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**INFORMATIONAL SUMMARY REPORT
FIREFIGHTER BURN INJURIES**



FIREFIGHTER BURN INJURIES

TO

**CALIFORNIA DEPARTMENT OF FORESTRY
AND
FIRE PROTECTION
PERSONNEL**

**SAN DIEGO RANGER UNIT
SIERRA/SOUTH REGION**

**PAMOOSA INCIDENT/MVU-7005
SEPTEMBER 9, 1997**

This Summary Report has not been approved by a Board of Review. It is intended as an aid in accident prevention, to let interested parties know what happened, and to be used as a safety training tool. To that end it is published and distributed within a short time frame. Information contained within may be subject to further revision as further investigation is conducted and other reports and documents are received.

Lookouts Communication Escape routes Safety zones

SUMMARY

At approximately 1458 hours on September 9, 1997, the Pamoosa Incident, MVU-7005 occurred. This was a 15 acre vegetation fire on SRA within the Deer Springs Fire Protection District. The fire, caused by an "over-the-side" vehicle accident, was located approximately three miles east of I-15 on Castle Creek Road. Firefighting resources from the California Department of Forestry and Fire Protection (CDF) and Deer Springs Fire Protection District (CDF Schedule A contract) responded to the incident..

Initial attack resources arrived to find a burning vehicle approximately 100 feet below the road in a ravine and a vegetation fire, approximately ½ acre in size, that had burned up to the road. The vegetation fire was spreading laterally on both flanks, in medium brush and light fuels, with a slow to moderate rate of spread. Initial attack engine companies began progressive downhill hoselays on both flanks. While the hoselay on the right flank was being clamped and extended, the fire flared-up and made a swift uphill run. Three CDF personnel received minor to moderate burn injuries from convective and radiant heat during the flare-up. Injured personnel were not wearing approved wildland goggles and did not have their shrouds secured around their faces.

One civilian received minor to moderate burn injuries as a result of the original traffic accident. That individual refused treatment.

FIRE LINE CONDITIONS

Topography

- Terrain:** The fire originated in a ravine below a moderate to sharp corner in the road. The ravine was well defined and opened into a prominent drainage approximately 1/4 mile below the fire.
- Aspect:** South to southwest exposure.
- Slope:** Slope in the fire area ranged from 40% to 90%. Elevation at the origin was 600 ft.
- Fuels:** Medium brush with some grass understory. Chamise, coastal sage, buckwheat. Fuel Model #4, continuous with loadings of 15-17 tons/acre. Dead fuel component: 70-80%. Live fuel moisture for chamise: 61%.

Weather: Hot and dry, light S-SW winds. RAWS data from Valley Center (approximately 5 miles east of the accident site) at 1515 hours on September 9, 1997, was as follows:

Temp: 96 RH: 25% W: SW at 7 mph
Fuel Temp: 108 Fuel Moisture: 9%

SEQUENCE OF EVENTS

Times are approximate:

At 1507 hours E-1011 (FC and FAE) arrived on-scene to find approximately ½ acre burning with fire bumping the road. The fire was spreading laterally at a slow-to-moderate rate. E 3389 (FC, 2 FF-1's) arrived and assisted E1011 with a direct attack, downhill hoselay on the right flank. They used Class A foam, a combination nozzle, and 100' section of rolled 1 ½" hose.

The direct attack achieved good knock down of the fire and the crew progressed down the hill approximately 60' where they needed to clamp the hose and extend the first length of hose. Prior to clamping, they checked the line for any active spots and saw none.

While the hose was clamped and nozzle disconnected, the fire flared-up immediately below them and the order was given to retreat into the burn. The flare-up advanced rapidly outside the "wet line" with flames threatening 4 personnel. Three personnel retreated at a 90 degree angle into the burn. The 4th, a Firefighter I, caught by the initial blast of heat from the flare-up, retreated slightly into the burn and then directly uphill. During this escape attempt, the FF-I sustained burns to the face.

The injured FF-I proceeded uphill to the roadway. A FC, standing at the top of the embankment to assist, was exposed to the radiant and convective heat and sustained burns to the face.

INJURIES (see map for personnel placement on incident)

FF Hunter: 1st and 2nd degree burns to face and left ring finger comprising 5-7% of the TBA (Total Body Area). Facial burns caused by radiant and convective heat. Injury resulted from gloved hand contact with hot ground materials while climbing up the steep slope.

FAE Casteel: 2nd degree burn to right index finger comprising less than 1% TBA. Injury resulted from gloved hand contact with hot ground materials while climbing up the steep slope.



FC Raymond: 1st degree burns to face and left hand comprising 2-3% of TBA. Injuries occurred while assisting FF Hunter out of the heat and onto the road.

FINDINGS

- 1. Initial attack strategy was appropriate and could have been implemented safely.**
- 2. Proper use of approved safety gear, primarily shrouds and goggles, would have prevented the most serious injuries.**
- 3. The fire line was not adequately secured prior to attempting to extend the hoselay.**
- 4. Greater attention to L.C.E.S. would have improved the crews reaction time to the unanticipated increase in fire behavior.**
- 5. Topography, fuels and weather remained relatively constant prior to, during, and immediately after the flare-up.**