

# **GREEN SHEET**

## **California Department of Forestry and Fire Protection (CAL FIRE)**

### **Informational Summary Report of Serious CAL FIRE Injuries, Illnesses, Accidents and Near-Miss Incidents**



#### **Firefighter Struck by Exploding LPG Lantern**

**October 17, 2012**

**New York Incident**

**12-CA-RRU-103004**

**California Southern Region**

A Board of Review has not approved this Summary Report. It is intended as a safety and training tool, an aid to preventing future occurrences, and to inform interested parties. Because it is published on a short time frame, the information contained herein is subject to revision as further investigation is conducted and additional information is developed.

## SUMMARY

The following information is a preliminary summary of a minor injury that occurred to a Firefighter during extinguishment operations at a storage shed structure fire. While conducting extinguishment operations, a FFII was struck in the chest by an exploding liquefied petroleum gas (LPG) camping lantern. The Firefighter was knocked out of the shed by the impact and the force of the blast. The Firefighter received a small red mark to his chest from the impact and was cleared back to full duty with no restrictions.

## CONDITIONS

### Weather:

Thermal Airport at 1252 hours:

Temperature – 90 degrees Fahrenheit

Relative Humidity – 31%

Winds – S at 8 mph

### Structure:

The structure was approximately 9 feet X 18 feet (162 sq./ft.) single story wood frame storage shed. The shed was located in the back yard of a single story, single family residence. The shed was located approximately 8 feet from the rear bedroom of the residence. The shed contained an assortment of household items, camping equipment, work materials and multiple unknown pressure vessels.

### Fire Conditions

Engine 55 and Medic 55 were first to arrive on scene and reported that they had a small shed that was fully involved. The fire was contained to the shed and had not yet breached a sliding glass door on the shed that faced the residence. The fire was starting to breach the roof and rear wall of the shed with dark heavy smoke issuing out of the shed window and roof eaves.

## SEQUENCE OF EVENTS

On October 17, 2012, at 1239 hours, a complete first alarm residential structure fire response was dispatched to a single family dwelling within the contract City of Palm Desert. The response consisted of 1 Battalion Chief, 4 type I Engines, 1 Truck company, 1 Fire Department Paramedic Ambulance, and 1 Breathing Support (Light/Air Unit) per Riverside County Fire Department Standard Operating Guidelines. At approximately 1245 hours, Engine and Medic 55 arrived on scene and reported a small shed fully involved. A coordinated aggressive attack was initiated with the assistance of additional arriving units. Forcible entry to the shed was made through the sliding glass door and fire attack was initiated with a single 1 ¾ inch hand line flowing 150 gallons per minute (GPM) out of a combination nozzle. Simultaneous to the fire attack, other on-scene personnel were removing some pressurized cylinders from the shed, controlling the utilities and checking for potential fire extension into the residence. Visibility in the shed was near zero at the onset of the fire attack, but started to lift as the fire was starting to be knocked down.

After approximately 5-6 minutes of fire attack, a large explosion occurred inside the shed accompanied by a small flash ball of fire and a blast wave of pressurized air. During this explosion, the Firefighter who was on the nozzle was struck by an object, which was later identified as a small camping lantern, in the chest and thrown out of the shed to the ground by the blast. The Firefighter was immediately assisted to his feet and escorted to Medic 55 by scene personnel.

Once at Medic 55, the Firefighter was evaluated by on scene personnel and the Paramedics from Medic 55. The decision was made to transport the Firefighter to the hospital for further evaluation as a precaution. Simultaneous to the medical evaluation of the Firefighter, notification was made to the Perris ECC and a Safety Officer and hospital liaison was requested.

## **INJURIES/DAMAGES**

The firefighter was evaluated on scene by the on scene Paramedics. The Firefighter was transported to a local Trauma Center as a precautionary measure. Once at the Trauma Center, the Firefighter was evaluated by the Trauma Center staff, a chest X-ray was performed and it was confirmed that the Firefighter suffered no more than a red mark to his chest at the lantern impact site. The Firefighter was released back to full duty with no work restrictions.

## **SAFETY ISSUES FOR REVIEW**

It should be noted that during the course of this incident review, no violations of Policy, Procedures, 2 in 2 out, BUC/RIC, SOP's/SOG's, supervision or equipment failures were discovered. The following points are recommended for review:

- Firefighting is an inherently dangerous profession. We must always prepare ourselves for the unexpected and ensure that when we are engaged in a high risk activity, proper precautions are in place.
- A storage shed, much like a storage building and/or a garage is a mixed bag of the unknown. We can and routinely do find a very wide variety of items stored/occupying these types of structures. In many cases, items that can be classified as hazardous materials are found in these structures and yet rarely are these structures ever placarded.
- The fact that the injured Firefighter was properly wearing all of his structural PPE and his SCBA had a direct correlation on the limited extent of his injuries. Despite the fact that he was struck by the flying lantern in the chest, the Firefighter received no additional injuries due to the explosion and flaming LPG blast wave.

## INCIDENTAL ISSUES/LESSONS LEARNED (For Near-Miss and Non-Serious Accidents)

- Size up is an ongoing process that must be accomplished by both command and task oriented divisions/groups. This situational awareness needs to be continually monitored and plans/tactics need to be adjusted based on incident driven needs.
- Ensure that risk versus gain analysis is performed and in balance.
  - The risk versus gain analysis, much like the size up, is an ongoing process that needs to be constantly updated and adjusted based on the incident.



