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# CDF Green Sheet

## California Department of Forestry and Fire Protection



### CDF ENGINE COMPANY 2382 BURNOVER

August 2, 2000

PECHANGA FIRE

CA-RRU-48329

CDF - RIVERSIDE UNIT

SIERRA/SOUTH REGION

Lookouts    Communications    Escape Routes    Safety Zones

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.

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## **SUMMARY**

On August 2, 2000 at approximately 1520 hours the crew of CDF Engine 2382 was burned when the structure that they were protecting was overrun by fire. They were assigned to the Woodchuck Structure Protection Group on the Pechanga Fire (RRU-48329). The Fire Apparatus Engineer and three (3) Firefighters had moved to the front (north) of the garage where they were burned when flames being pushed by 45-50 mile per hour winds rolled over the entire roof and around the sides of the single story light wood frame garage. They were attempting to take refuge inside the structure when the door at the northwest corner of the building jammed and they were unable to get inside; direct flame impingement caught them in the lee side eddy of the building for 10-15 seconds. The engine company left the structure and took refuge in their secondary safety zones and suffered no further injuries.

They received immediate burn injury treatment at the scene and were transported to Arrowhead Burn Center via ground and air ambulance. Both air cleaners on the CDF model # 9 fire engine caught fire causing the main and pump engine to stop. Engine 2382 suffered only superficial body/paint heat damage.

## **CONDITIONS**

The fire location is in Riverside County 6 miles southeast of the City of Temecula. The accident occurred on Division C at the end of "Lucky U" Road, off Woodchuck Campground Road, south of Highway 79.

**GARAGE:** The structure is located at the "bullnose" end of ridge on a graded flat bare dirt landing that is approximately 250 feet by 100 feet in size. The garage is approximately 24' x 40' with older, light wood frame construction, wood siding, and composition shingle roof. The south side of the garage was located 10 feet from the boundary of the Aqua Tibia Wilderness area of the Cleveland National Forest. Thirty (30) feet of brush on the slope below the garage was removed by a CDF Chamberlain Creek Fire Crew earlier the same day. The garage door was checked earlier in the day by the CDF Fire Crew Captain and was swinging freely at that time.

**FUEL:** Wildland fuel was fuel model 4 mixed brush (Chamise, Ceanothus, and Manzanita) 45-50 tons per acre and 80 + years old. Live fuel moisture was measured at 53-61%. One hour dead fuel moisture was estimated at 6%. Both of these are critical stages for this fuel type. The area to the west and north had already burned, the only unburned fuel is in the drainage south and east of the garage.

**TOPOGRAPHY:** The flat landing was surrounded on the south and east side by steep, deep drainages. The south facing aspect slope averaged 69-84%. The east facing aspect slope was approximately 107-142 %. The fire was pushed by a subsiding wind and essentially followed the drainage down slope.

**WEATHER:** Temperature: 86-90 F  
Relative Humidity: 30-40 %  
Wind: West-Southwest 10-12 mph (prior to thunder cell formation), very typical for this area at this time of day.

Thunderstorms predicted and observed over fire area.

#### **SEQUENCE OF EVENTS:**

At 1430 a rapidly building thunder cell started building east of fire, this was accompanied by a dissipating cell south of the fire. Winds accelerated at the accident site and became West-Southwest 45-50 mph. Firefighters mentioned that smoke started to come down on top of them and visibility decreased significantly. At 1455 hours the Division C Line Safety Officer (LSO) issued an advisory for certain tactical resources to move to safety zones or prepare for structure protection because of the thunder cell forming.

#### **ENGINE 2382:**

As a result of the LSO's advisory, Engine 2382 was instructed by the Strike Team Leader (STL) to return to the landing to protect the structure. The STL accompanied them to this site. They

had both been to this site earlier in the day supporting a hose lay operation. The engine company prepped the structure, placed a charged a 1-1/2 " hose line on each side of garage, positioned apparatus in a safe location, and posted lookouts to observe fire spread. Fire was spreading rapidly down the drainage from the southwest with flame lengths of up to 100 feet. The fire then made a run at their position up the south facing slope below the garage. They were attempting to take refuge inside the structure. The door they had planned to use was on the lee side (opposite side from fire spread) of the structure. The door to the building jammed even with two of them "putting their shoulders to the door", they were unable to get inside; direct flame impingement caught them in the lee side eddy of the building for 10-15 seconds. The STL said that, " the flames rolled over the top of the building like water flowing over a rock in a river" and hit the back of the fire engine parked forty feet away. One of the firefighters also said that, "the flames coming around the building were like a hand sweeping around the corner".

The engine company had prepped the structure and had been inside the door less than 20 minutes prior to the burn over, the door swung freely at that time. It is apparent that the wind "racked" the building sufficiently to jam the door in a closed position. Composition shingles were blown loose from the building and "pelted" the STL vehicle parked 50 feet north of the garage.

The crew of E-2382 left the garage area, took refuge in their designated secondary safety zones. Two got inside a private van parked on the landing and deployed a fire shelter. The other two took refuge and deployed the fire curtains in the crew compartment of the model # 9 fire engine.

### **Injuries**

All four members suffered burn injuries that were preliminarily assessed as serious burns. CDF Burn treatment protocols were followed at the scene and during transportation to the burn center. All four members were treated with serious burn protocols and transported via ground and air ambulances to Arrowhead Burn Center in Colton, California.

Personal Protective Equipment (PPE) appeared to work very effectively in reducing the extent of burn injuries. Nylon web gear worn by engine company members did melt and ignite.

## **Safety Issues for Review**

- ◆ 10 Standard Orders were adhered to
  - ◆ 18 Situations that Shout Watch Out were addressed by engine company personnel
  - ◆ LCES was planned for and practiced
  - ◆ The lee side (downwind) of any object is subject to a wind eddy, it is imperative that members account for this eddy in the planning of escape routes and safety zones.
  - ◆ The interior of this structure was the safest place to be, but the path to that safety zone became obstructed because the building “racked” over due to extreme wind force.
  - ◆ Web gear should be checked for flammability.
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