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Friday, October 31, 2008 |

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Public safety personnel concerned about digital radio transition

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By [LINDSEY HENLEY](#)

WSLS10 Reporter

Published: October 30, 2008

In an emergency, Roanoke City Deputy Fire Chief Billy Altman says good communication is key.

“We don’t want to be on the news for having a line of duty death,” Altman said. “That’s nothing anybody wants, and the radio system is a big key with preventing that.”

Franklin County Fire Marshall Bennie Russell agrees.

“Communications is a life or death situation—especially in fire and rescue when you’re dealing with the unknowns,” Russell said.

Virginia firefighter Kyle Wilson, 24, found himself right in the middle those unknowns back on April 16, 2007.

That morning, Wilson and his crew were called to a house fire. Not long after Wilson went in, he used his radio to call for help. Those were his very last words.

Hundreds turned out for Wilson’s funeral, and the Prince William County Fire Department vowed to figure out what went wrong.

A 382 page report details many different things that contributed to Wilson’s death including communication — specifically problems with the county’s digital radio system.

Like here at WSLS, many fire and other public safety departments across our area are being pushed to switch to new systems. That’s because just like TV’s and cell phones it is supposed to be clearer, can transmit more information, and eventually will be less expensive.

By 2013, the FCC is requiring all public safety radios to do use less bandwidth and the best way to do that is by going digital.

Dr. Charles Bostian is a Virginia Tech researcher who's working with his students to develop cutting edge radio technology.

"Digital transmission saves a lot of radio spectrum," Bostian said.

Franklin County's 911 coordinator says they recently switched to digital.

"There's a lot of things we can do with a digital system that you could not do with an analog," Bill Agee said.

But they've also run into some problems.

"We have found holes in our system where we can't talk very well. There are different holes than we had with the analog signal and we don't know why," Agee said.

That's one of the reasons Roanoke City is still carrying the old analog radios.

Money is a big factor, but talk of problems with the new technology has held the city back as well.

"There's still that doubt in everyone's mind about the digital," Altman said.

One of the doubts has to do with the digital signal. Basically, when you're using an analog radio the signal fades as it gets weak. But just like your TV, a digital signal is either 100 percent there, or it is not.

"That's an inherent problem with digital systems. They either work very well or they don't work at all," Bostian said.

Bostian says background noise is another problem with digital radios leading to garbled messages and miscommunication.

"If a person listens to somebody talk while they're standing next to a pump truck, the human brain can identify the voice and can understand what's being said. Digital electronics isn't quite as good at doing that," he said.

"That can cause a big problem, because the guys if they're inside a house and they have an emergency and they call mayday firefighter down, you may only have one chance to answer that or hear that," Altman said.

The International Association of Fire Chiefs (IAFC) formed a group to investigate digital radio problems. Ten On Your Side asked the group whether our public safety people are putting their lives in danger by using digital radios.

"That's a very difficult question to answer with specifics," Charlottesville Fire Chief Charles Werner, chair of IAFC group, said. "Let me say this, there is no question the future of public safety communications is going to be digital communications."

But if problems exist, is the transition premature? The FCC says no.

“We believe that is ample time for the transition to occur,” FCC spokesperson Robert Kenny said.

But the FCC admits firefighters have been concerned about the requirements.

“We understand there are some concerns,” he said. “We are working with them to resolve it.”

In the meantime, digital radio experts in our area continue to trouble-shoot problems with the new radios before the deadline.

Reader Reactions

Posted by (wernerc) on October 31, 2008 at 7:28 pm

The issue of digital radios is complex. To fully understand this critical issue, please visit the International Association of Fire Chiefs website for the full report and best practices presentation at: <http://www.iafc.org/digitalproblem>

Thanks,

Charles Werner, IAFC Digital Project Working Group Chair

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Posted by (Meadow) on October 31, 2008 at 9:34 am

As the telecommunications specialist for a federal disaster response team, I as well have concerns over digital radios. I have no plans of changing my team from the radios that we already have. While it is true that digital radios require less spectrum and because they are digital can be encrypted for security, they come with a cost both financially and in a lack of fidelity. I can buy 10 standard high quality radios for the cost of ONE of the new “Project 25” compliant units. Also, I personally find digital radios harder for me to understand because there is not as much of the voice quality that is transmitted. While I do think there are areas where digital transmissions can be of great value, especially for sending data, I will be slow to consider it for voice.

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