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Wireless Radio Has Field Day

The Vienna Wireless Society set up camp at Burke Lake to connect with other ham radio users across the continent.

By [Mike DiCicco](#)

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Just inside Burke Lake Park several tents sat in a field last Saturday, although it was not a designated camping area. The chugging drone of a generator filled the air. Beneath that, the monotone staccato of Morse code chattered away, and the hiss of radio static emanated from several of the tents, punctuated by pops and whistles and occasional distorted voices — some urgent and crackling, others warped until they sounded surreal, like Darth Vader underwater. Hardly a word was distinguishable. These could have been snippets of conversation overheard from the far reaches of space, from the realm of the dead. Wires ran from one tent to another, to various antennas, to other wires strung between trees.

It would have been easy to assume that some long-estranged Soviet astronauts had returned from orbit around a time-bending black hole, made an emergency water landing in Burke Lake, and set up a spy operation, still unaware of the Cold War's end.

Certainly, it would have been easy to assume this, if one had not known that Saturday was the American Radio Relay League's (ARRL) annual Field Day.

The men and women hunched over laptops and radio receivers, watching and listening for messages from beyond, were not anachronous Communist spies but were, in fact, members of the Vienna Wireless Society, a group of over 100 ham radio hobbyists.

The Field Day in which they are participating is a North American affair, with participation from about 2,000 other such clubs throughout the U.S. and Canada. This is a competition in which each group tries to make contact with as many others as possible within a 24-hour period, and it is staged primarily as an emergency preparedness drill, because ham radios are capable of relaying information in the absence of any communication infrastructure. If the cell phone network and telephone lines were down, "hams" could still throw a wire over a tree branch and establish contact with one another.

THE ARRL FIELD DAY 2006 ran from 2 p.m., Saturday to 2 p.m. Sunday, Eastern Daylight Time. As serious as all of this may sound, admitted Ben Gelb, organizer for this year's event, it also functioned as a chance for Wireless Society members to "eat lots of food, hang out and have a nice, relaxing time." It was also a chance to inform the public about the uses of short-wave radio, noted Gelb, a 20-year-old Massachusetts Institute of Technology student.

All of the transmitters on site were wired to a setup in one of the tents, where a running tally was kept of all the contacts made. There sat Gary Nelson, listening to headphones and tapping out Morse code. Gelb pointed out that both the outgoing and incoming code were translated into



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letters and numbers on the laptop screen where Nelson's eyes were trained. There, the call number K4XY was repeating endlessly. This was the identity issued by the FCC to Bernie Stuecker, a longtime Wireless Society member who died of a heart attack in April. In his honor, the entire camp was using K4XY as its call number this year.

Presently, Nelson made contact with a group in southern Florida. In order to count as an official contact, the two had to exchange call numbers and inform each other of the state from which they were transmitting and the class of their encampment. The Wireless Society's camp at Burke Lake Park was classified 4A — four transmitters running on "alpha" power, meaning the camp ran solely on emergency power from a generator, as wireless radios would in a true emergency situation.

The transmitters had been up and running for about two and a half hours, and already some 525 such contacts had been made.

Many members of the group have already participated in emergency efforts through their membership in the Amateur Radio Emergency Service (ARES), said Gelb. During Hurricane Isabelle, he and several others had staffed a Red Cross shelter set up at a middle school in Alexandria, where they had worked in shifts for three or four days.

"At the very beginning, communications were down," including phone lines and electricity, he said. "Then, it was just still easier for the Red Cross to let us handle communication."

In a real emergency, said Gelb, they would not be camped out in a park but would be staffing emergency operations centers and shelters like the one in Alexandria. ARES, he noted, has established relationships with not only the Red Cross but with the Salvation Army and Fairfax County.

He added that hams in the South had been involved in rescue efforts during Hurricane Katrina. "We're kind of like the last backup to all the backups that are in place," he said.

THE FOUR OFFICIAL TRANSMITTERS at the Burke Lake site were operating on the high-frequency spectrum, which is more effective for long-distance communication. One tent was transmitting on the VHF (Very High Frequency) spectrum, normally used for shorter-distance transmission. However, they had just made contact with Canada, a feat which Gelb said required "some fairly unique atmospheric conditions."

Mike Davis, one of the operators manning the tent, noted that activity on the six-meter band indicated the approach of foul weather. "That's how I can always tell at the house when lightning is coming, because six starts popping," he said. Indeed, the sky was darkening.

The six-meter band comprises radio waves six meters in length from one wave peak to the next. Davis is not alone in operating a transmitter from his home, said Gelb. "Most of us have stations set up at our house, and we get on and try to talk with each other," he said, adding that he had reached other ham users as far away as Australia on his home wireless set.

"Some people are into trying to reach faraway countries, some are just into building radios," he said.

In another tent, three operators were lined up in front of laptops, transmitting on the 40-meter spectrum, which reaches longer distances because it can bounce off the ionosphere and back down to earth.

"Now we're reaching about 1,000 miles," reported Lee Garlock, who was standing nearby.

"Hopefully, by nighttime, it'll open up all the way to the West Coast." He explained that during the day, the atmosphere separates into two layers that come together again at night, forming a better reflecting surface for radio waves.

This is why AM radio stations are required to reduce their power or go off the air after dark. Otherwise, they will interfere with each other.

More esoteric factors can also affect long-distance radio communication. Gelb explained that the number of sunspots on the side of the sun that faces the earth has an impact on transmission.

"More sunspots are generally better for business," he said. This is because they create more ions in the atmosphere.

For unknown reasons, he said, the sunspots increase and diminish on an 11-year cycle, which is now at its low end, making transmission slightly more difficult.

HAM RADIO USERS also help with non-emergency operations. A hundred or so hams help out at the Marine Corps Marathon every year. They look for downed runners and help with communications at aid stations and on buses, said Gelb, who wrote the interface program used at the marathon to allow wireless users to send information like medical reports from remote laptops over long distances to the database used by race managers.

Doug Ayers, another member of the Vienna Wireless Society, is also a member of Skywarn, a volunteer organization of trained weather spotters and ham radio users who report and describe severe weather to the National Weather Service.

"If it wasn't for the public service aspects, ham radio probably wouldn't exist," said Ayers.

Cell phone companies and others would like to use that chunk of the radio spectrum for their own operations, but the government has set it aside for the citizenry because of the assistance they can provide, said Gelb.

But making oneself useful is only part of the fun of ham radio.

"It's something you can do without your spouse," cracked Ayers, a mathematician in his late 60s, adding that hamming is also an accessible hobby for the aged. "And there's a social aspect to any hobby," he said, noting that his wireless social circle consisted of "technocrats" speaking a common language in which others may not be fluent.

He had always enjoyed electronics, said Ayers, and when he was young, his interest had been piqued by one of his neighbors who was a ham. He was licensed with the FCC in 1980, and prior to that, he had lived in Japan and operated his own radio there, where he could easily communicate with countries like Mongolia and Korea, he said.

"For me, it's pretty neat to know this group of people with an engineering and science background, or at least a strong interest," said Gelb. "I just always liked electronic things from when I was very small. I got licensed 10 years ago."

By 7:30 that evening, rain was beginning to fall and the sky beginning to rumble, and all transmitters had to be disconnected, because the antennas can act as lightning rods, drawing a blast that could destroy any equipment that was still connected to them, as well as injuring operators.

Gelb reported the next day that the camp had been operational again by 10 p.m., and three of the four stations had stayed on the air all night. Just over 2,000 contacts were made in total, which he said was likely fewer than previous years because of the meteorological interruption. Nonetheless, he said, "all in all, I think it was a success despite the weather."

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