Purchasing

Safety Communications Headsets

FIRECOM™

Communication

With communication routinely identified as a practice firefighters need to improve, the evolving design of two-way communication systems allows for more complete access to information from the moment a call is dispatched until emergency responders are safely back at their department.

When the U.S. Fire Administration issued a special report addressing communication issues, researchers found that problems such as the use of unsuitable equipment (buttons too small to operate while wearing gloves) and durability (radios that can't stand up to extreme conditions) were major contributing factors that compromised safety. [1]

The National Institute of Occupational Safety and Health (NIOSH) conducts independent investigations of firefighter injuries and deaths. In recent years, deaths have numbered between 80 and 100 per year in the line of duty.[2] Additionally, the National Fire Protection Association (NFPA) analyzes injuries in the line of duty, and found 68,065 injuries in 2015. [3] A majority of NIOSH reports highlight how communications were either nonexistent or poorly managed, directly leading to death or serious injury. These same reports consistently recommend replacing or updating communication systems – and routinely training firefighters on their use – as one way of improving communications and outcomes.

Modern communication technologies allow firefighters to learn as much as possible prior to arriving on the scene. Incident commanders can start to strategize immediately, and dispatchers can share information as it becomes available. Systems equipped with noise-cancelling microphones that pick up voices, but not background noise, allow for a constant flow of information, and firefighters can speak at normal volume levels without having to shout to be heard. Most importantly, up-to-date and ergonomically designed radio technology allows firefighters to communicate in a fireground situation and get help when they need it.

This white paper will examine three areas where fire departments are integrating communications technology into everyday practices to facilitate the exchange of information, protect firefighters, and enhance their skills. Improved communication during emergencies allows firefighters to learn as much as possible about the situation they will face prior to arriving on the scene and to get help when they need it. Easier communication during training exercises allows instructors to be in constant contact with firefighters, correcting mistakes immediately. And improved communication during routine maneuvers, such as backing a fire apparatus out of a tight spot, protects firefighters, equipment, and property.

Communication In Emergencies

Numerous factors can impact firefighters' ability to communicate with dispatch, incident commanders, the public, and with each other when responding to calls. En route to an incident, engine noise and sirens drown out radio or cell phone conversations and make direct person-to-person conversation difficult. On location, engine noise and pumps contribute high levels of additional sound to the scene. Terrain and remote locations can hamper radio communications, and situational noise can distract firefighters from their tasks.

"For us, speed is everything," says Fire Chief Vince Stafford of the Molalla Fire Department (MFD) in Oregon. Located southwest of Portland, this fire department covers approximately 300 square miles of territory that includes a small city, rural areas, and remote wilderness, along with two interstate highways. The department also provides automatic and mutual aid to five neighboring districts.

MFD needs information flowing to firefighters by the time the rig leaves the fire station so they understand the situation and are prepared when they arrive. "Response time is very important -- no one wants to be on the other end of that phone waiting for help to get there," said Firefighter/Paramedic Jamie Wakefield. Because of the large and varied territory MFD covers, firefighters find themselves running back-to-back calls 40 to 50 percent of the time. Hands-free, two-way communication means they can start to assess the situation with a new call while packing up gear and tools from the first one.

Without up-to-date systems, that communication becomes nearly impossible. While today, MFD equips drivers with two-way headsets that allow them to stay in contact with dispatch and communicate that information to other crew members, Lieutenant Byron Wakefield recalled that, in the days before his crew had access to noise-cancelling headsets, communication became nearly impossible while the rigs were on the road. "You missed the communication unless you were screaming," he said.

Outdated technology has been specifically cited as a contributing factor leading to firefighters injuries in fireground situations. A specific injury report included in the NFPA's analysis of firefighter injuries calls out antiquated communication technology as a factor in mayday calls going unheard, creating a delay getting the firefighter and his partner out of a fireground situation. [4]

"When it comes to the end of the day, communication is what matters,"

– MFD's Jamie Wakefield.

Communication in Training

Improved communication allows trainers to be in constant contact with firefighters, correcting mistakes immediately and improving the efficiency of training exercises. And during training, firefighters can keep in touch with dispatch and officers when there is an emergency.

Many departments use two-way radio technology during driver training exercises. While educating firefighters to drive tiller trucks, instructors guide drivers as they navigate a pre-set route through cones and pylons used to represent real-world obstacles. “What we want to do is train them to be efficient, but more important, how to drive this apparatus safely as they navigate through their district or their response area,” said Steve Crothers of Seattle Fire Department, who trains other departments on safe aerial-drawn tractor driving. Using communication headsets, drivers can ask questions, ask for advice, and discuss mistakes in real time, improving their understanding of operating these unique vehicles. The result is improved safety on the road for firefighters and the public.

Two-way technology also allows easier communication while training with noisy tools such as saws or extrication equipment. Noise-cancelling features can reduce outside equipment noise and allow instructors to provide immediate feedback and instruction.

Communication in Routine Activities

The Molalla Fire Department responded to 2,994 calls in 2016, including medical emergencies, fires, motor vehicle accidents, water rescues, and high-angle rescues. With the engine driver equipped with a wireless communication headset, other firefighters acting as spotters are able to guide the truck through tight areas, preventing damage to the apparatus as well as property. “From a risk management perspective, it’s fantastic,” said Chief Stafford. Improving communication while maneuvering the truck in and out of challenging locations has reduced the department’s number of near misses to near zero.

And improved communication during routine maneuvers, such as backing a fire truck out of a tight spot in a newly constructed neighborhood protects firefighters, equipment, and property.

Solutions for Safety Communications

With nearly 30 years' experience providing communications technology for fire departments and other first responders, Firecom understands the major issues around the changing technology of emergency communications systems, as well as the finer details that make headset communication systems more comfortable to wear and easier to use.

The IAFF's Contributing Factors to Firefighter Line-of-Duty Death in the United States made numerous recommendations to improve firefighters' safety. Among its many recommendations, the report specifically called out equipment that allows for real-time communication both via radio and face-to-face conversation. [5]

Firecom is the only manufacturer to offer listen-through technology on its third generation wireless headsets. This feature immediately improves firefighters' situational awareness and personal safety, but it can also reduce the feeling of isolation created by equipment that only allows firefighters to hear conversations through their headsets. This feature was developed based on feedback from responders who need to monitor radio traffic as well as talk with patients in an EMS situation, hear road noise and other situational sounds, and communicate with the public. Firecom's listen-through technology also recognizes that veteran firefighters have some degree of hearing loss, so listen-through volume can be easily adjusted for each firefighter's level of hearing, as well as protecting their existing hearing by automatically limiting noise above 82 decibels.

Firecom recommends the UHW505 (wireless under-helmet) or UH-51 (wired under-helmet) headsets for all crew positions that need two-way radio transmit capability in addition to hands-free intercom. The UH-52 (wired under-helmet) headset provides the same high-quality audio in an intercom-only version. For commanders, Firecom makes the UHW507 (wireless under-helmet) with all of the same features as the UHW505 in addition to Bluetooth technology for the ability to communicate over any Bluetooth-enabled device, creating an additional private communications channel. Both the UHW505 and UHW507 include listen-through technology and electronic noise cancellation.

UH–51

UH–52

UHW505

UHW507

All Firecom wireless headsets can be connected directly to a portable radio in situations that require it through a readily available cord. 500-Series wireless headsets also include a field-replaceable battery, allowing users to change batteries as needed. Batteries charge inside the headset while connected to apparatus power.

Both wired headsets feature a connecting plug that is easy to grasp with a gloved hand and swivels to adjust to strain at the connection. A glove-friendly push-to-talk button allows radio transmit (UH-51) or full duplex intercom communication (UH-52) and listen-only mode when not engaged.

Firecom 500-Series wireless headsets provide an enhanced noise-cancelling microphone on a flexible boom protected by a layer of waterproof material for outdoor use. Comfortable foam ear seals on all Firecom headsets deliver effective passive noise reduction. Wired headsets offer IP-65 and 500-Series wireless an IP-66 rating for dust and water protection while worn.

To help fire departments protect their investment, Firecom offers ruggedizers, colored silicon covers for the ear cups on 500-Series wireless headsets. The headsets are designed to stand up to hard use – there are no external antennas and only glove-friendly
buttons on the headsets; they are guaranteed to work in a wide range of heat and cold (-40°F to +158°F), and they are water-resistant – but the ruggedizers offer additional abrasion resistance. Departments can also color-code headsets by the user's role, choosing one color to identify crew, and another to identify commanders.

Input from customers also helped Firecom develop multi-radio intercom technology, allowing departments to transmit and receive on up to four two-way radios simultaneously. A waterproof remote head unit, which can be installed anywhere on the apparatus, allows engineers to switch radios without having to return to the engine compartment.

Firecom understands the importance of keeping crew on the ground where they are needed and constantly takes steps to help it customers save time and lives through enhancements in communication technologies.

About Firecom

Since 1989, Firecom has led the industry in providing advanced communications technology to the men and women on the front lines of first response. Through innovation and outstanding customer service, Firecom has built a name for itself in fire and rescue, working closely with departments to develop the products they need to do their jobs.

You don't get to be the most trusted name in quality apparatus communication systems without listening. At Firecom, we've been hearing our customers loud and clear since 1989. Using customer feedback, we advance technology and innovation to set new standards for rugged, mission-critical wireless systems that improve first responder safety and effectiveness.

We know what matters to you -- being able to reach an expert when you pick up the phone, quick turnaround on repairs, and getting the support you need when you need it.

Communication isn't just what we do; it's who we are. Tell us what you need. We're all ears.

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Call (800) 527-0555
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