

Possible role of radio problems in Cedar fire under scrutiny

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November 8, 2003

When firefighters went face to face with the most destructive wildfire in California history, their most reliable method for communicating with each other may have been shouting. Among the post-mortems being conducted by fire officials is whether any of the more than 2,200 homes lost to the Cedar fire were destroyed because of communications challenges.

Mismatched radio systems left U.S. Forest Service crews unable to talk to their counterparts in other fire agencies. Some firefighters resorted to palm-size Family Radio Service devices that sell for as little as \$25 apiece after the failure of their regular radios, which cost thousands of dollars each. At times, supervisors had to leave their crews in trucks parked in the field and drive back to their base camp to get instructions because they couldn't reach anyone by radio. Some out-of-town "strike teams" that were supposed to have radios "cloned" to enable them to talk to commanders never got them. Radio "repeaters," transmitters normally placed temporarily on mountaintops to give firefighting radios extended range, couldn't be installed because helicopter pilots couldn't cope with the Santa Ana winds and smoke over the mountain peaks. Combined with overused cellular telephone channels and even cross-border radio interference from Mexico, those factors helped turn firefighting communications into an intermittent nightmare.

For San Diego city firefighters, the problems were even more fundamental " and more frustrating. Crews found themselves unable to talk to anyone when their radio batteries went dead, and there were neither fresh replacements nor battery chargers available. Whether any of these problems led directly to the loss of homes has not been determined.

"I haven't heard from all our people yet, but at this point I wouldn't be comfortable saying absolutely that it didn't," said Jeff Frazier, operations chief for the San Diego Fire-Rescue Department.

Many of the problems were not one-time glitches, but chronic ills that have beset firefighters for years, problems that will take time " and millions of dollars " to fix. It's not the first time communications have been an issue during a major fire in San Diego County. Similar woes and worse occurred during the 1970 Laguna fire. It led to a rethinking of the fire command structure and changes in protocol.

"Back then, we had fire departments across the street from each other who couldn't talk to each other," said Brian Kornegay, communications team leader on the Cedar fire for the California Department of Forestry and Fire Protection. Kornegay downplayed the severity of communications problems during the Cedar fire. "We had one of our mobile repeaters get burned over on Cuyamaca, which basically knocked it out, but we had two others we were using," Kornegay said. "Communications wasn't really a problem." Not everyone saw it that way.

Jim McGuire, a CDF contractor responsible for radios and repeaters during the fires, said getting temporary communications equipment into place on the second and third day of the Cedar and Paradise fires was difficult because helicopters couldn't fly in the heavy winds and smoke.

Chris Hinshaw, operations chief for the county Sheriff's Department's radio system, said problems were especially pronounced when Forest Service fire crews and out-of-town strike teams tried to talk to each other over old VHF radios. "We had a lot of 'busies' reported by firefighters during both the Cedar and Paradise fires," Hinshaw said. "None were for longer than 19 seconds. It's not a huge problem, but 19 seconds in an emergency can be an eternity."

Gil Garcia, the Cedar fire's incident communications commander, who works for the Los Angeles County Fire Department, said many of the problems were expected. That's because local agencies are constantly upgrading radio systems and often don't coordinate with other agencies in the area, for reasons from cost to convenience.

Many agencies have gone to an 800-megahertz system, which has an expanded number of channels, but others have not. What's more, not all 800-megahertz systems are created equal. Some are analog while other are digital, which puts their signals at opposite ends of the radio-wave spectrum, making them incompatible with each other. Attempts have been made over the years to get around the jumble of different systems. The CDF and the Forest Service, for example, use basic radios that other agencies can clone, or reset their radio frequencies so they can talk to each other.

"Resources that come from all over the state come with radios to be cloned," Garcia said. Typically, fire crews start out at a base camp, cloning their radios to the proper frequencies or checking out radios that can be cloned to communicate with fire officials. But there can be problems even with cloned radios. If the person talking is too far from the person listening, a radio may not work. Topography also can be a problem. To be able to transmit, you have to be in the line of sight of a repeater. If you're below it, you're out of luck.

Other hindrances include dense smoke " "Smoke puts ions in the air, and that causes communications problems," Garcia said " and user error, especially with unfamiliar radios. Even when other fire departments are using the 800-megahertz systems similar to those used in San Diego, those systems are not always entirely compatible. "If, say, Orange County (fire units) come down here, there's only a handful of radio frequencies we can work on in common, and that's a challenge," Frazier said. The 800-megahertz radios can be made compatible, but some crews went straight into action without doing so, fire officials said.

Cell phones proved to be valuable backups, but they were overloaded pretty quickly. "When we're busy on cell phones, the public's usually busy on cell phones, too," Frazier said. "It's difficult to get a signal because there's other people saturating the system."

Firefighters weren't the only ones being challenged. Dispatchers were having problems as well. Just as firefighters sometimes couldn't connect their radio

networks, computer-driven dispatch systems for different agencies couldn't "talk" to each other, forcing dispatchers to trade information over the phone.

Help may be coming from Washington. The Justice and Treasury departments have a joint project under way whose goal is "seamless, coordinated and integrated public safety communications" at every level of government. It's called the Public Safety Wireless Network, and its director, Tim Ritter, is coming from Virginia next week to help regional officials determine what San Diego County needs to enable old and new fire radio networks to link together more smoothly.

The San Diego Association of Fire Chiefs has its own communications committee looking at the problem. "San Diego County's regional communication system has a pretty good core working group," Ritter said. "I know they're close to a solution. We hope to have it in place by January or February."

What no one is saying yet is what the improvements are likely to cost. The Public Safety Wireless Network estimates the tab for replacing public safety radio equipment nationwide to be at least \$18.3 billion.