

01-02

Alberto Bastida:

Missing article from Ann Hargrove's submission on the towers case.

27/11/55

**ZONING COMMISSION**  
**District of Columbia**

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Exhibit 112



USATODAY.com

## Tech

01-02

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## Cell phones drowning out police radios

By Paul Davidson, USA TODAY

WASHINGTON Ñ "One Adam 12."

"Car 54, where are you?"

The police radios that popularized those refrains on TV cop shows worked as reliably as quartz watches. In the real world, such dependability can be a matter of life and death.

"That's your lifeline; that's just a given," says Kansas City, Mo., detective Robert Blehm, who took that popular image to heart.

But as Blehm and his partner, Derek McCollum, ran after a drug dealer at 4 in the morning on Sept. 18, 1996, they got dead air when they tried to call for backup on their new handheld radios.

As they cornered the suspect, he shot them both. Blehm Ñ lying in the street, blood gushing from his shattered right leg Ñ tried calling again. Again nothing.

Finally, McCollum, shot in the chest but still able to move, stumbled up the street until he found a clear signal and summoned help.

The shooting victims were also victims of progress. The once-dependable police radio is literally being drowned out by a torrent of information-age services, such as wireless phones and instant messaging, that have made mobile communications available to millions of Americans. Even as police, fire and emergency medical services upgrade to pricey new radio systems, dozens of agencies Ñ including those in Seattle; Portland, Ore.; Denver; and Miami Ñ face increasing interference from more powerful commercial wireless services.

"This is a very big problem, and it's going to get worse" as cellular's customer base grows, says Ron Haraseth of the Association of Public-Safety Communications Officials.

In Tigard, Ore., recently, police twice were unable to radio for backup while facing armed suspects because of cell phone interference. Part of the problem is the fact that Kansas City's police force and others, beset by tight budgets and poor planning, have been unable or unwilling to build sufficient infrastructure to support their new, but more terrain-sensitive systems. And



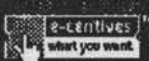
Tim Dillon, USA TODAY  
Towering conflict: Police officer Joe Hatcher of Anne Arundel County makes a radio call in the shadow of a cell phone tower. The Maryland county has eight radio "dead spots" near such cell towers.

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many agencies simply find their new, feature-rich radios tougher to use and more prone to breakdown.

In the 1960s and 1970s, "there weren't as many users, and systems were simpler," says Chuck Jackson of Motorola, the top maker of emergency-service radios. "There was a microphone and a speaker, and you talked over it."

Some officials blame the Federal Communications Commission, which supervises the airwaves, for not doing more to head off the current traffic jam. And experts say the FCC's plan to divvy up a new band of radio spectrum N ostensibly to fix the problems N may just replicate current congestion.

FCC critics, moreover, say that the agency, under pressure to wring as many billions of dollars as possible from auctioning airwaves to commercial carriers, gives second-class consideration to public-safety agencies that get the spectrum for free. The FCC says it balances both interests.

However the blame is shared, the bottom line at street level is that the ongoing glitches have caused an untold number of close calls, at least a few injuries and may have contributed to the death of a police officer.

"It could mean life or death to police officers, firefighters and even citizens who are not able to get prompt emergency service," says Harlin McEwen, a retired police chief who handles telecommunications issues for the International Association of Chiefs of Police.

Public-safety radios traditionally worked in the relatively uncrowded 400-megahertz frequency band and lower. Interference was rare and came from taxis and other services on nearby channels, whose conversations were brief.

But as metro populations swelled, police, fire and medical agencies lacked enough channels to handle growth in their own ranks. The sprawl also complicated another concern: Departments typically cannot communicate by radio with neighboring agencies whose equipment works on different frequency bands. This still is a nationwide problem during major fires and other disasters involving multiple jurisdictions.

To fix both problems, a growing number of agencies across the USA the past decade have been upgrading to new equipment that works in the 800-megahertz band, which has more capacity and allows more features. And neighboring communities often move there in tandem, so they can communicate with each other.

### **Fix breeds new problems**

But that slice of spectrum is the same space occupied by the exploding wireless industry. And it brings its own headaches:

- **Wireless interference.** Much of the commercial interference with public-safety radios comes from cell phones. And, for historical reasons, the cell phone company causing the most problems is Nextel Communications.

Until recent years, Nextel operated a mobile radio service for taxis, truckers and others. In the 1970s, the FCC interlaced Nextel's channels with those of other mobile radio services, including public safety. It did so because it thought each organization's channels were more vulnerable to interference

from its other channels than from someone else's channels.

It's not clear whether this belief was correct. The FCC had few resources for testing back then. But the legacy is that in each market, dozens of police and fire channels abut Nextel channels. For years, the layout caused few problems because both Nextel and public-safety agencies used a radio system design: a handful of towers on hilltops beaming wide-area signals.

### Cell phones create coverage gaps

But in the mid-1990s, Nextel morphed into a national cellular phone company, which required it to dot cities with dozens more towers. The result is that its transmissions now can overwhelm relatively weak public-safety systems on nearby channels and create coverage gaps that can reach a mile, especially near cell towers.

Other wireless phone providers, such as AT&T and Cingular Wireless, also cause interference. But because their channels were granted in separate blocks, they wreak havoc only where they meet public safety's block. "In almost every region of the country we're hearing complaints," says Mike Hunter, president of engineering firm RCC Consultants.

In Anne Arundel County, Md., police officers are plagued by eight "dead spots" where Nextel and Cingular have towers. The problem came to a head last year when an officer stopped a speeding car and could not reach dispatch. As he wrote out a ticket, another officer stopped to warn him that the driver was a shooting suspect.

"It was getting to where officers, who are pretty courageous, were starting to get very uncomfortable," says Anne Arundel Police Chief P. Thomas Shanahan. The county recently agreed to buy a new \$15 million radio system.

In Phoenix, Nextel transmitters hamper the police radio data system, which does background checks during traffic stops. "Certainly people guilty of crimes have been let go because the officer couldn't get through," says radio manager Melvin Weimeister.

In Portland, Ore., Nextel's system, which has 80 towers in the area vs. the county's 14, "is like the biker gang that moved next door, banging and raising hell," says Joel Harrington, who handles city communications there. Officials are considering a more robust \$50 million radio network, he says.

Most of the time, the interference means hassles rather than disaster: Officers must travel farther to get a signal, carry cell phones and bring backup when entering static-prone areas. And Nextel, officials say, has been a good neighbor, agreeing to switch channels, reduce transmitter power and sometimes even move towers.

"We take reports of interference with public safety very seriously," says Larry Kervor, Nextel's vice president of government affairs. But the company, he says, is "fully in compliance with the FCC."

The FCC, in turn, says that years ago it simply did not anticipate Nextel's cellular service.

Remedial measures are of limited value, says Tom Eckels, an engineer with

consultancy Hatfield & Dawson. A long-term solution would be to move Nextel and public-safety channels into separate blocks. But it would take huge sums to reprogram equipment. Many towns couldn't afford it.

Portland and other cities are considering moving to the 700-megahertz band to be vacated by UHF television stations as they switch to digital broadcasting. But radio equipment for that band won't be ready until mid-2002.

And some experts contend that the FCC's new plan for that band will make it just as crowded. The agency first designed the 700 band with public safety in its own block and more space between that block and other wireless carriers. But the FCC revised the plan last year, and critics say it now allows carriers to operate powerful transmission towers in channels that are too close to public safety.

"It's a significant concern," says Steve Sharkey of Motorola, which asked the FCC to reconsider. The FCC turned it down, saying interference should not be a problem.

McEwen of the police chiefs group charges, "The FCC changed the rules to get more money from auctions, but they're putting public safety at risk."

Tom Sugrue, chief of the FCC's wireless bureau, replies, "That's just wrong." He notes that "radio spectrum is a limited resource that everyone wants" and that the FCC must balance competing needs.

- **Need for more towers.** Although radio signals in the 800-megahertz band are clearer, they typically don't dance around hills, trees and buildings as deftly as their predecessors. They also have more trouble penetrating big new, reflective-glass buildings.

The solution is to build a bigger network. But budget-conscious cities often don't realize or want to accept that upgrading to 800 megahertz requires adding many more towers than their older systems needed, RCC's Hunter says.

In Kansas City, officials decided: "This is how much we want to spend, and this'll do," says Bob Lawrey, communications manager for city police.

The city recently had to enhance its new 800-megahertz, \$18 million system with \$10 million worth of additional antennas.

"I was pretty upset that they expected us to do this job, and they gave us substandard equipment," says Blehm, 29, the wounded officer who has settled a lawsuit against his assailant, the city, the city's radio consultant (SFA) and the maker of the radios (Ericsson).

Assistant City Manager Rich Noll said officials thought the original network would be sufficient.

Orange County, Calif., installed an \$80 million radio system last year. But the system design did not adequately account for the area's maze of malls, apartments and offices.

Recently, as a SWAT team searched for a suspect in an Irvine office building, Orange County officers could not radio colleagues outside to let them know the team was coming through the door. The county is now debating more antennas.

In Delaware, firefighters often resort to blaring sirens to let colleagues know that a blaze is spreading or a floor is caving in. That's because Delaware's new \$52 million, statewide radio system doesn't work in five communities, including tourist hotbed Rehoboth Beach, or in large buildings. Motorola has agreed to add signal boosters at no cost, and the state will spend \$10 million to improve performance inside buildings.

### Police officer shot to death

Problems turned tragic in Atlanta. In 1997, as two officers responded to a domestic dispute, the man became aggressive. Officer Patricia Cocciolone says she tried to call for help, but her radio didn't work. The man emerged with a rifle and critically injured Cocciolone. He killed her partner, John Sowa.

Chip Warren, vice president of the police union, says the city has balked at spending to add antennas to its \$39 million, 6-year-old system. "This is putting troops' lives in danger."

Atlanta Police Maj. Bill Gordon says the problem is not widespread and says Cocciolone's radio worked, contrary to her testimony and media reports.

Experts also note that every radio system has dead spots: buildings, low spots and other nooks where signals will not reach. Says Eckels of Hatfield & Dawson: "Nobody ever can afford to build the perfect radio system."

- More complicated equipment. New 800-megahertz radios sport fancy features, such as emergency buttons to alert dispatchers to trouble and automatic scanning for an open channel.

But some officers have had trouble using them. Before, they searched for open channels themselves, listening to colleagues' conversations as they scanned. Now, if the airwaves are busy, they hear a beep and must wait for a channel. "We've had officers frustrated during a shooting because they get a tone," says Portland Assistant Police Chief Bruce Prunk.

A Kansas City dispatcher, bewildered by a new 60-channel radio, responded on the wrong channel to firefighters calling for hoses, forcing them to jump out a first-floor window to escape a blaze.

Though time and training should ease many of these concerns, the feature-packed new radio systems are also more glitch-prone.

"The systems are full of controllers and microprocessors and software," Hunter says. "There's a lot more to go wrong."



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