



## **White Paper:**

### **Phoenix Fire Department**

The Phoenix Fire Department is a career department with 1,039 uniformed and 304 civilian members. The department protects 1.3 million residents within 478 square miles that make up the city limits. The department provides fire protection, emergency medical, technical rescue, hazardous materials, public information, and support services. Each day 356 firefighters are on-duty.

Lion Apparel Inc. fulfills the personal safety, readiness, and identity needs of our customers worldwide, each and every day. Through innovative solutions Lion Apparel improves firefighting clothing and with it the safety of the firefighters who wear its Turnout Gear.

#### **Challenge**

On March 14, 2001, Firefighter/Paramedic Bret Tarver died in the line of duty after running out of air from his self-contained breathing apparatus (SCBA) and becoming disoriented inside a burning supermarket. He soon became incapacitated and failed to follow instructions. Several companion members tried to rescue Tarver, but because of his big size were unable to pull him to safety. He died of carbon monoxide poisoning while battling the 5-Alarm blaze. The Phoenix Fire Department had not experienced a firefighter fatality on the fire ground in over 20 years prior to this incident.

After this incident Fire Chief Alan Brunacini and the IAFF Local 493 President Billy Shields tasked the Deployment Committee to ascertain exactly what happened during this fire. With help from the National Institute of Occupational Safety and Health (NIOSH), the Arizona Occupational Safety and Health Agency (OSHA), and the National Fire Protection Association (NFPA), the Phoenix Fire Department, a valued Lion Apparel customer, sat down with Lion Apparel's Vice President of Research and Development, Don Aldridge, to come up with an innovative solution for the problem of moving a fallen firefighter without much effort.



## Solution

Lion Apparel introduced the Firefighter Recovery Harness also called the Drag Rescue Device (DRD). This device is simply a strap which is located between the outer shell and the thermal liner of the turnout coat, placed underneath the arms and around the shoulders with a hand loop near the collar that exits the outer shell through a reinforced slot on the back of the coat just below the collar. (see picture below) The loop is 16" in circumference to allow the rescuer to easily grip and deploy it. Once deployed, the DRD provides mechanical leverage for dragging a downed and incapacitated structural firefighter from a life-threatening environment. The DRD enables the rescuer to drag the downed firefighter in line with the axis of the fire fighter's skeletal frame, in order to decrease the risk of injury. A little-known device known as the "Fallen Man Harness" had been available in the industry for about 15 years prior to the incident. Don Aldridge worked with Phoenix to adapt this device to the department's Janesville® bunker coats that were already in service. Within six months the department had a simple and practical solution that would allow a downed fire fighter to be dragged to safety.

### DRD Procedure



Fire fighter is incapacitated.



Reach for the DRD loop.



Grab the DRD strap and pull it to engage the system.



Put your hand through the loop.



Grasp the strap with both hands.



Pull, using your legs for leverage.



## Results

After this incident the DRD became very popular in its industry, so Lion Apparel purchased the patent in order to satisfy the demand for the DRD and make its turnout gears even safer.

Because of Fire Chief Brunacini's beliefs that the DRD is a crucial safety device, his commitment and influence has changed the way fire departments think about rescue accessories. In 2006, the NFPA Technical Committee voted to mandate a drag-rescue device in every new turnout coat made in accordance with the 2007 edition of NFPA 1971, *Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting*.

## Customer Feedback

*"After the incident we identified the problems that occurred and came up with different solutions. After intense testing and training with the Fallen Man Harness, we discovered a significant improvement in the recovery of an incapacitated firefighter. It is a huge improvement for the safety of our firefighters that we would not live without."*

*Captain Tim Durby  
Phoenix Fire Department*

*"Overall, Phoenix firefighters have been very pleased with the addition of an integrated rescue device into their turnout coats. The system is lightweight and does not restrict movement. This was extremely important in the implementation process, since firefighters would have to perform fire suppression and overhaul activities while wearing the device."*

*Somers, Scott.  
"A Case for an Integrated Rescue Device in Turnouts".  
Fire Engineering, June 2004: 75-79.*