

**SAN DIEGO FIRE-RESCUE DEPARTMENT**

**BULLETIN:**

**NO.:** 15-121

**DATE:** August 3, 2015

**TO:** All Personnel

**FROM:** Brian Fennessy, Assistant Chief, Emergency Operations

**SUBJECT:** Green Sheet – Apparatus Rollover

Please find attached the *Informational Summary Report of Serious SDFD Injuries, Illnesses, Accidents and Near-Miss Incidents* from a rollover vehicle accident involving a type III apparatus. Any questions should be directed through the normal chain of command.

# **GREEN SHEET**

**(Factual Report)**

## **San Diego Fire-Rescue Department (SDFD)**

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



#### **Apparatus Rollover**

**June 16, 2015**

**This report is intended as a safety and training tool, and aid to preventing future occurrences. Information contained herein is subject to revision as further investigation is conducted and additional information is developed.**

## SUMMARY

The following is a summary report of a Type III apparatus rollover accident that injured 2 firefighters. The crew of Brush 29, in an SS Ultra XT apparatus, was engaged in off-road driver training of a firefighter in the Otay Mountains when the accident occurred.

## CONDITIONS

### **Weather:**

Temperature: 69.1 degrees  
Relative Humidity: 75%  
Wind: 8.1 mph out of the South West

### **Location and Topography:**

The location of the accident was on an unnamed dirt road on public lands, approximately 2.1 miles east of Enrico Fermi Drive and north of Via De La Amistad Extension. There was an ascending dirt/brush embankment on the east side of the road and a descending dirt/brush embankment on the west side of the road and the road was dry.

## SEQUENCE OF EVENTS

On June 16, 2015, at approximately 0838 hours, BR29 was placed out-of-service for driver training. BR29 exited the improved paved roads in Otay Mesa for off-road training and the accident occurred at approximately 0930 hours.

While conducting off-road driver training, BR29 was traversing a hillside on an unimproved narrow dirt road. BR29 was traveling southbound on a west facing slope on a road described by Customs Border Patrol agents as an ATV track. During their forward progress, the side-angle of the road and unevenness of terrain caused the front left tire to unweight (Point A). At that time the side-angle inclinometer indicated the apparatus was at a 13 degree angle per the driver-operator trainee. Recognizing the risks of continuing, the apparatus was stopped and the crew exited the apparatus and evaluated their options.

The sharp side-angle of the apparatus was identified as the primary problem compromising the stability of the apparatus. Backing up-hill was discounted because the side-angle of the apparatus was thought to increase the likelihood of rollover. The plan to mitigate the risks of rollover was to back the apparatus down-hill, anticipating that the rollover risks were least if the apparatus was vertically oriented on the hillside versus horizontal.

A decision was made not to empty the water tank, due in part to a lack of proper drainage in the area and the belief that a wet or muddy ground would have increased risks. Prior to the backing evolution, the driver trainee was replaced by the Engineer as a conscious effort to have the most experienced operator behind the wheel.

During the backing evolution the Engineer was in the driver's seat and the firefighter/paramedic was in the right rear seat both wearing seatbelts, while the Captain and firefighter took positions as spotters outside of the apparatus. As the apparatus was backed, the front wheels were turned to the right, causing the rear wheels to start down-hill. As the rear wheels rolled off the dirt road (Point B), the right rear wheels sank into a soft unpacked terrain. The sinking, combined with the angle of the hill, may have shifted the center-of-gravity outside of the wheels and may have caused the slow rollover of the apparatus. Once the rollover began, the angle of the hill and the shape/balance of the apparatus may have contributed to its roll of 2 ¼ times and the apparatus came to rest on its right side at the bottom of the hill.

## **INJURIES/DAMAGES**

- Vehicle driver sustained a concussion
- Firefighter/Paramedic (seated in right rear seat) sustained a right elbow injury
- Brush 29 was damaged beyond repair
- Several tools and pieces of equipment damaged

## **FUTURE CONSIDERATIONS**

- Remove unnecessary personnel from hazardous situations
- Consider all options for risk mitigation including:
  - Backing straight up to safety
  - Utilizing heavy equipment (dozers) to mitigate rollover risk
  - Draining the water tank may lower the center of gravity
- Review off-road driver training program
- Review Type III Engine training program
- Review apparatus standardization and its effect on training efficiency
- Ensure all in-cab equipment is secured
- Ensure all vehicle occupants are wearing seatbelts

# BR29 Incident 6/16/2015



**Legend**

- Incident Location
- Battalions**
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- Fire Stations
- Military Fac.
- Air Runways
- 200 ft Contour

N  
  
 Scale

1:41,161



July 20, 2015

Created by:  
 San Diego Fire-Rescue  
 Response Planning



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Vicinity Map



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