of the density of VHF/UHF contacts in the east coast corridor between Maine and the Carolinas. In order to compete on the west coast, they had to initiate a strategy and tactics to make scores that would beat the east coast rovers.

In ongoing attempts at record setting, the SCCC group teamed up with the Nacogdoches (a small town in East Texas) ARC in January of 2012. They had at least 8 well equipped rovers doing their dance in addition to working the mother ship, this time K5QE. They took all the top rover spots with scores between 184-379K, and the K5QE MU station won their category with 812K points. In addition the Nacogdoches ARC won the Medium club gavel with 3 million points from 15 logs. The adventures of the SCCC rovers continued in June for the VHF Contest and in August for the UHF Contest. In each of these activities their rovers took the top several places. In January of 2013, Wayne, N6NB and Carrie, W6TAI, joined in a rove back with the East Texas group using their newly assembled tower trailer. With the tower's height advantage of about 50' when fully extended, they were able to make contacts through 10GHz from multiple grids.

Several large multi-op stations make use of rovers to enhance their scores. I like to call these "dedicated rovers" whose first goal is to contact the mother ship from each grid, and then, time permitting, try to make additional QSOs with other stations. For several decades, the W2SZ Mount Greylock Expeditionary Force has had almost a dozen rovers traversing grids in the Northeastern US to provide contacts and multipliers from grids that otherwise have little or no activity, especially on the microwave bands. Although they are technically not true captive rovers, as they can and have made QSOs with other stations, the way that many of them are equipped makes it near impossible to have QSOs with them on the higher frequencies. This unusual situation is due to the way that the rovers were originally equipped; using a unique IF for the microwave bands which allows them to contact the mother station on unique frequencies with very limited power. Each of the rovers has a route with detailed maps and a system of timed transmissions for microwave QSOs in 15 minute blocks. Although it is rather easy to make a contact with W2SZ on bands ABCD, scheduling a contact with them on the higher bands is often difficult and generally waits until the end of the contest when they have finished working all of their rovers. Apparently this strategy has been very effective for them as they have been consistent winners of the MU category for decades. There have been exceptions though, when other MU stations have adopted similar strategies and beat out W2SZ for top honors in that category.

Controversy continues regarding the practice of pack-roving. With the rules change, the practice of grid-circling has essentially been eliminated. There is no question that the technique yields high scores and helps to win certificates, plaques and gavels. Planning routes and coordination of communication between large groups of rovers is a complex process. Rehearsing the activity is also valuable to assure efficiency of time. Hams who were not previously engaged in VHF activity have had been stimulated by these activities. There are creations of small communities to support these group activities, but they have had no significant impact on global contest participation. They do not adhere to the statement, "All Rovers are encouraged to adopt operating practices that allow as many stations as possible to contact them."

The enjoyment of roving and completion of an active day of communication with multiple other stations is still quite satisfying. As a rover myself for almost 20 years, operating in the ARRL January VHF SS, during the spring and fall sprints, the ARRL June and September VHF QSO Parties (now called contests), The July CQ VHF WW, the ARRL August UHF Contest and the 10GHz and Up weekends, I find it both fun and exciting. Just like Forrest Gump : My momma always said, "Life was like a box of chocolates. You never know what you're gonna get." Rovers have experienced all types of weather conditions, especially in higher locations. Some have encountered problematic road conditions, emergencies where their radio communications came in handy, and multiple stops from law enforcement officers, eager to assure the safety of the community and country from potential problems.

Over the years there have been dozens of articles in QST and other Amateur Radio publications describing the construction of rover vehicle radio set-ups and antennas, operating suggestions and locations. There are multiple web-sites with information on rover power sources, checklists of needed tools, spares and emergency gear. Rovers come in all sizes and shapes—from motorcyclists or even bicyclists to automobiles, SUVs, motor homes and buses. Although there are usually 60-110 rovers logs submitted for each of the ARRL events, there are usually more rover stations out on the roads and hilltops making QSOs. Although this article has focused on a limited number of top-scoring rovers, there are dozens of hams who have been roving on a regular basis. Whether they operate with one band or more than 10, rove in 2 grids or 22, they have added a dimension to VHF contesting and activity in general. They have provided a new avenue for hams who are stymied by location or deed restrictions to be able to be adventuresome and compete. They have encouraged greater diversity in contesting, and new competitive angles for scoring. They have facilitated others achieving their VUCC goals. They have even spawned the “Reverse VUCC Award” sponsored by the Central States VHF Society. The award is very similar to the ARRL's VUCC, but rather than contact a set number of grids on a frequency band, the goal is to make contacts FROM a set number of grids per band. The number of grids coincides with the ARRL award. See <http://www.csvhfs.org/CSVHfVUC.HTML> for details.

There appears to be many reasons that hams become rovers, and there is no one common theme between them, except perhaps for a spirit of adventure. I did enjoy multi-operator outings for many years with good clear and high locations. Over time these locations became unusable, usually due to access permission issues. It also became increasingly difficult to haul large amounts of radio gear and antennas and feedline, set up and tear down over a single weekend. I operated from home for a few contests. My personal reason initially for becoming a rover was that I lived in a suboptimal location for VHF communication, and I wanted to get more activity, having been spoiled by my multi-op experiences. My first roves were done in the family station wagon, using a shoot-and-scoot technique in 2-4 grids in the SE Massachusetts and RI grids. When I moved to Pennsylvania, I bought a home in a CCR restricted community that prohibited outdoor antennas (except for small satellite TV dishes). Having had the rover experience in RI, I thought that I could continue my activities on VHF as a rover. After one or two outings using the shoot-and-scoot, I realized that I wanted a set-up that had minimal set-up time and that would keep me warm in winter and cool in summer. When a used 1994 Ford 150 van became available, I purchased it and converted it into the rover I have used for the past 10 years.

As a Packrat, I realized that I could contribute significantly to the club aggregate scores for the various contests, and my routes have generally been planned to optimize the use of the microwave higher point per contact bands. When the club score analysis is completed, the effort appears to be very worthwhile, not only for my own scores, but for those of the other club members who are capable of working me on 10 bands from multiple grids. On occasion I have had the pleasure of another club rover similarly equipped travelling close by. We have taken advantage of completing some runs of the bands when we are in the same or adjoining grids. Although this certainly pumps up the scores, the excitement is still in adding some distant grids or finding some alternate propagation modes and making as many contacts as I can in all directions and with all responders to my CQs.

For many years I have given feedback to the VHF Advisory Committee regarding the rover class as 1 or 2 operators. Most often as a solo rover, doing all the preparation, route planning, driving and operating, I feel somewhat disadvantaged to the 2-operator teams who can be operating on multiple bands simultaneously. One person can continually be on 6m if it is open, while the other searches or calls on 2m and then runs the bands with callers. In other situations, when 6 is not open, one operator can continually be on 2m and then hand off the contacts to the other op to run up the bands. These rovers have also designated a specific calling frequency on 2m in order to have other contesters find them more easily. Perhaps it's time for me to reconfigure my station for 2 operators and find a roving partner.

As many have recognized, there is not a level playing field in amateur radio contesting. When it comes to DX contesting, coastal stations are at an advantage. When it comes to VHF contesting, population density and topography are major factors in scoring. Aurora favors the stations toward the north. E_s and TE propagation is fickle and can play its tricks in any part of the world. In an attempt to win contests, there have been many groups and individuals who have made serious financial investments in land, towers, antennas and radios that will facilitate their efforts. The same with rovers. Wayne, N6NB, has travelled east many times to compete in the ARRL events because he recognizes some of the advantages of contesting in the Boston-DC corridor. Wayne and the SCCC group has also made a significant investment in gear, organization and travel in order to accomplish what they have done in different geographies with different VHF operator densities. Yes, different strokes for different folks. All rovers have found some reason to get out on the roads. Most fixed stations are happy to work them, adding points and fun to contesting. The ARRL VHF and Contest committees have been aware of the issues that involved with the extremes of operations and have continually made changes to the rules to attempt to encourage increased participation and fair scoring schemes. As we move forward we will continue to be rationale and respectful of everyone's efforts to enjoy VHF contesting.

References:

1. The Past, Present and Future of VHF Contesting; QST Oct 2009 p80-83 Kevin Kaufhold W9GKA

Additional useful websites for Rovers:

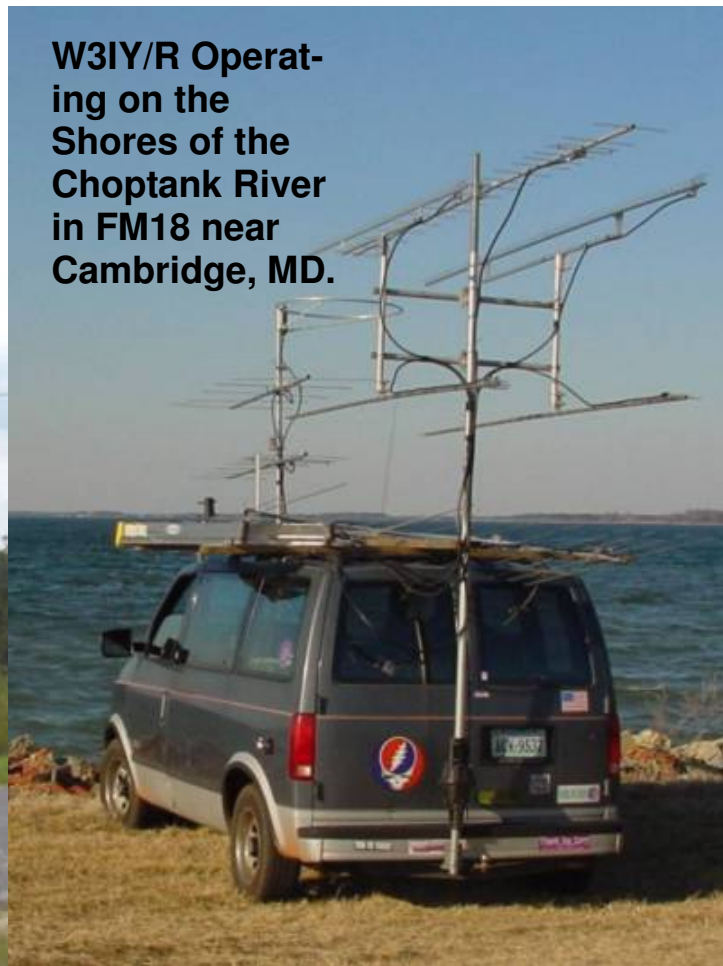
<http://www.k0nr.com/rwite/rover.html>

<http://groups.yahoo.com/group/vhfrovers/>

W3IY/R
Sept 2002
FM15vx

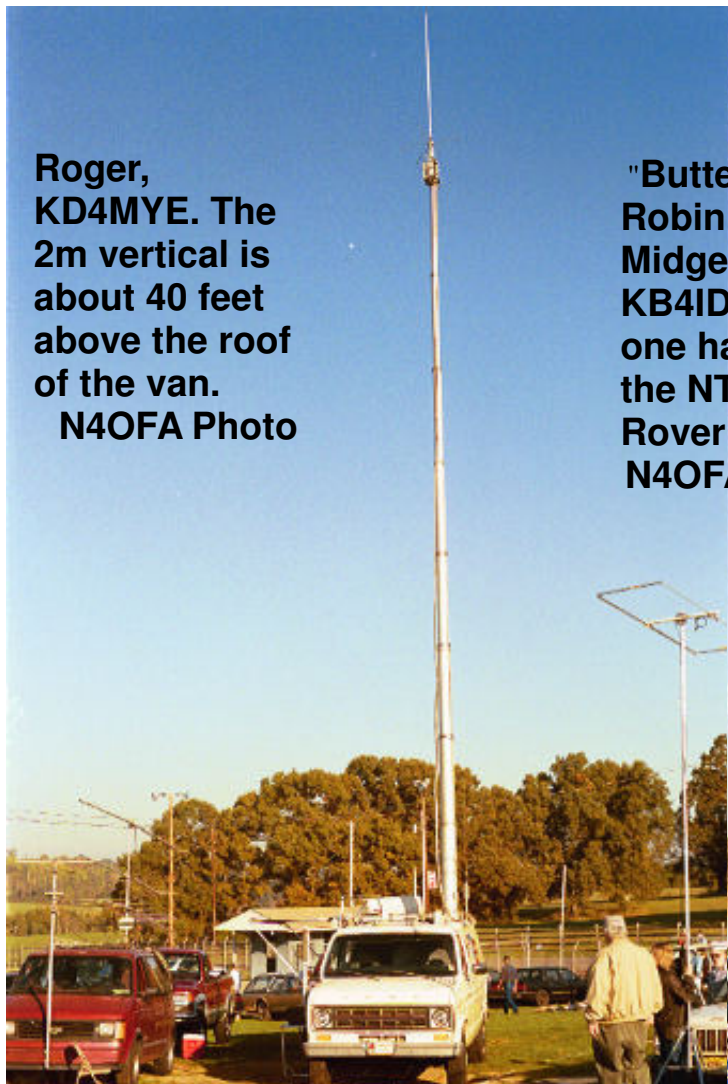


W3IY/R Operat-
ing on the
Shores of the
Choptank River
in FM18 near
Cambridge, MD.



W1RT/R with
K1RA
Sept 2009

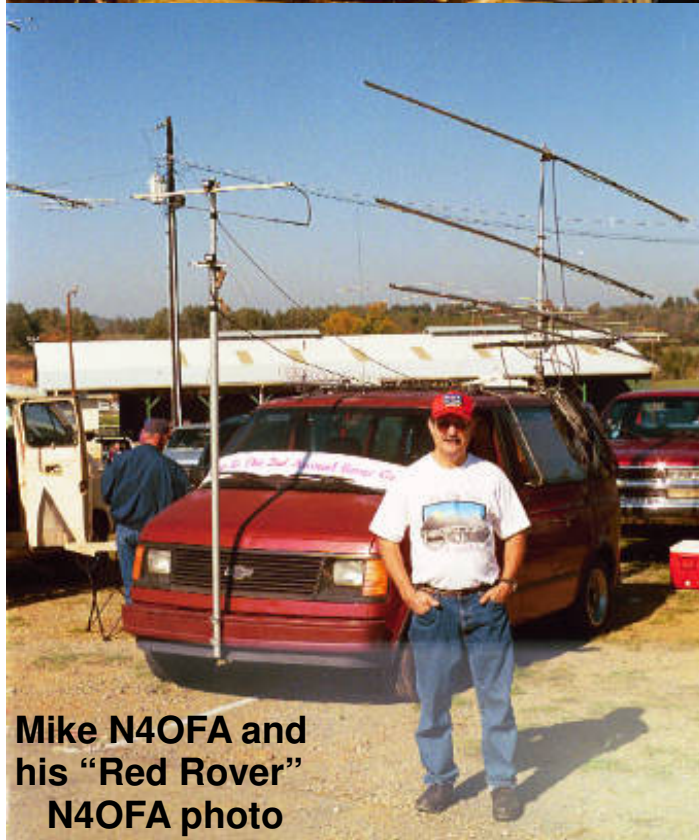




**Roger,
KD4MYE. The
2m vertical is
about 40 feet
above the roof
of the van.
N4OFA Photo**



**"Buttercup"
Robin
Midgett,
KB4IDC,
one half of
the NT4L
Rover team.
N4OFA Photo**

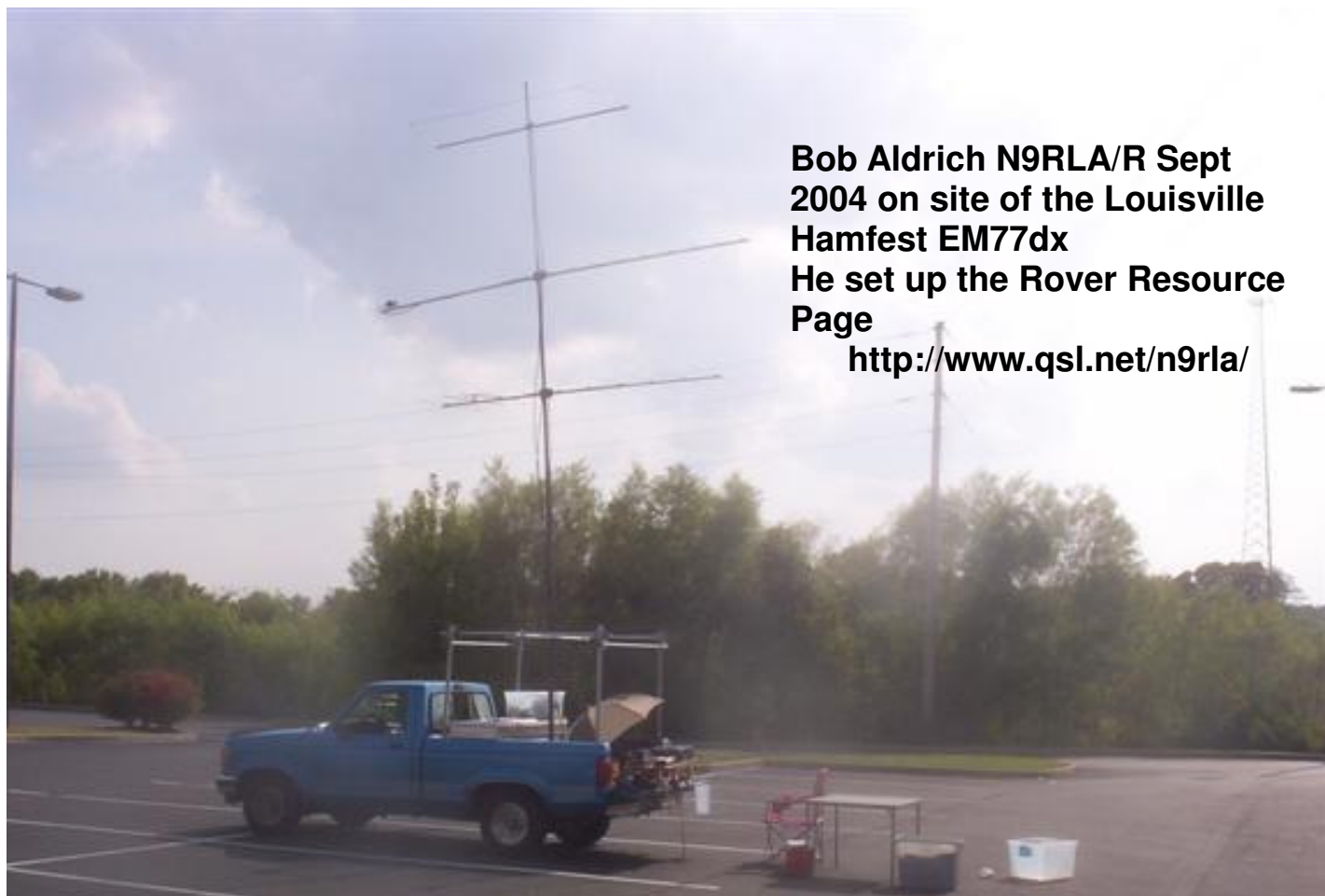


**Mike N4OFA and
his "Red Rover"
N4OFA photo**

**"Lighthouse
Rover"——>
Mark Herson
N2MH/R.
All antennas
are home-brew.
The photos on
this page were
taken during the
Tri-Cities Hamfest
Gray, Tennessee,
October, 1999
and are copied
from the web
pages of Mark
Herson, N2MH
<http://www.n2mh.net/rover.htm>**



**K4AR
Photo**



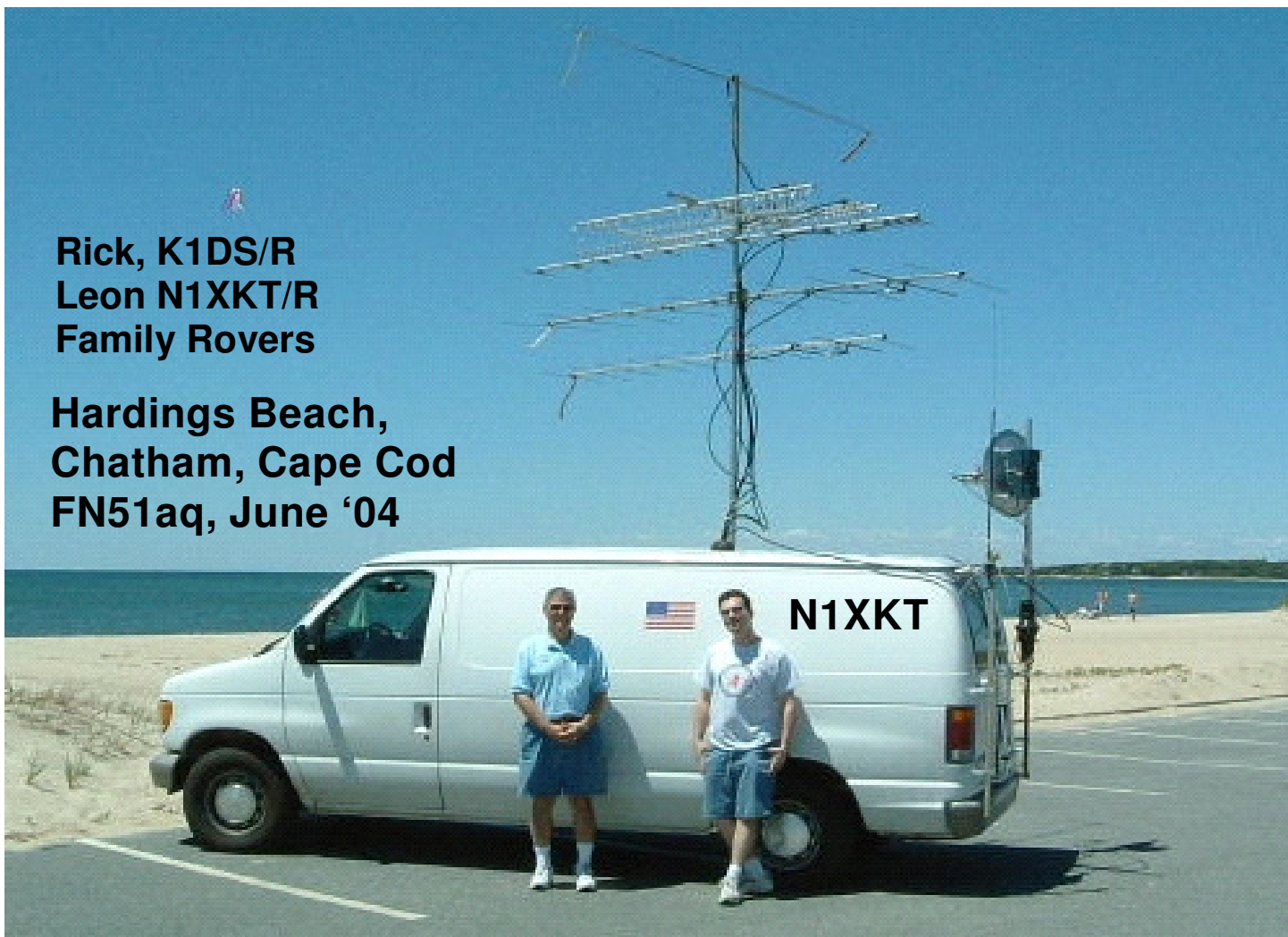
**Bob Aldrich N9RLA/R Sept
2004 on site of the Louisville
Hamfest EM77dx
He set up the Rover Resource
Page
<http://www.qsl.net/n9rla/>**



**Steve, K5AC/R at
K5QE 2004 BBQ
<http://www.k5qe.com/>**

**Rick, K1DS/R
Leon N1XKT/R
Family Rovers**

**Hardings Beach,
Chatham, Cape Cod
FN51aq, June '04**



K1RA @ K8GP/R FN00
<http://www.k1ra.us/roving/k1ra-k8gp-rover-arri-jan-vhf-ss-2012>



**Brian "The Rover"
ND3F/R
Converted Ambulance**





June, 2004, rove from Midland, TX northward to western Nebraska, activating 20 grid squares. Dumas, TX at the convergence of grids DM85, DM86, DM95 and DM96. N6NB & KG6TOA in the van, N6VI center and N6MU right





**Carrie,
W6TAI with 6
band micro-
wave box**



**Above: The Rover "Toolbox" with
all appropriate radios inside
the toolbox mounted on a rotor
with antennas attached.**

**Photos with permission from N6NB from:
<http://commfaculty.fullerton.edu/woverbeck/rover.htm>**

**N6NB/R Trailer Tower
rover. Has been driven
coast-to-coast and dem-
onstrated at the 2012 Mid-
Atlantic VHF Conference**



Photos with permission from N6NB from:
<http://commfaculty.fullerton.edu/woverbeck/>

**SCCC “Pack” or “team” rovers Aug 2009
UHF**



**SCCC “Pack” or “team” rovers Sept 2009
VHF**



**SCCC “Pack” or “team” rovers
Jan 2012 VHF SS
Port Arthur TX EL39**

