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Amateur Radio Enthusiasts Happy to Adapt Hobby in Age of the Internet

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Less than a decade ago, amateur or "ham" radio was glamorized in movies and television as the ultimate communication tool— not only was it free, but it enabled people to strike up a conversation with someone from a far-off land who they'd never met.

It was static-filled childhood conversations with distant hams that inspired "Contact" heroine Ellie Arroway to later dial up aliens in that 1997 film.

And when marauding extraterrestrials threatened to wipe out humanity in the 1996 action flick "Independence Day" the obligatory ragtag band of heroes used amateur radio to communicate with Morse code signals, thereby thwarting attempts to listen in.

Heck, in the '80s sitcom "ALF," the titular character nearly outed his host family by using patriarch Willie Tanner's amateur radio to call Air Force One.

Then— in the mid-1990s, the Internet hit. Within a couple of years, communication with anyone, anywhere, was old hat. And, you might think, the days of futzing with kit-built radios, backyard antennas and arcane frequency allocations had come to a quiet close, like so much white noise after a lost signal.

But you'd be wrong.

Net results

"There are more hams now than there have ever been," says Michael Pendley, a Sandia National Laboratories engineer who in his spare time helps oversee the repeater station operated by the Upper Rio FM Club on the outskirts of Kirtland Air Force Base. His son, Stephen, is also a ham.

"The Internet hasn't replaced it— they've actually merged," Michael Pendley said.

Between 1980 and 1990, about 73,158 Americans applied for amateur radio licenses from the Federal Communications Commission. Between 1990 and 2000, some 215,730 new hams were minted. Today, according to the Connecticut-based American Radio Relay League, amateur radio's national association, there are nearly 700,000 amateur radio operators in the U.S., and an estimated 2.5 million worldwide.

But increasing competition for the radio signals they depend on— especially from wireless Internet and telecommunications interests— threatens to squeeze amateur radio operators off the dial.

Because of that, hams are quick to note the valuable, yet largely unseen services they provide.

"People don't know about the service provided back to the country for the use of these frequencies," says ARRL spokesman Allen Pitts. "We take that very seriously."

Complicated hobby

Ham is such an old pastime that its practitioners have largely forgotten where it got its name.

"Ham is not an acronym," Pitts says, dispelling a popular myth. "There are many theories as to where the word came from."

The most common etymology roots back to the days of telegraphy. Telegraphers used a sprung electrical switch to hammer out Morse code.

"Somebody that was sloppy would be called ham-handed," Pitts said.

The name stuck, even as telegraphy graduated from wires to wireless transmission, and Morse code was eventually replaced by voice.

There are several types of ham radio, depending on what a user wants to do. UHF or VHF radios, which can be bought used for less than $100 or built from kits, have a 30- to 60-mile range. More powerful lower frequency HF sets can broadcast farther— even around the world, if conditions are right.

Such equipment can run into the thousands of dollars, depending on how advanced a ham wants to get.

Any amateur can tap into a repeater, like the one the Upper Rio FM Club maintains, which can then send signals over much longer distances.

Amateur radio operators can also tap a network of satellites that can extend their signal range, or bounce signals off the ionosphere or even the moon.

Contrary to popularly held belief, amateur radio is not just about chatting into the wee hours with strangers on the other side of the globe.

"It's like 1,000 hobbies in one," said Mike Eaton, a Sandia National Laboratories radio systems engineer who got into amateur radio about six years ago. "It's hard to categorize."

Many hams focus on racking up brief contacts with other operators in different states or countries, often exchanging only first names and call signs— a series of letters and numbers issued by the Federal Communications Commission upon issuance of an amateur radio license.

Others, like Eaton, enjoy the challenge of homebuilt electronics.

"I like building a good radio station at my house that I can use to contact people around the world," says Eaton, who also has an elaborate system in his car, and can claim 189 contacts with hams in other countries.

Freeman Pascal, a software designer for Las Cruces-based Rhino Corp., credits his fascination with space and satellites for his introduction to ham 25 years ago.

"Anyone can do this, it's not unobtainable by anybody," he says, describing how he uses simple, low-power radios, with signals sent via satellite to other countries.

Pascal recently learned some German to talk to an overseas ham.

"He was very pleased I made the effort," he says.

Emergency
communication

Though invisible to the public at large, it is amateur radio's contribution to emergency services that helps hobbyists hang on to their coveted frequencies. Hams in cars, homes and on foot often form the backbone of communication in rural areas, even mountain rescues in the Sandias, where mobile phones don't work.

When the tsunami hit Southeast Asia in December, destroying public communications networks on parts of several countries, it was a massive network of amateur radio operators that kept first responders informed in the early rescue efforts.

Similarly, when a catastrophic forest fire began devouring Los Alamos homes in May 2000, a huge network of hams immediately leapt into action, aiding firefighters, emergency crews and others in the fire's early hours.

"There were hams at all the roadblocks, all the hospitals— I don't think the general population really understands how much amateur radio operators donate to New Mexico," said Bob Rieden," of the New Mexico Search and Rescue Support Team, which supports the New Mexico State Police and other agencies. "We're unpaid professionals. Ham fills in the backlog until other systems are back up and running."

Local hams also provide volunteer communications for events like the annual Duke City Marathon.

Hams regularly meet to swap techniques and gear, and participate in contests and other activities.

They also form ad hoc governing bodies to self-monitor the amateur airwaves for verboten activities, such as broadcasting music.

Despite all the communications advances of the last century, none are as reliable as radio, Rieden said. Clubs around the world, using money donated by members, corporations or even, in some cases, government agencies, have built a massive, privately operated network of repeaters, making it

easy for home radio operators to connect to the airwaves.

"You'd be hard pressed to find any place in the country where you couldn't get into an amateur repeater and make contact," he said.

Enter the online age

But over the last 10 years, using as its framework the world's existing telephone systems, costly new networks and now, even radio waves, the Internet has spread its tendrils to nearly every corner of the globe, making instant communication by text, pictures and even voice accessible to all but the most remote populations.

However, even as the Internet has become the world's ubiquitous communication tool, ham radio has continued to flourish, say hobbyists.

"The Internet has brought virtual groups together," Eaton says. "It's probably been a shot in the arm for amateur radio."

Indeed, though the basics of ham radio have changed little from when the first such transmission was sent in 1909, the Internet has come to play a role in every facet of the hobby. For instance, some ham operators, rather than moving up to more expensive radio sets with longer distance capabilities, have found they can turn the signal into data and transport it over the Internet as data to some distant location, where it is turned back into a radio signal and received. Others use a combination of amateur radio, Global Positioning System units and the Internet to track signals on laptop computers— a synergy that has proven indispensable, especially to emergency support operators.

"Hams have always been known for adapting technology for their own purposes," Pitts says.

As it has effected many other hobbies, the Internet also shortened the learning curve for new hams by providing a vast array of how-to information and equipment for sale.

Still, most hobbyists admit that getting kids interested in the hobby— even with the myriad Internet tie-ins— is difficult.

A 2004 survey by a ham radio magazine found 43 percent of licensed hams were retirees, with only 3 percent below the age of 35.

"With my four kids, it's hard to pull them away from video games," says Pascal.

Pendley, who helps Boy Scouts obtain radio merit badges in hopes of landing a few converts, agrees.

"The Internet is real seductive to kids," he says.

ARRL has a massive outreach program targeting schools, scouting groups and other childrens' activities, called, unofficially, the Big Project.

Ham, with its elaborate dependence on everything from sunspots to daily changes in atmospheric conditions, "is a great way of using applied science and math to show the value of education," Pascal says.

Ultimately, he posits, nothing will ever replace the camaraderie and even cultural exchange derived from radio conversations.

"It's the average man talking to the average man— getting to know what life is like over there," he said. "The Internet doesn't facilitate that kind of communion. There's nothing like the human voice to convey meaning.

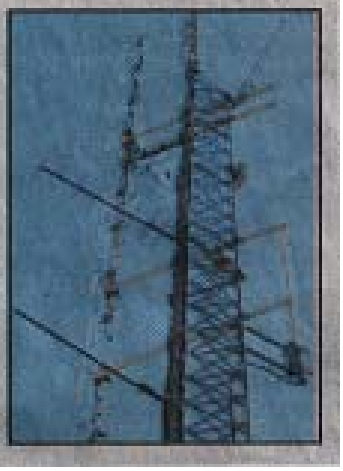
"There's a magic to that."

amateur radio tower contains a number of different antennas to receive different frequencies. This tower is at the Upper Rio FM Society's S
at Albuquerque repeater station.

A computer is used to integrate a ham radio with Global Position Systems, or GPS, to show the location of mobile radio units on a city map. This is one of several ways the much newer Internet and the 100-year-old practice of ham radio have merged.

Bob Rincon, of the New Mexico Search and Rescue Support Team, staffs the ham radio in the team's trailer. When disaster strikes, amateur radio operators are often the only means of communication for first responders.

HAMMING IT UP:
Amateur radio hobbyists still on the air despite increasing competition for signals.



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