800 MHz – The FDNY Questions

By Captain Mike Worrell, Phoenix Fire Department

In the aftermath of September 11th, many questions have arisen about communications difficulties that were encountered. Reading many of the articles the term communications was not limited to radio technology. Many communications were procedural and operational. Since we are in the midst of a large-scale radio system change, the communications problems encountered in NYC were looked at from a radio technology standpoint.

In March 2001, the Fire Department of New York made an attempt to switch to newer digital technology. While these radios were digital, they were not trunked. The department remained on their old frequencies but switched to digital radios. This can be likened to switching from analog cell phone service to digital. The department did minimal training, and the radios acted differently than the old analog radios. Since the users had minimal training, they were not aware of some of the operating characteristics of the new radios. Users soon complained of poor communications. After one week in the field, the digital radios were pulled from service. The New York Fire Department conceded that they had moved too fast in an effort to get the radios into the hands of the firefighters. The commissioner stated that the core problem was the failure of the fire department to properly train the firefighters about the characteristics of the new digital technology. These radios were reprogrammed back to the analog mode. The digital mode has not been utilized since March 2001.

It was also reported that communications were so poor that when a city engineer said the buildings were at risk of imminent collapse, a runner had to be sent to notify the ranking fire chief. What was not mentioned is that the chief who received the report was Chief Peruggia of the EMS Bureau. The EMS Bureau does not have the same radios as the fire department. The only options the chief had were to send a runner or obtain a fire department radio so that he could notify them of the buildings' conditions. This was an inter-operability problem between city departments.

When the aircraft hit the Trade Center, a radio repeater was destroyed. This repeater had been installed on the tower to improve radio coverage in the area. This resulted in diminished radio coverage. To what extent this contributed to loss of life can only be guessed. It was reported that many did not hear the order to evacuate. The loss of a repeater could be a contributing factor.

Key points as they relate to a trunked radio system:

1. Digital technology was not a factor. The digital radios were removed from service. The problems encountered in NYC are not comparable to the system we will have in Phoenix. A computer will act as a traffic cop – allowing only one user to talk at a time. The fire department is planning a detailed training program so that our users will be proficient and comfortable in the operation of the new radio system.

2. Radio communications inter-operability caused difficult communications between departments. The new system is designed with a focus on interoperability. All city departments will be on the new system, and this will give us the ability to talk to each other.

3. The loss of a repeater caused degradation in radio coverage. This could be why some FDNY firefighters did not hear the order to evacuate. The new system will have eight repeater sites in the Metro Phoenix area. In the event one of the repeaters is lost, there will not be the drastic change in coverage as experienced with less repeaters in New York.