

## Results of the 2014 CQ World Wide Foxhunting Weekend

*KØOV thinks there is no greater thrill in ham radio than finding hidden transmitters. Apparently lots of CQ's readers agree.*

It's the "Most Fun Town in America!" That's what Rand McNally called Glenwood Springs, Colorado on its Best of the Road website in 2011. In and around this town of about 10,000 souls at 5,760 feet elevation along Interstate 70, you can have fun rafting, paragliding, or ATVing. Better yet, you can go hidden transmitter hunting with the Ski Country Amateur Radio Club.

Every year, I hear from Bob Cutter, KIØG, with his story of SCARC's annual picnic and foxhunt in Glenwood Springs or another town in Garfield County. In 2014 it was hosted by Jim Bailey, NØIAA, on May 24 at his home in Silt. Participants scattered all over the area with their radio direction finding (RDF) antennas but they ended up back in the picnic area, where a tiny transmitter was concealed inside a Pringles® potato chip can.

During the CQ World Wide Foxhunting Weekend, hams discover and rediscover the fun of using RDF techniques to track down transmitters that their fellow hams have put in unusual places for them to try to find. How a search for a radio signal came to be called "foxhunting" is for the historians to fret about, but don't worry because no furry critters are being harmed.

As always, my 2014 Foxhunting Weekend announcement in *CQ* brought a batch of hunt announcements and reports about hams having fun. Rules were determined locally so few hunts were alike, except for the on-foot, radio-orienteeing events that followed standard rules of the International Amateur Radio Union<sup>1</sup>. As you prepare for Foxhunting Weekend 2015, read on to find out how your fellow hams had a blast participating in transmitter hunting all last year.

### T-Hunting in Traffic

Radio foxhunting in cars is often called T-hunting and it would be hard to find a locality with more of it than the Chicago metro area. There is a competition almost every Saturday night in the Windy City, with very few cancellations, even when the weather is at its worst. According to Mike Brost, WA9FTS, the hunt on the first Saturday of each month is sponsored by Society Radio Operators and the third Saturday of the month hunt is sponsored by the Chicago FM Club. There are also hunts on the second, fourth and fifth Saturdays that aren't sponsored.

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*There is a little transmitter hidden in one of these potato-chip cans. You will need a good direction-finding antenna to tell which one. Jim Bailey, NØIAA, was huntmaster for the Ski Country Amateur Radio Club hunt in Colorado. (Courtesy Bob Cutter, KIØG)*

Foxhunting Weekend 2014 coincided with college graduation for the sister of Patty Sanderson, N9PLS, so the Chicago hunt that that she and hubby Matt, KC9SEM, were to hide that Saturday night was intended to be a quick one in the midst of celebrations. They left the reception and everyone expected them to find a hiding spot nearby. Indeed they did, as Mike writes, "The signal from the golf club starting point was back in the direction of the party.

"I was distracted by the UPS facility on Gary Avenue," Mike continued, "so I had to check out each nook and cranny there. I then drove south to a dead end street. I got out, leaving Carol in the car, and crossed over the railroad tracks where I saw Tony Levand, AA9CC; John Williams, WD9EXW; and Tom Geletka, N9CBA on foot. I also spotted Matt's truck in a loading spot. Then Matt transmitted and I ran back to where I came from and over the tracks where I found Matt and little Jacob for second place, just about five minutes behind Tony. We all made it back to the party in plenty of time."

With so many hunts, it's natural for this close-knit



Marvin Johnston, KE6HTS, (at right) helps a new foxhunter to assemble his measuring-tape Yagi at a build-then-hunt session near San Dimas, California. (Photo by Joe Moell, KØOV)

group to keep statistics to determine which hunt teams are doing the best. Mike does just that, keeping a running tally throughout the year. Then at year's end, he hosts a party at his home where the Foxhunter of the Year plaque is presented. Matt and Patty were winners for 2014, breaking the winning streak of AA9CC.

There are also lots of weekend mobile hunts in the San Francisco Bay area, where some hunters have been doing it for many years and consider themselves to be experts. This makes it difficult to find transmitting locations that have not been used before and provide a technical challenge. Most of the time, hidere take advantage of the nearby hills and mountains to reflect 2-meter signals and cause confusing multiple bearings or even completely false bearings.

For the group's June 7 hunt, Gary Mitchell, WB6YRU, tried something different. "It turned out to be a difficult hunt," he wrote, "harder than I expected. My transmitter was in a part of Almaden Creek where the creek itself was aligned toward the start point. My plan was that the creek would act like a waveguide to duct the signal to the start point, but it would be difficult to receive elsewhere. It worked!

"The power output was about a half watt into a 5/8 wavelength vertical antenna," he continued. "The general area was barely inside Union City. At the north end of Perry Road, off

Decoto, is an entrance to the Almaden Creek Trail. From there, my location was a short walk southwest, where a small creek joins from the east. Even our most experienced hunters had trouble, and only two out of five teams completed the hunt."

Five weeks earlier, the hider was Bernhard Hailer, AE6YN. "The fox was near Rancho Arroyo Park, right at the Alameda Trail corner," he wrote. "My hiding place between two metal fences caused a few very nice signal reflections, apparently pointing to Newark Mall. The most direct route was 9.1 miles going through Mission and Niles Boulevards. Arriving at the park wasn't the end of the hunt, because they had to find the transmitter. My antenna was painted beige and was nearly impossible to spot near the ground in a pile of grass by the foxbox. The average search time was almost 15 minutes."

Many mobile T-hunts in the Bay area and elsewhere include an on-foot search at the end. In some other localities, foxhunters are delighted when the entire hunt is done without a car. Every year brings more reports of Foxhunt Weekend events that are all on foot. They appeal to younger people because they reward physical ability instead of driving and street navigation skills. The appeal for adults is often food, as it was in the aforementioned Ski Country event.

Food and HF-QRP were the added attractions for the Radio Amateurs of

Tacoma during their Winter Field Day on February 1, 2014 at Point Defiance Park. Yes, it was the day before Groundhog Day, which led to the unofficial name: Freeze Your Buns Off QRP Event. According to Bob Heselberg, K7MXE, "Four 2-meter 'bunnies' were concealed within about a mile and stalked by tape-measure Yagi-wielding hunters wearing orange traffic vests. Of course in this public location we attracted some attention, and many passers-by were curious enough to ask what was going on. That led to interesting conversations about ham radio and comments such as, 'Man, I didn't know this even existed!'

"Joe Lester, K7ZG, was the clear winner with one transmitter at 11 minutes and the other at 21 minutes. Most of the folks had times from 21 to 35 minutes. A bunch of interested visitors gave a try at the closest bunny and all found it. This kept my loaner RDF gear busy for most of the day."

Another huntmaster with gear to loan was Mike Miller, WB6TMH, who organized a foxhunt at the annual hamfest of the Valley of the Moon Amateur Radio Club in Sonoma, California on April 26. After the pancake breakfast, swap meet, and VE session, fest-goers could try to find Mike's two QRP transmitters with gear borrowed from him, or their own. "This year was the best," Mike wrote. "The grade school kids of Moe Lianes, KI6JNU, took up the challenge. They did better than most adults!"

## An RDF Training Camp

The e-mails of K7MXE and WB6TMH are reminders that foxhunting doesn't require the hunters to be licensed radio amateurs, so anyone can participate. What a wonderful way to get young people interested in amateur radio. But on-foot transmitter tracking isn't always an intuitive activity. Some people catch on quickly, but others need practice and coaching. It was with that in mind that Paul Gruettner, WB9ODQ, organized a "training camp" at Whitnall Park in Franklin, Wisconsin on Foxhunting Weekend. At 10 a.m., a dozen hams and two future hams were ready for foxhunting, followed by a picnic lunch.

"It has been a long, cold winter," Paul wrote. "But spring finally arrived on May 10 with lots of sunshine and temperatures in the 70s. The nice weather brought out 14 foxhunters and there were six transmitters set up for them. The first four ran sequentially on 146.43 MHz. MOE was nearby with an orange cone next to it. Then MOI, MOS, and MOH progressed to more challenging



Jeff Burns, W4GXL, and T. J., his son, used a home-built tape-measure antenna to find transmitters with other members of the York County Amateur Radio Society on Foxhunting Weekend. (Photo by Brent Case, K4BSC)

hiding places, though all transmitters were in relatively plain view. After hunters found these transmitters, they moved on to two more transmitters on 146.565 MHz. They were concealed in typical Milwaukee foxhunt fashion, with one inside a log and the other on top of a log with a large piece of bark covering it. All hunters did an excellent job of finding every transmitter.”

With a little more experience, these trainees will be ready for championship Amateur Radio Direction Finding (ARDF), also called *foxtailing* and *radio-orienteeering*. Once a year, fox-tailing fans get together somewhere in the U.S. to see who is best. Every two years, the World Championships take place somewhere in the world. An international sport like this requires uniform rules in every country, which is the reason for transmitters sending MOE, MOI, MOS, MOH, and MO5 in tone-modulated Morse on two meters. That’s what the transmitters at championship events send. Knowledge of CW isn’t necessary — all you need to do is count the dits to tell which transmitter you’re hearing.

ARDF introduction and training sessions take place almost every month in southern California. On Foxhunting Weekend, the venue was Tri-City Park in Placentia as part of the annual Antennas-In-The-Park event of the Fullerton Radio Club. I put out five very easy transmitters for practice as well as a five-transmitter course with MOE/MOI/MOS/MOH/MO5 foxes. According to international rules, all five transmitters are on one frequency in a five-minute cycle. First #1 transmits for a minute, then #2 for a minute and so on, with #1 returning to the air after #5. Hunters need to pay attention to the bearings of all five as they hear them, then plan a course that finds them in the shortest time.

On the same day, over 30 radio-orientees in San Diego County were gathering in Penasquitos Creek Park for practice and competition. Joe Coronas, N6SZO, and Joe Loughlin,



Three new hams from Rowland High School in California worked together to find my hidden transmitters at a radio-orienteeering session at nearby Schabarum Regional Park. They are Philby Wang, KK6IYJ; Calvin Lin, KK6IYL; and Ivan Law, KK6GRX. Their physics teacher and Elmer is Bob Houghton, AD6QF. (Photo by Joe Moell, K0OV)



*Michael Olbrisch, KD5KC, and daughter Heidi Wilden, KE5BHT, of El Paso, Texas are happy after their first mobile transmitter hunt, which they won. Heidi built this 2-meter quad, which she held out of the van window as Dad drove. Next time, she plans a better mounting system! (Courtesy of KD5KC)*

KE6PHB, who helped set transmitters for the USA ARDF Championships at Mount Laguna, California in 2012, have been putting on courses like this in San Diego ever since. This course was a difficult one, with the winning Elkerton family team of Bill, W6ZM; Robin, KC6LEA; and Bryan, KI6DUR, taking just over two hours to find all five transmitters.

National and world ARDF championships are a bit more complex than these local sessions. They take place in large forests with start and finish in separate locations, marked on an orienteering map provided to each competitor. Maps include elevation contours, terrain features, and color-coding that corresponds with difficulty of travel in the terrain. Total distance from the start to each of the five transmitters in optimum order and then to the finish is typically three miles or more.

ARDF championship hopefuls compete in 11 age/gender categories and are required to seek three, four, or five of the transmitters, depending on their category<sup>2</sup>. The next U.S. championships are being planned for eastern Colorado on the last weekend of August. Anyone who can find his or her

way through the woods with a map and RDF gear is eligible to participate.

### Beams from Tape Measures

The vast majority of hidden transmitter hunts, both mobile and on foot, are on the 2-meter band. Nearly every ham already has a suitable 2-meter receiver, and directional antennas for that band are easy to make. The most popular is a three-element Yagi with a PVC pipe boom and elements cut from a steel measuring tape<sup>3</sup>. It can be constructed in less than an hour and it's ideal for group building. When Marvin Johnston, KE6HTS, and I put on a practice session in a local park, there is almost always a workshop with tools and parts for building these antennas. I'm hearing about other clubs that are holding such workshops, including the Calgary Amateur Radio Association in Alberta, Canada.

Measuring-tape Yagis are best for all-on-foot hunts, where their flexible elements provide a measure of safety as hunters crash through the brush. Most of them aren't stable enough to keep their shape when mounted on a vehicle traveling at roadway speed. But the fox-

hunters of Rock Hill, South Carolina haven't let that stop them. Brent Case, K4BSC, provided this Foxhunting Weekend report from the York County Amateur Radio Society:

"It seemed fashionable to have a directional antenna sticking through the sunroof of the car on the morning of May 10. I witnessed this spectacle as several passed the intersection of Ebinport and India Hook Roads. Eventually they made their way back to the site of the fox in the parking lot of the Throwback Kitchen Cafe. The first to arrive, about 30 minutes after the start of the hunt, was Pete Krenn, KC4ZJ. He zeroed in with his tape measure Yagi and just a couple of bearings on his map. About 20 minutes later, two vehicles were vying for second place as they both entered the parking lot in succession.

"The first car with Karen Ferguson, N4KLF; Raymond Ferguson, N4REF; Steve Kelly, WB4BNI; and Walt Palmer, KF4QXQ, was packed with a tape measure antenna out of the roof, the iPhone FoxHunt map application<sup>4</sup> and a paper map with a layer of clear plastic and several readings drawn on it. The other car was a close third with Jeff Burns, W4GXL, and his son, T. J., also equipped with a tape measure antenna and map. Lastly, Darcy Pach, KK4ONT, conquered the quest for the fox using his tape measure antenna. All had fun and had many stories to tell."

If your club has been holding regular foxhunts and attendance is going down, why not provide a new challenge this year? Transmitter hunting in the Hudson Valley area of New York State got a boost from the "Resurrection Foxhunt" on April 12. Organizer Anthony Cioffi, N2KI, wrote, "the hunt started at 10 AM after a refresher course on technique by Jim Schug, W2JTS.

"One by one the teams departed the staging area at Thomas Bull Memorial Park to follow their initial bearings. It would be an hour and 20 minutes before Peter Gloistein, KC2PJH, made his entrance into the parking lot on two wheels, exclaiming, 'You are the fox!' And so his on-foot trek began, searching for the ammunition-box transmitter under tall grass behind a fallen tree. Then he was ready for his second task of finding the MicroFox<sup>5</sup> in a cedar tree about 50 yards from the first transmitter. As instructed, he signaled that he found it and went on to find the third transmitter."

All 14 hunters in six teams were successful in finding at least two transmitters in four and a half hours. They had such a good time that another hunt was scheduled for June 21. This time, it was

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a “Capture the Flag” event. N2KI’s rules called for two teams, East and West. The East team was to hide a transmitter on the east side of Orange County and the West team would do the same on the west side of the county. Each would hunt for the other team’s transmitter, with a four-hour time limit. Hunters on each team would be in their own vehicles, exchanging bearings and information among themselves as they wished.

N2KI hunted on Team West under Team Captain Neil Shubert, AC2O. Others on the team were Dan Tierney, N2DBD, and Steve Hoffman, KC2YYF. “We hid our transmitter in Highland State Park,” reported Anthony. “Each team was required to take the first bearing from its transmitter. My team members agreed that the first bearing was 133 degrees. We set out in different directions to obtain more bearings and triangulate the signal. Steve went east and I went southwest. Neil and Dan followed along the bearing, zigzagging their way and updating bearings on the move.

“All the while, we coordinated our information on a repeater. It didn’t matter if Team East heard us because they had a different mission. My bearings put the signal into Goose Pond Mountain State Park, a little over 12 miles away. This was confirmed by AC2O and N2DBD. As I passed the park, I was able to tune 10 kHz off and still have a full-scale signal, so it was surely in this area. Our team members all arrived at the parking area just about the same time.

“One hour and 21 minutes after the start, we had found the foxbox, signaling victory for Team West. We dialed the phone number and read the code statement affixed on it to prove

we had found it. Team East continued on the pursuit of our transmitter to further hone their skills, finding it by about 1 p.m. What a great job by all of the participants!”

That Hudson Valley hunt was a variation of the “Free for All” T-hunts that take place occasionally in southern California. In the SoCal version, each individual hunter or vehicle team puts out one or more transmitters, then each tries to find as many of the other hunters’ foxes as possible. Sometimes there are 40 or more transmitters on the air on one frequency. Mutual QRM is minimized by setting each transmitter’s timing to just a few seconds each minute or two.

### **Make Plans Now**

Mobile or on-foot, one transmitter or many, a radio foxhunt will definitely stir up activity in your ham club. It’s time to start planning for this year’s CQ World Wide Foxhunting Weekend, which will be May 9-10. CQ doesn’t impose any rules or offer any awards for Foxhunting Weekend. It’s all up to you and the hams in your hometown. Since the primary objective is lots of hunt participation, we don’t insist that your event be on that weekend. Any time in the spring is fine with us!

Watch for more information about Foxhunting Weekend 2015 in an upcoming issue of CQ. You can read more about foxhunting and get the list of information in a complete CQ Foxhunting Weekend report at my website<sup>6</sup>. I am eager to read your reports of this year’s foxhunting activities and the new ideas that you come up with. Happy hunting!