

# Sacramento Metropolitan Fire District

Review Report of Serious Injuries, Illnesses,  
Accidents and Near-Miss Incidents



**Jackson Fire Burnover  
Firefighter Burnover with Burn Injuries**

**June 10, 2008**

**Jackson  
CA-SAC-072015**

**Sacramento Metropolitan Fire District**

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DON METTE  
Fire Chief

# Sacramento Metropolitan Fire District

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## Fire Chief's Statement

June 10, 2008, was a difficult day for the Sacramento Metropolitan Fire District. What started as a grass fire on the south side of Jackson Highway grew to historic proportions burning 6,400 acres and destroying several structures. During the early stages of this incident, the crew from Station 64 was burned over by flames while attempting to protect a mobile home. Two of the three-person crew was able to make it to safety, but unfortunately, one of them was severely injured.

As a result of the magnitude of this incident, I decided that Metro Fire must investigate the circumstances leading to the burnover. The goal of the investigation was to define the factors which lead to the incident and work to implement changes that will reduce the possibility of a similar event recurring. Realizing that Metro Fire would need assistance in accomplishing this goal, I requested assistance from Cal Fire. In response to my request, Cal Fire assigned Unit Chief Brad Harris to assist us with our investigation. Chief Harris has extensive experience investigating Line of Duty Deaths and Injuries and was the team leader for the team that investigated the Esparanza burnover that killed five Forest Service firefighters.

A Safety Accident Review Team (SART), which consisted of members representing management and labor, was convened to assist with the investigation of the incident. The SART spent hundreds of hours reviewing all aspects of the response to the Jackson incident and the events leading to the burnover. At the conclusion of their many hours of review, they compiled all of the data that they had reviewed and used it to create the Jackson Burnover Review Report. The report was then submitted to a Board of Review for final approval. On September 9, 2008, the Board Review Team, which consisted of Assistant Chief Mugartegui, Battalion Chief Finney of Roseville Fire, and me met to review the SART's report and receive a presentation from SART Leader Chief Harris. At the conclusion of the presentation, the Board of Review approved the report. With the assistance from the SART and Senior Staff, we, Metro Fire, will utilize this report to identify areas in which improvement is necessary and ensure that the improvements are implemented.

Please be advised that the Jackson Burnover Review Report is not intended to place blame on any individual for the events of June 10, 2008. Our goal is to

identify the factors that caused or contributed to the event, and to look for areas that we, Metro Fire, can improve on to reduce the possibility of a reoccurrence. The SART spent numerous hours looking at events and situations that the crews were faced with, while keeping in mind that they only had seconds to make observations and then make decisions accordingly. As the cliché goes, hindsight is 20/20. The observer outside the incident may easily identify events that lead to the burnover; however, the crews involved made decisions based on conditions that were rapidly evolving. These decisions were based on the best information the crews had at the time and none of us can say that we would have done things differently if presented with the same set of circumstances.

In closing, I would like to extend my deepest appreciation to everyone that was involved in the development of this report. I would like to thank all of the crewmembers that were involved in the incident for their honesty and willingness to tell their story. I would also like to thank the SART, which consisted of Deputy Chief Jim Eastman, Battalion Chief Jeff Metzinger, Captain Jeff Hickman, Captain Mike Teague, Engineer Chuck Ingram, Investigator Steve Johnson, Unit Chief Brad Harris, Battalion Chief Chris Anthony, and Captain Chris Waters for their time, effort, and commitment to the review process, and to Cal Fire for allowing several members of their staff to assist us throughout this process. Each and every one of you played an integral part in the development of this report, and your invaluable contributions will ensure the continued safety of the men and women of our department.



Don Mette  
Fire Chief

## **OVERVIEW OF ACCIDENT**

On June 10<sup>th</sup>, 2008 at 12:12 p.m. Sacramento Metropolitan Engine 64 staffed with a Fire Captain and Engineer, and Grass 64 staffed with a Firefighter, were dispatched in tandem to a grass fire in Sacramento County. Upon arrival Captain 64 and Engineer 64 identified a mobile home that was threatened by the fire. Both units made access to the mobile home, deployed hose lines and began to suppress the fire. During suppression activities a perceived wind shift occurred causing the left flank of the fire to rapidly advance toward the Captain 64. Captain 64 was quickly enveloped in smoke, became disoriented and was overrun by the fire. Captain 64 sustained third degree burns to his hands and second degree burns to his forearms and nose. Captain 64 was transported to and treated at Mercy General Hospital and later transferred to the University of California Davis Burn Center in Sacramento, California.

## **SEQUENCE OF EVENTS**

On the morning of Monday, June 10<sup>th</sup>, 2008 the National Weather Service office of Sacramento issued a Red Flag warning for gusty northerly winds and low relative humidity. The forecast called for maximum temperatures of 85 to 90 degrees, minimum relative humidity of 10 to 20 percent and northwest winds from 17 to 27 miles per hour with local gusts at 33 to 43 miles per hour. Fire danger for the day was predicted to be Extreme.

At 12:11 p.m. on June 10<sup>th</sup>, 2008 the Sacramento Regional Fire/EMS Communications Center (SRFECC) received a report of a grass fire near the intersection of Bradshaw Road and Jackson Highway in Sacramento County. Within a minute of receiving the report, the SRFECC dispatched an augmented

“Grass-Red Flag<sup>1</sup>” response which included Battalion 9, Engine 62, Grass 62, Engine 54, Grass 54, Engine 64 and Grass 64. Copter 1, Sac Metro’s helicopter, was committed to a fire in El Dorado Hills, CA during the time of dispatch.

At 12:12 p.m. Sacramento County Sheriff’s Department helicopter, Star 8, was over the area and reported the fire was spreading toward a greenbelt and no structures were immediately threatened. Three minutes later Star 8 provided the following update:

**Star 8:** *“Helicopter Star 8.”*

**SRFECC:** *“Fire Dispatch.”*

**Star 8:** *“...It looks like that little greenbelt is containing the fire so far. We’ve made PA announcements. There’s some trailers and outback buildings due south of where the fire is headed towards...”*

At 12:20 p.m. Engine 54, Grass 54, Engine 62 and Grass 62 arrived at scene of the fire. The fire was burning on the south side of Jackson Highway in short annual grass (Fuel Model 1)<sup>2</sup> on relatively flat ground. The fire was being pushed to the southeast by a strong northwest wind. The Captain on Engine 62 assumed command of the incident (Jackson Command) and used the intelligence provided by Star 8 to formulate a preliminary tactical plan. Captain 62 directed Grass 54 to the right (west) flank of the fire and Grass 62 to the left (east) flank. Approximately 3 minutes later Engine 64, followed by Grass 64, arrived at scene and was assigned to work on the left flank of the fire with Grass 62. Engine 64 acknowledged the assignment and continued east along Jackson Highway towards Grass 62. Seconds later Star 8 provided the following information:

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<sup>1</sup> SRFECC declares a red flag dispatch level when winds are greater than 30 mph and relative humidity is less than 15%.

<sup>2</sup> Fuel models are a collection of fuel properties used in theoretical models to predict fire danger and behavior. Fuel Model 1 describes cured dead grass with very little live fuel loading. Fuel Model 1 is the predominant fuel type in Sacramento County.

**Star 8:** *“Star to Grass unit on Jackson [Highway]. If you keep going eastbound just a little bit there is gravel road to the south. You can probably access that fire a little bit easier from there and it’s headed right towards that trailer [mobile home] and several vehicles just east of you guys. We did make PA announcements and we have that trailer [mobile home] evacuated. Residents are standing at the gate at that gravel road.”*

As they approached Grass 62, the Captain and Engineer on Engine 64 noticed that Grass 62 was having problems making access to the fire off of Jackson Highway. Captain 64 made a decision to continue beyond Grass 62’s location and head towards the access road leading to a mobile home.

**Engine 64:** *“Command, Engine and Grass 64 has bumped up. We’re going to set up a perimeter around this trailer [mobile home]- the winds are coming up to it.”*

**Jackson Command:** *“Copy. Can you handle it with resources or do you need more?”*

**Engine 64:** *“We haven’t made our way in there but it looks like we can handle with a Grass and the Engine.”*

Engine and Grass 64 turned south onto a gravel road off of Jackson Highway and traveled approximately 90 feet down the road until they were stopped by a locked gate. At the gate they saw a female adult and two children. Captain 64 identified them as the residents of the mobile home who were evacuated by Star 8. Captain 64 also noticed the female adult appeared to be sick and he asked her if she needed any medical attention. The female adult did not reply. One of the children told Captain 64 the female adult was fine and added that “everything she owns, her whole life, is in the mobile home.” Engineer 64 cut the lock off the

gate and Engine 64 continued down the road with Grass 64 following. Captain 64 informed Engineer 64 of his conversation with the child.

Engine and Grass 64 traveled approximately 440 feet down the road and then turned west. As they approached the mobile home Captain 64, Engineer 64 and Firefighter 64 noticed a significant increase in grass height on the property. It was during this time the front of the fire began to transition into the taller grass just west of the mobile home.

Engine and Grass 64 came to a stop near the northwest corner of the mobile home. Engineer 64 deployed a one-inch hose line off Engine 64 while Captain 64 walked over to Grass 64. Captain 64 put on his structure hood and wildland helmet and began to deploy the reel line<sup>3</sup> off Grass 64. Captain 64 told Firefighter 64 they were going to mobile attack<sup>4</sup> the left flank of the fire and try to catch the head. Captain 64 walked into the unburned fuel with the reel line while Firefighter 64 drove Grass 64 slowly behind. As Captain 64 moved toward the fire, he noticed a two (2) foot trench running perpendicular to the direction of their mobile attack. He immediately turned to Grass 64 and signaled with his fist to stop. Firefighter 64 backed Grass 64 out of the grass and parked in a clearing behind Engine 64. At that time Captain 64 turned back around and continued moving toward the head of the fire along the left flank advancing the reel line.

After Firefighter 64 parked Grass 64, he ran over to help the Engineer 64 untangle a knot in the one inch hose line attached to Engine 64 that formed when it was charged with water. As soon as the hose was untangled, Engineer 64 began to suppress the fire behind the mobile home. At that time Firefighter 64 noticed a section of uncontained fire line between the Captain 64 and Engineer

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<sup>3</sup> A reel line is a 1 inch hard rubber line stored on a hose reel. The reel line can deliver between 30 to 60 gallons per minute.

<sup>4</sup> Mobile attack is a method of wildland fire suppression which uses apparatus that have the ability to pump water while moving along the edge of the fire.

64. Firefighter 64 deployed a 25 foot, 1 ½” bumper line off Grass 64 to suppress the uncontained section of fire.

At approximately 12:34 p.m. a perceived wind shift occurred from the northwest to the southwest with an increase in wind speed. After observing fire behavior at the scene, witness statements, and weather observations, the investigation team believes the change in fire behavior occurred due to an eddy effect of the wind coming around the mobile home and not a generalized wind shift. The flank of fire they were trying to suppress quickly became the fire front. The smoke and noise from the fire limited their ability to see or hear. Engineer 64 yelled to Firefighter 64 to run as he made his way back towards Engine 64 for refuge. Firefighter 64 yelled Captain 64’s name a number of times and tried to follow the reel line out to Captain 64 but was pushed back by the heat and flames. Firefighter 64 was forced to take refuge in Engine 64 with Engineer 64 as the fire burned around them.

During the wind shift, Captain 64 was unable to see due to the thick smoke. As the heat from the fire became more intense, Captain 64 dropped the reel line and ran back in the direction of Grass 64. As Captain 64 retreated to Grass 64 he fell four times. Captain 64 stated that he removed his gloves after the second fall to evaluate his hands and to allow him to key the radio. The first three falls caused burning to his hands and last fall resulted in burns to his forearms and elbows. After the fourth fall Captain 64 realized he was disoriented and was unsure of Grass 64’s location. Captain 64 transmitted three “Maydays” on his portable radio, crouched down with his back to the fire, covered his mouth with his hands, and tucked his face into his chest to protect his airway. Captain 64 stayed in this position until the fire had completely burned past him.

***Captain 64:*** “*Command, Grass 64.*”

***Medic 62:*** “*Jackson Command. Medic 62.*”

**Jackson Command (Battalion 9):** *“Medic 62 hold off, we’ve got a Mayday. Grass 64, Command.”*

**Captain 64:** *“Command, Grass 64. We’ve been burned over at the trailer. We need a couple ambulances. I need some help.”*

**Jackson Command (Battalion 9):** *“I copy. We’re getting you help. Which, are you on the west flank, or are you on the Whiskey flank, or on the flank ahead? Where are you at?”*

**Grass 64:** *“The flank protecting the trailer.”*

**Jackson Command (Battalion 9):** *“I copy. Medic 62 I need you to advance to their area.”*

After the fire passed, Engineer 64 found Captain 64 wandering around Grass 64. Engineer 64 assessed Captain 64’s burn injuries and put him in Engine 64. By this time the mobile home had begun to catch fire. Engineer 64 drove Engine 64 toward Jackson Highway where Medic 62 was waiting. Captain 64 was placed in the care of Medic 62 and transported to Mercy General Hospital in Sacramento. Within hours of his arrival to Mercy General, he was transferred to the University of California Davis Burn Center in Sacramento. Captain 64 suffered third degree burns to his hands and second degree burns to his forearms and nose.

## **FINDINGS**

A finding is a statement of a conclusion drawn from factual data established by the review. Each finding must be supported by information found elsewhere in the report. All findings must be based on, and supported by, fact.

### **1. Human Findings**

- H-1 Personnel on Engine 64 and Grass 64 were aware a Red Flag Warning was in effect on June 10<sup>th</sup>, 2008.
- H-2 Initial arriving personnel believed they would be able to contain the fire.
- H-3 Responding firefighter initial tactics were partially based on report of conditions from Star 8 and units on scene.
- H-4 During the initial attack of the fire, Engine 64 made a decision to conduct structure protection based on their observed fire behavior, the report on conditions from Star 8, and knowledge of a structure out in front of the fire.
- H-5 Captain 64 and Engineer 64 made contact with the family of the threatened mobile home at a locked gate. One of the family members was an obviously ill adult female.
- H-6 Firefighter 64 was concerned about the safety of Captain 64 as he progressed into the grass but did not communicate his concerns with the Captain or Engineer.
- H-7 The sudden wind shift and resulting change in fire behavior caught the firefighters by surprise. The firefighters stated that they perceived a wind shift resulting in a significant change in fire behavior.
- H-8 Captain 64 spoke with the family and was told “said is she okay and he said yeah, she's okay but everything she owns--her whole life is in that trailer right there.”
- H-9 All members of Station 64 were on their first 24 hour of their 48 shift

and were rested.

- H-10 Captain 64 had 19 years experience as a firefighter. Captain 64 was assigned to a truck company for a majority of his career prior to being promoted to Captain
- H-11 Captain 64 was promoted to Captain January 2008.
- H-12 Captain 64 was assigned to Station 64 on June 4, 2008.
- H-13 Captain 64 removed his gloves after second fall to inspect hands and talk on radio.
- H-14 Visibility was reduced due to smoke conditions
- H-15 Noise from advancing fire hampered communications between Captain 64, Engineer 64, and Firefighter 64.

## **2. Equipment Findings**

### **Personal Protective Equipment**

- E-1 Captain 64 Work Uniform- At time of accident employee was in appropriate work uniform per policy (Policy 346.01).
- E-2 Captain 64 PPE- At time of accident employee was in appropriate wildland gear per policy (770.04) except he was wearing non wildland gloves.
- E-3 Captain 64 PPE- Most recent inspection record dated 3/31/08. Wildland Gear and Web Gear marked as serviceable.
- E-4 Captain 64 Work Uniform- Bottom cuff of nomex work uniform pant showed signs of heat damage and slight discoloration.
- E-5 Captain 64 PPE- Wildland helmet exhibited no signs of fire or heat damage.
- E-6 Captain 64 PPE- Structural nomex hood exhibited no signs of fire or heat damage.
- E-7 Captain 64 PPE- Grass Coat and Grass Pant appeared unlaundered (Policy 770.04)
- E-8 Captain 64 PPE- Grass Coat (Manufacture Date: August 2001)
- E-8a Heat damage on the reflective striping located on the lower left side of

the back of the coat.

E-8b Heat damage on reflective striping on the left sleeve above the cuff.

E-8c Left forearm of grass coat had debris embedded in the nomex.

E-8d Grass coat did not have double sleeve modification.\*

*\*Note: Sac Metro is in the process of adding double sleeved linings to all Grass Gear.*

E-9 Captain 64 was wearing structure gloves at the time of the burn. The gloves were double layer non-gauntleted gloves.

E-10 Captain 64 PPE- Grass Pants (Manufacture Date: July 2001)

E-10a Heat damage to reflective striping located above right pant cuff.

E-10b Heat damage to reflective striping located above left pant cuff.

E-10c Melted debris in nomex fabric around knee and thigh area of both pant legs.

E-10d Heat damage to right pant cuff.

E-10e Left pocket of pant had 2 ½ inch hose line cut to form a hose clamp.

E-10f Captain 64's Grass pants were cut off by Medic 62 during patient care.

E-11 Captain 64 PPE- Boots showed melting on the sole of the boot and heat damage to the leather portions.

### **Fire Apparatus**

E-12 Grass 64- A portion of reel line hose was damaged by the fire, but was still functional even after the burn over.

E-13 Grass 64- Bale on nozzle attached to the end of the reel line was damaged by the fire but was still functional.

E-14 Engine 64- 100 foot section of one-inch hose became tangled when charged with water.

E-15 Engine 64- Partial sections of 100 foot one-inch hose burned by the fire.

## **3. Fuel, Weather, Terrain Findings**

### **Fuel**

F-1 Annual grasses transitioned from less than a ¼ ton per acre increasing

to ¾ to 1 ton per acre surrounding the mobile home.

- F-2 Grass height transitioned from 8 to 12 inches to approximately 24 to 36 inches in height.
- F-3 Mobile home, vehicles and debris contributed to fuel loading and fire behavior around accident site.
- F-4 Homeowner performed no defensible space work around mobile home.
- F-5 Estimated flame lengths ranging from four to twelve feet in height were observed.

#### **Weather<sup>5</sup>**

- W-1 Wind Speed 14 mph from the northwest
- W-2 Relative Humidity 15%
- W-3 Fire Indices were at historical highs.
- W-4 There was a sudden perceived wind shift from the northwest to the west-southwest. The perceived wind shift was likely caused by an eddy effect around the structure.

#### **Terrain**

- T-1 Elevation at Origin- 36 feet above sea level
- T-2 Elevation at Accident Area- 53 to 61 feet above sea level
- T-3 Uneven terrain and debris in accident area affected footing of Captain 64.
- T-4 Changes in elevations created a natural wind channel
- T-5 Wind and terrain were in alignment.

### **4. Management Findings**

- M-1 Sacramento County has a local defensible space ordinance.  
(Sacramento County Code 17.12.060)
- M-2 Defensible space ordinance is enforced on a complaint basis only.
- M-3 All wildland fires are dispatched as grass fires.

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<sup>5</sup> Weather data was collected from the Ben Bolt Remote Automated Weather Station (RAWS) located approximately 20 miles east of the incident site. A review of the data from the Automated Surface Observation System (ASOS) weather station at Mather Airport revealed similar observations.

- M-4 Sacramento County has an enhanced grass fire dispatch for Red Flag Days.
- M-5 Metro Fire has a wildland SOP. SOP does not address hoseline selection or gallonage needed for wildland fire suppression.

## **5. Motor Vehicle Finding**

- MV-1 Engine 64 is 1989 Pierce Lance
- MV-2 Grass 64 is a 1992 Ford F-450
- MV-3 All apparatus were in good working order.
- MV-4 Engine 64- Velcro on ladder cover burned.
- MV-5 Grass 64- Charring on reel line.

## **6. Communications Findings**

- C-1 Fire Dispatch and Battalion messages were sent out to all stations and personnel at 0800 stating that June 10, 2008 had a Red Flag Warning in effect.
- C-2 The initial attack Incident Commander set-up an incident organization and made assignments to at-scene and in-coming resources.
- C-3 During the initial attack of the fire, Engine 64 made a decision to conduct structure protection based on their observed fire behavior, report on conditions from Star 8, and knowledge of a structure out in front of the fire.
- C-4 A formal transition of command between Captain 62 and Battalion 9 (either verbally or face-to-face) did not occur.
- C-5 There was not a clear acknowledgment of the Mayday transmitted by Grass 64.
- C-6 Captain 64 encountered difficulty keying the lapel mic with his gloves on due to injury to his hands.
- C-7 Multiple units were attempting to transmit at the same time.

## CAUSAL FACTORS

A causal factor is any behavior, condition, act, or omission which starts or sustains an accident occurrence. Avoiding or eliminating causal factors would prevent the occurrence. Events which sustain the occurrence sequence but were normal to the situations as they developed are not casual factor(s).

- Engine and Grass 64 were actively involved in structure protection during a rapidly developing wildland fire. (H-4)
- Firefighters approached the fire from the green. (H-2, H-3, H-4, H-6, F-1, F-2, F-3, F-4, M-1, C-3)
- Firefighters attacked the fire with unanchored hose lines. (H-3, H-4, H-6, C-3)
- Captain 64 removed his gloves after sustaining contact burns and fell an additional two times into the hot ash. (H-13, E-2, E-9, T-3, C-6)

## CONTRIBUTORY FACTORS

A contributory factor is any behavior, condition, act or omission that affected the occurrence or outcome but was not causal. Avoiding or eliminating contributory factors would not necessarily prevent the occurrence.

- Fuel, weather and topography aligned to produce a rapidly spreading fire. (F-1, F-2, W-1, W-2, W-3, W-4, T-1, T-2, T-3, T-4, T-5, M-1)
- Fire indices were historical highs.(W-1, W-2, W-3)
- Sacramento Regional Fire and EMS Communication Center dispatches all wildland responses as grass fires. (H-2, H-3, F-1, F-2, M-3, M-4)
- Residence had no defensible space. (H-4, F-2, F-3, F-4, M-1, M2, C-3)
- Sacramento County has defensible space ordinance. (M-1, M-2)

- Engine and Grass 64 had interaction with the residents of the mobile home and were advised that “she owns--her whole life is in that trailer right there.” This interaction gave the crew of Engine 64 a sense of ownership of the structure. (H-4, H-5, H-8, C-3)
- Burn over occurred during the initial attack phase of the fire. The strategy, tactics, and command structure were not clearly defined. (H-1, H-2, H-3, H-4, H-8, F-2, F-3, W-1, T-3, T-4, T-5, M-3, C-1, C-2, C-3, C-4)
- PPE functioned as designed. (E-1 through E112)
- Captain 64 donned his structural firefighting hood which helped protect his head and neck. (H-4, E-6)
- Command and tactical channels were congested. (C-7)
- Agency and Public perception is such that firefighters will assume a greater risk to protect life and property than in other aspects of wildland firefighting. (H-5)
- Immediate access to the fire was hampered by locked gates. (H-5)
- Sheriff’s Helicopter STAR 8 provided intelligence used to make tactical decisions. (H-3)
- Metro Fire does not have a specific wildland training requirement for promotion to Fire Captain. (H-11)
- Department SOP’s do not address size and volume of hoselines needed for wildland firefighting. (M-5)
- Inadequate volume of water was produced by the hoseline deployed to protect the structure. (M-5)
- Escapes and Safety Zones were under estimated and inadequate for observed fire behavior. (F-5)
- Captain 64’s wildland jacket did not have the double sleeve modification. (E-9d)
- Reduced visibility limited the firefighters’ ability to escape the fire. (H-14)
- Noise limited the ability of the firefighters to communicate. (H-15)

## **NARRATIVE OF REVIEW**

On June 10<sup>th</sup>, 2008 an interagency Serious Accident Review Team (SART) comprised of Sac Metro and CAL FIRE personnel was formed by Sacramento Metropolitan Fire District Fire Chief Don Mette. The team was tasked with investigating the burnover accident that resulted in burn injuries to Captain 64 on the Jackson Incident. The Team was led by Unit Chief Brad Harris from the NEU (Nevada Yuba Placer Unit) of CAL FIRE. The primary purpose of the investigation and review was to identify and address the events that contributed to the burnover in order that such accidents would be avoided in the future.

Chief Harris immediately set in motion the standard to have both Sac Metro management and labor represented on the team, alongside members from CAL FIRE. He also recognized the important investigation process already performed immediately after the incident by Metro Arson Investigators. As a result, they were included on the investigating team. The team was coordinated by Metro Safety Captain Mike Teague.

The Safety Accident Review Team (SART) consisted of:

Name	Team Position	Agency/Rank
Brad Harris	Team Leader	Cal Fire Unit Chief
Chris Anthony	Lead Investigator	Cal Fire Battalion Chief
Chris Waters	Fire Behavior Analyst	Cal Fire Captain
Jim Eastman	Management Representative	Metro Fire Deputy Chief
Jeff Metzinger	Operations Specialist	Metro Fire Battalion Chief
Mike Teague	Safety Specialist/Team Coordinator	Metro Fire Captain
Steve Johnson	Investigator	Metro Fire Investigator
Jeff Hickman	Labor Representative	Metro Fire Captain

## Jackson Burnover Review Report

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	Local 522	
Chuck Ingram	Labor Representative Local 522	Metro Fire Engineer

All members of the team were included in the process for determining the overview of the accident, the sequence of events, the findings, causal factors, contributory factors, circumstances, site conditions, and graphics. All interviews were conducted by a combination of Battalion Chief Anthony, Battalion Chief Metzinger, Captain Monahan and Engineer Ingram. Deputy Chief Eastman provided Metro Department oversight, and Captain Hickman provided Labor oversight.

The Team was assembled on the morning of June 11, 2008 at Fire Station 50. The team remained intact through the conclusion of the process on August 29, 2008. Metro Fire's Training Division, Logistics Division, Fleet Maintenance Division and Fire Prevention Bureau all provided support and materials in this investigation process. The team recognized the contributions of local and regional agencies in the management of the incident itself, and in the development of this report.

### ***Team Chronology***

**June 11<sup>th</sup>, 2008-** The team formed at Sac Metro Station #50. The team was briefed by the team Incident Commander, Unit Chief Brad Harris. Chief Harris explained the investigative process and gave us his expectations for the review. After the briefing the team drove out to the accident site to collect additional evidence and gather information about the burnover. Two interviews were conducted later in the day at Station #50 with Engineer 64 and Firefighter 64.

**June 12<sup>th</sup>, 2008-** The team met at Sac Metro Station #25 and inspected Captain 64's Personal Protective Equipment. The team began to develop findings based on witness statements and evidence. The Fire Behavior Analyst briefed the team on his findings. The initial Incident Commander of the Jackson fire, Captain 62, was interviewed.

**June 13<sup>th</sup>, 2008-** The team met at Sac Metro Station #25 and continued work on the report. Later in the day Captain 64 was interviewed by team members at the UC Davis Burn Center.

***-Due to fire activity the team was unable to meet during last half of June and nearly all of July-***

**July 11<sup>th</sup>, 2008-** Three members of the team met with and interviewed Battalion 9 who assumed command of the Jackson fire from Captain 62. The interview was conducted at Sac Metro Station #50.

**July 30<sup>th</sup>, 2008-** The team met at Station 25. Battalion Chiefs Metzinger and Anthony were unavailable. Battalion Chief Perkins assisted the team with operational aspects. The team began developing causal and contributory factors.

**August 18, 2008-** The team met at the Safety Division Office at 3000 Fulton Ave. All members were present. The team spoke with Assistant Chief Mike Stewart to gain information about the defensible space ordinance in Sacramento County. The team completed development of the causal and contributing factors. Final report edited.

**August 29, 2008 –** The final report was emailed to all team members. No further comments were received. The report was completed by Captain Teague. Graphics and pictures were added. All editing was finalized.

**September 5, 2008 –** The final report was present to Fire Chief Mette by Unit Chief Harris.

## **CIRCUMSTANCES**

### ***Weather Reports***

#### Forecasts:

The National Weather Service Office in Sacramento, California issued a Red Flag Warning for June 10<sup>th</sup>, 2008 which identified gusty northerly winds and low relative humidity over all of the Southern Sacramento Valley at elevations below 1000'. See Appendix A-Fire Weather Planning Forecast.

#### Observed Weather:

Weather observations were available from two locations; Ben Bolt RAWS and Mather Airport ASOS. The closest weather station to the accident site is the Mather Airport ASOS weather station. These stations are different in the way wind is sampled. RAWS stations sample winds from 20' above the ground and calculate a 10 minute average wind speed. Airport weather stations sample winds at 10 meters (30 feet) above the ground and calculate a two minute average. This fundamental difference is important when considering terrain induced wind friction and the corresponding eye level wind calculations that are made for fire spread calculations.

The nearest station to the accident site is the Mather Airport ASOS which is located two miles north of the accident site. The table below shows observations over the four hours surrounding the accident.

***Mather Airport ASOS June 10, 2008***

<b>Observation Time</b>	<b>Temperature</b>	<b>Relative Humidity</b>	<b>10m Wind Speed*</b>	<b>Wind Direction</b>
1046 Hrs.	79 Degrees	14	23/G 27	Northwest
1155 Hrs.	82 Degrees	10	21/G 32	Northwest
1245 Hrs.	82 Degrees	8	23/G 32	Northwest
1345 Hrs.	82 Degrees	11	20/G 31	Northwest

\* Two Minute Average Wind Speed

The nearest Cal Fire weather station in proximity to the accident site is the Ben Bolt RAWS in western El Dorado County. Ben Bolt RAWS is located twenty miles east of the accident site near the community of Latrobe, California. The table below shows observations over four hours surrounding the incident.

***Ben Bolt RAWS #042612 June 10, 2008***

<b>Observation Time</b>	<b>Temperature</b>	<b>Relative Humidity</b>	<b>20' Wind Speed*</b>	<b>Wind Direction</b>
1059 Hrs.	78 Degrees	31	12	Northwest
1159 Hrs.	80 Degrees	15	14	Northwest
1259 Hrs.	79 Degrees	12	22	Northwest
1359 Hrs.	81 Degrees	7	13	Northwest

\* Ten Minute Average Wind Speed

The Southern Sacramento Valley remained under a Red Flag Warning the following day, June 11, 2008, for the same weather system which persisted through the early evening of June 11, 2008. Below is a weather observation the following day for the same time as the accident at the accident location. This observation was collected manually using a Belt Weather Kit for wind direction, temperature, relative humidity, and a Kestrel anemometer to collect wind speed.

***Belt Weather Kit Observation June 11, 2008***

<b>Observation Time</b>	<b>Temperature</b>	<b>Relative Humidity</b>	<b>Eye Level Wind Speed*</b>	<b>Wind Direction</b>
1229 Hrs.	83 Degrees	15	12-15/G 20	Northwest

- Winds sampled over 5 minutes at approximately 6' with Kestrel Anemometer.

***NFDRS Outputs***

The National Fire Danger Rating System (NFDRS) is utilized nationwide as the standard for fire planning decisions and evaluating historical relative fire danger for firefighter awareness. Four NFDRS outputs are available for the accident site and are as follows: Ignition Component, Spread Component, Burning Index, and Adjective Fire Danger Rating. Values for each index are shown in the table below and graphs are attached in Appendix B.

***Ben Bolt RAWs NFDRS Outputs June 10, 2008***

<b>Observation Time</b>	<b>Ignition Component</b>	<b>Spread Component</b>	<b>Burning Index</b>	<b>Adjective Rating</b>
1059	39	113	40	High
1159	67	182	58	Extreme
1259	78	213	64	Extreme
1359	99	298	79	Extreme
Historical 97 <sup>th</sup> Percentile*	56	118	46	

\* 16 years of data.  
See attached NFDRS Graphs for each index.

***Actual and/or Predicted Fire Behavior***

Observed Fire Behavior

Examination of photos taken at the time the accident site showed a wind driven flaming front with estimated flame lengths ranging from four to twelve feet high.

### Fire Behavior Predictions

Fire behavior predictions were made using the available weather data shown above and Fire Behavior Prediction System models available in the BEHAVE. Initial calculations indicate that maximum spread rates would have ranged between 120 to 180 chains per hour or between one and two miles per hour. Maximum flame length predictions range between seven and ten feet.

## **CONDITIONS**

**Location:** The grass fire occurred in the unincorporated area of Sacramento County, California, within the Local Responsibility Area protected by Sacramento Metropolitan Fire District. The accident site was approximately 440 feet south of Jackson Highway at 10180 Jackson Highway between Bradshaw Road and Excelsior Road. (Latitude: 38° 31.282 N Longitude: 121° 18.799 W). The elevation at the accident site is approximately 60 feet above sea level (ASL).

**Topography:** At the accident site slope was recorded at 2 to 5%. The surface of the ground near the accident site was a combination of uneven areas of compacted dirt, scattered rock, one man-made trench and scattered litter and debris around the mobile home.

**Fuel Type:** The incident occurred in grass (fuel model 1).

**Fuel Moisture:**

- 1 Hour Fuel Moisture: 2%
- 10 Hour Fuel Moisture: 3-4%
- 100 Hour Fuel Moisture: 4-5%
- 1000 Hour Fuel Moisture: 6%

Based on June 11<sup>th</sup>, 2008 Fire Behavior Research, Missoula, MT – USFS- The general fuel type over the accident site was short grass which is best represented by what is traditionally referred to as Fuel Model 1. This fuel type is

characterized by fine dead porous fuels. Fuels are generally continuous and fully cured.

Fuels at the accident site were much heavier than the traditional Fuel Model 1. Average fuel bed depth is estimated to be 18 to 24 inches and likely exceeded 1 ton per acre. The heavier fuel loading was a result of the heavy thatch layer that had accumulated at the base of the grass crop over the last several years.

No evidence of recent grazing activity could be found on the property where the accident occurred. This was significant because the fire initially started in grass fuels that were much lighter and less continuous than that of the accident site.

## APPENDIX A

### *Weather Reports*

FNUS56 KSTO 101156  
FWFSTO

FIRE WEATHER PLANNING FORECAST FOR INTERIOR NORTHERN CALIFORNIA  
NATIONAL WEATHER SERVICE SACRAMENTO  
500 AM PDT TUE JUN 10 2008

...RED FLAG WARNING IN EFFECT TODAY THROUGH THURSDAY  
AFTERNOON FOR INTERIOR NORTHERN CALIFORNIA BELOW 3000 FEET...

.DISCUSSION...  
COOLER TODAY AS A DRY WEATHER SYSTEM MOVES THROUGH. FIRE WEATHER  
DANGER INCREASES TODAY THROUGH THURSDAY FOR INTERIOR NORTHERN  
CALIFORNIA BELOW 3000 FEET AS GUSTY NORTHERLY WIND COMBINES WITH LOW  
HUMIDITIES. WIND IS EXPECTED TO DECREASE SIGNIFICANTLY IN THE LOWER  
ELEVATIONS THURSDAY AFTERNOON BUT REMAIN LOCALLY GUSTY IN THE  
FOOTHILLS AND MOUNTAINS THURSDAY NIGHT INTO FRIDAY MORNING. COOLING  
TREND BEGINS INTO THE WEEKEND.

CAZ217-102345-  
SOUTHERN SACRAMENTO VALLEY IN YOLO-  
SACRAMENTO FAR WESTERN PLACER, SOUTHERN SUTTER AND SOLANO COUNTY  
BELOW 1000 FT - EXCLUDES THE DELTA-  
500 AM PDT TUE JUN 10 2008

...RED FLAG WARNING IN EFFECT UNTIL 5 PM PDT THURSDAY...

.TODAY...  
SKY/WEATHER.....SUNNY.  
MAX TEMPERATURE.....85-90.  
24 HR TREND.....9 DEGREES COOLER.  
MIN HUMIDITY.....10-20 PERCENT.  
24 HR TREND.....3 PERCENT DRIER.  
20-FOOT WINDS.....BREEZY. NORTHWEST WIND INCREASING 17 TO 27 MPH  
WITH LOCAL GUSTS 33 TO 43 MPH.  
LAL.....1.  
CHC OF WETTING RAIN.0 PERCENT.

.TONIGHT...  
SKY/WEATHER.....CLEAR.  
MIN TEMPERATURE.....55-62.  
24 HR TREND.....LITTLE CHANGE.  
MAX HUMIDITY.....32-47 PERCENT.  
24 HR TREND.....21 PERCENT DRIER.  
20-FOOT WINDS.....NORTHWEST WIND 14 TO 24 MPH WITH LOCAL GUSTS  
31 TO 41 MPH.  
LAL.....1.

## Jackson Burnover Review Report

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CHC OF WETTING RAIN.0 PERCENT.

.WEDNESDAY...

SKY/WEATHER.....SUNNY.

MAX TEMPERATURE.....86-93.

MIN HUMIDITY.....10-15 PERCENT.

20-FOOT WINDS.....BREEZY. NORTH WIND 19 TO 29 MPH WITH LOCAL GUSTS 31 TO 41 MPH.

CHC OF WETTING RAIN.0 PERCENT.

.EXTENDED...

.THURSDAY...BREEZY...CLEAR. LOWS 55 TO 65. HIGHS IN THE 90S.

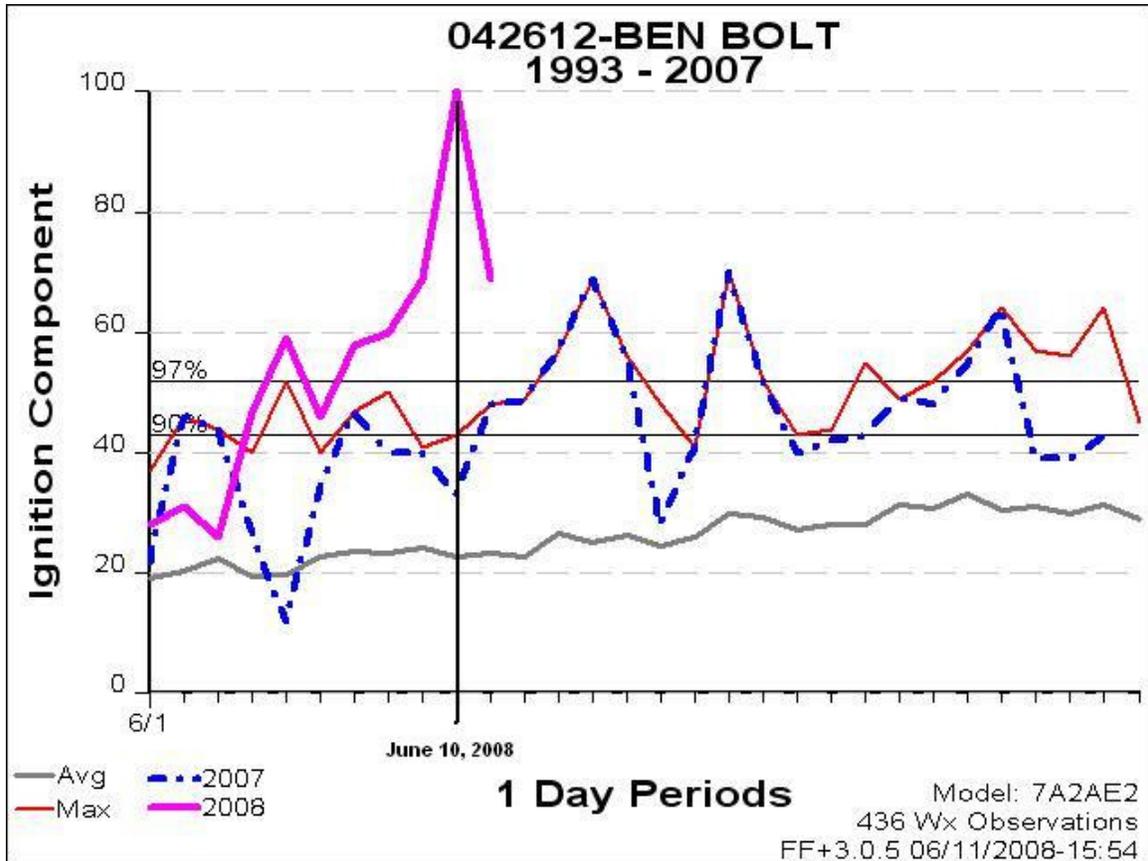
NORTHWEST WIND 15 TO 25 MPH.

.FRIDAY THROUGH SATURDAY...CLEAR. LOWS 55 TO 65. HIGHS IN THE 90S. SOUTHWEST WIND 10 TO 15 MPH.

## APPENDIX B

### National Fire Danger System Outputs

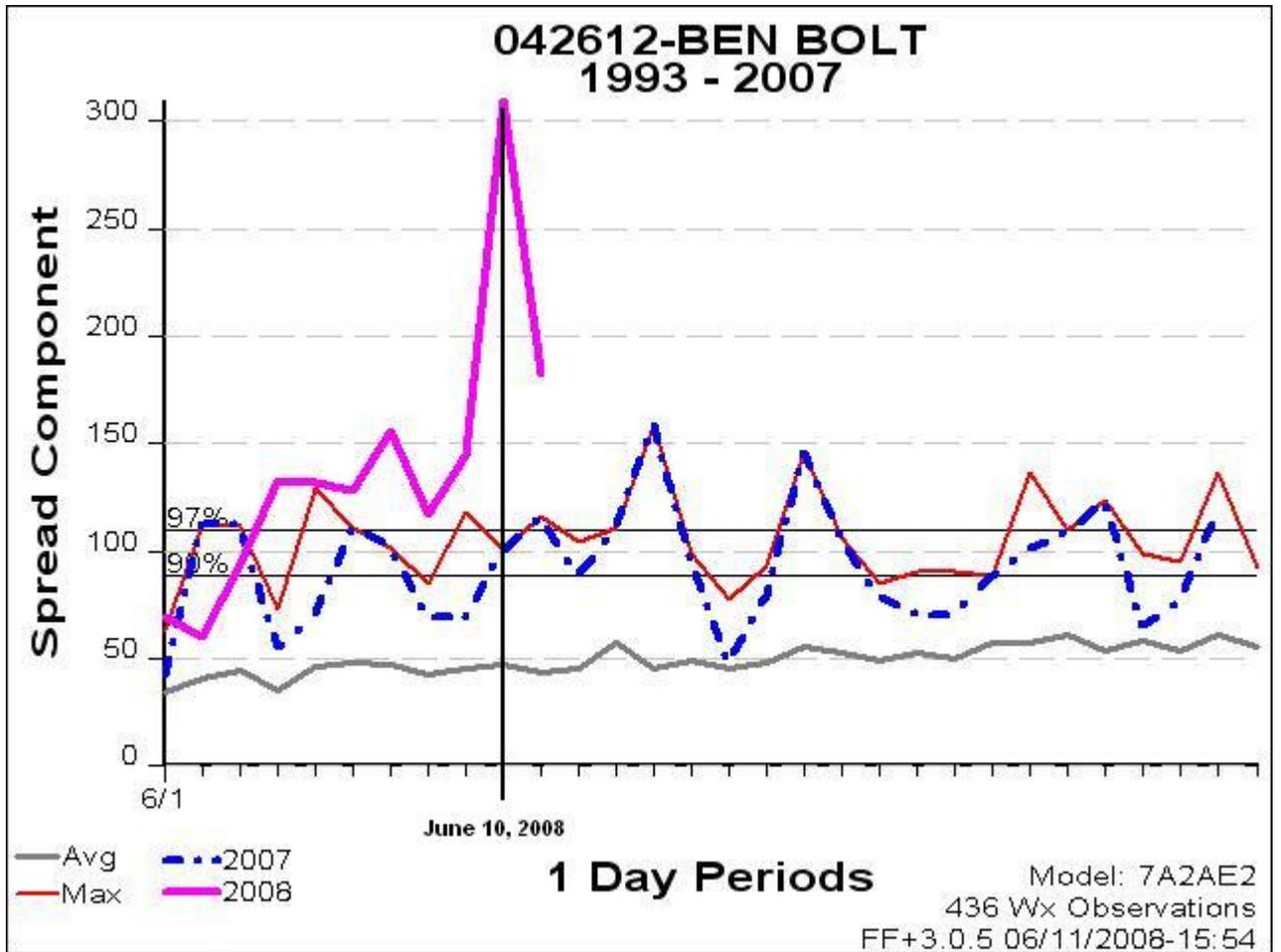
*Ben Bolt RAWS Ignition Component  
June 1993-2008*



**Ignition Component:**

*The rating of the probability that a firebrand will cause a fire requiring suppression action.*

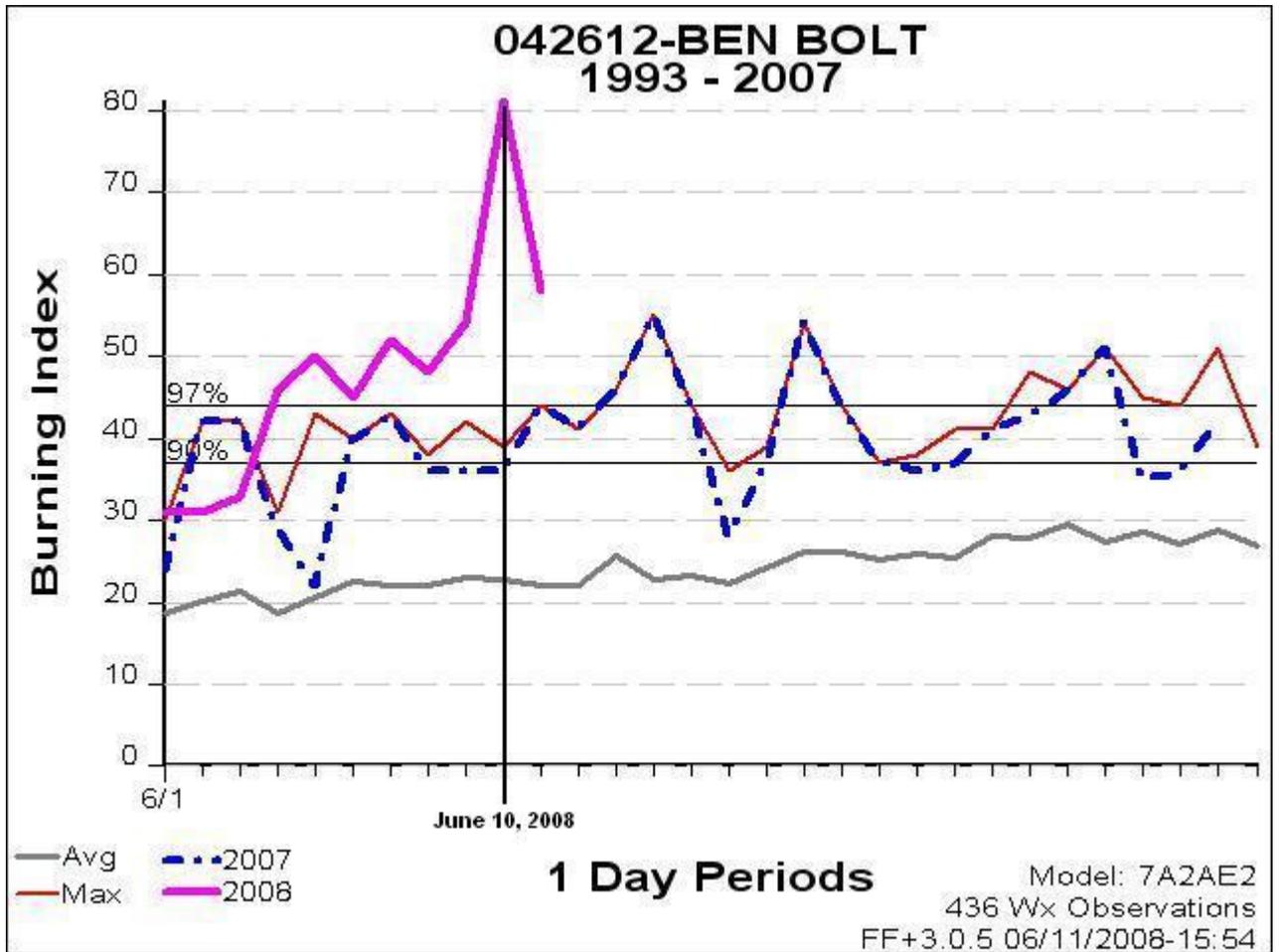
**Ben Bolt RAWS Spread Component  
June 1993-2008**



**Spread Component:**

*The rating of the forward rate of spread of a head fire.*

**Ben Bolt RAWS Burning Index  
June 1993-2008**



**Burning Index:**

*The contribution of fire behavior to the effort of containing a fire.*

## **Appendix C**

### ***Graphics***



**Burn Over Scene  
June 10, 2008**

- FireBoundary-Legend**
- Object of Note
  - Gravel Roadway
  - Hose
  - Gate
  - House Power Pole
  - SMUD Power Pole
  - X-X- Wire Fence
  - Trees
  - Unburned Car
  - Burned Van
  - Engine
  - Grass Rig



Previous Condition  
& tall dry grass

BURNED

BURNED

BURNED

BOTH VANS  
BURNED

SINGLE WIDE MOBILE HOME

CAR HOOD  
HERBIS FILE

DOWNED POWER  
POLE WITH  
ELEC. PANEL  
AND METER

Vegetation Line - Intermittent water supply supplied by 60' crew

Green (w/ST) Swath

GRAVEL ROAD

12 ft

LOG CUT  
BY OTHER  
CREWS

WATER TANK

BURNED

ROCK  
FILE

110 ft

Previous Condition  
& tall dry grass



## **Appendix D**

# ***Photographs***



**Figure 1** This picture was taken at the approximate time of the burnover. Grass 64 is obscured by the flames and smoke. They are located in the left half of the picture



**Figure 2** Aerial view of burned area. This photo was taken on August 23, 2008. The distance between the area of origin and the burnover site is about 1700 Feet.



**Figure 3** Close up of area of the burnover. The suppression line is visible along with the flagging marking the location of the reel line.



Figure 4 Wildland jacket showing heat damage to the back

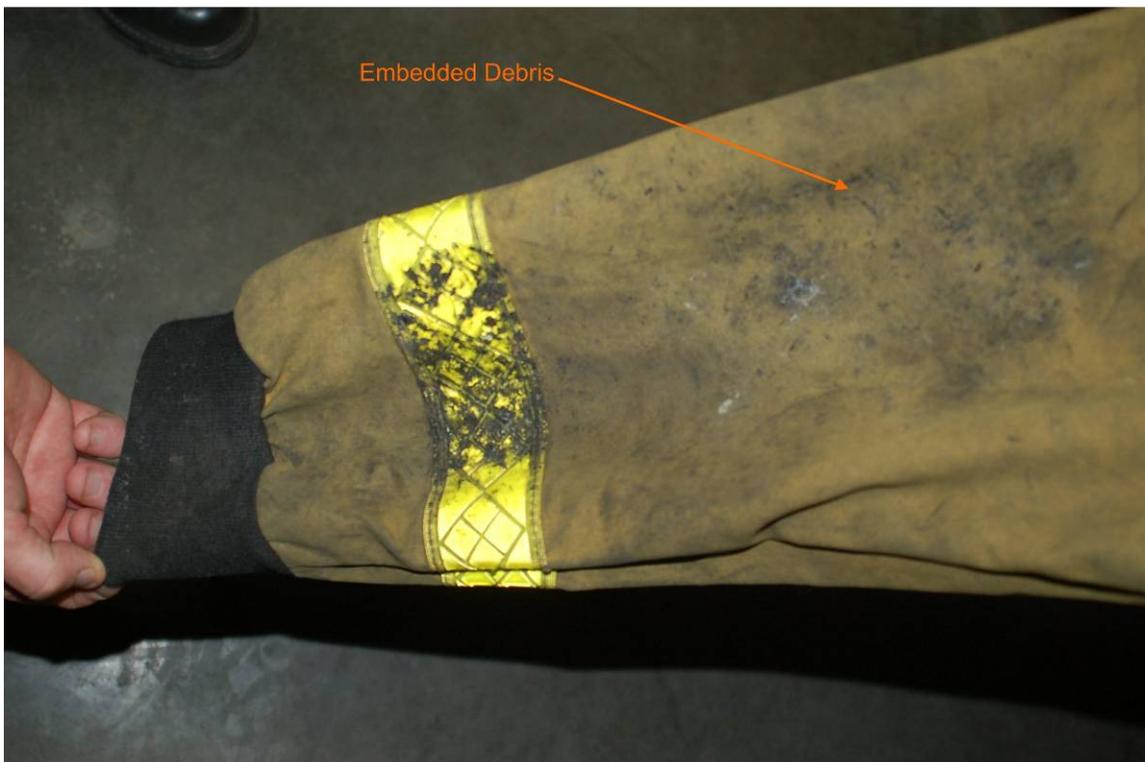


Figure 5 Left sleeve showing debris embedded into the elbow



**Figure 6 Station pants showing dye sublimation which occurs at temperatures above 500° F.**



**Figure 7 Wildland Pants showing embedded debris on both knees.**



**Figure 8 Structure gloves**



**Figure 9 Boot soles show melting and embedded debris.**

## **Appendix E**

# ***Tactical Channel A6 Transcription***

Jackson Burnover Review Report

Time	Speaker	Transcript
12:15:18	Battalion 9	B9 is up on Alpha 6 for roll call. Engine 62, Engine 54.
12:15:28	Engine 54	Engine 54
12:15:29	Engine 64	Engine 64
12:15:38	Grass 54	Grass 54 on 6
12:15:50	Battalion 9	Be advised uh, I am not sure who reported it, but it's being reported that it's gonna bump into a greenbelt and uh, we should be able to contain it. First unit on scene make that assessment, if we need to get some additional units on the road, we'll go ahead and do that.
12:17:06	Star 8	Sheriff helicopter on uh, 6.
12:17:12	Battalion 9	Go ahead, Sheriff
12:17:14	Star 8	- - helicopter STAR8 is on uh, 6. We're the one uh, updating on the fire. It looks like there is a little greenbelt uh, running right through the field. Uh, it looks like it is containing the fire so far, but we have - - announce that uh, toward the structures uh, there's a couple out there - - trailers. We've made PA, PA announcements advising them to evacuate. So far we have not seen movement uh, from that uh - -. So far not threatened, it looks like the green belts holding it.
12:17:46	Battalion 9	Battalion 9 copy, thanks for the update. Confirming that this is in uh, light grassy fuels and is the best access off of Bradshaw or Jackson?
12:17:58	Star 8	Access is going to be off Jackson. It's going to be on the south side of Jackson about a mile east of--mile and a half east of uh, Bradshaw.
12:18:07	Battalion 9	I copy, thanks.
12:18:48	Star 8	Fire update, it looks like we do have uh, three or four people actually vacating one of the trailers here. It looks like they're going to be walking northbound towards uh, Jackson here. Uh, there are no threats, they are in no

Jackson Burnover Review Report

		danger right now.
12:19:03	Battalion 9	Battalion 9 copy. Break. Grass 61, Grass 64, are you up on the back?
12:19:14	Grass 64	Grass and Engine 64
12:19:20	Battalion 9	Grass and Engine 64.
12:20:20	Engine 62	Engine 54, this is Engine 62 uh, we're right behind you.
12:20:32	Engine 54	Yeah, 54 arrived. Uh, we got uh, short grassy fuels. We're at uh, Bradshaw here and uh, taking a right flank. I want the next engine company to assume command.
12:21:07	Star 8	As far uh, to the units uh, going on scene uh, if you guys want to move to the uh, east end here it looks like it's uh, picked up a little bit of speed and that's going to be heading right to that trailer where we had uh, some uh, folks evacuated there. They're uh, still walking northbound on that gravel road uh, towards Jackson. That's going to be at the far east end of the uh, fire uh, the fire burning right there.
12:21:38	Engine 62	Engine 62 has arrived. We'll be assuming Jackson Command. Grass 54 you will be at Division Whiskey on the right flank there; Grass 62 you'll be Division Alpha, why don't you head on down and see what kind of access you can make to the left flank.
	Note	Engine 62 has assumed Jackson Command.
12:22:02	Battalion 9	STAR8, Battalion 9, Alpha 6.
12:22:06	Star 8	Star, Go ahead.
12:22:10	Battalion 9	If you can do me a favor, we're getting a report of a possibly a second fire, we don't know if it's good smoke or not uh, to the east off Excelsior. Could you uh, maybe take a quick fly over that and uh, confirm whether we do or don't have a second fire?
12:22:24	Star 8	Hey uh, we can see that area from here and uh, nothing uh, no smoke visibly yet.
12:22:33	Grass 54	Command, Grass 54 is uh, starting on the right flank.
12:22:40	Command	Copy Grass 54, you are Division Whiskey. Uh, who is

Jackson Burnover Review Report

		my next in Grass units?
12:22:46	Grass 64	Bradshaw Command Grass 64 is about a minute and a half out.
12:22:55	Command	Grass 64, I'm divi-- uh, assigning you do Division Alpha. Hook up with uh, Grass 62 and see what you can do on that left flank.
12:23:04	Grass 64	Grass 64 copies, Division Alpha.
12:23:05	Star 8	We did a PA announcement we have that trailer evacuated. Residents are standing at the gate of that gravel road.
12:23:38	Command	Grass 62 uh, Jackson Command, did you copy that?
12:23:49	Grass 62	Command repeat that.
12:23:53	Command	STAR is advising the gravel road near - - will get you access to those structures back there. Coordinate with them to get access.
12:24:01	Grass 62	Off road--we're proceeding off road right now.
12:24:09	Command	Division A, I have uh, Grass 64 reporting to you. Let me know if you need additional.
12:24:22	Battalion 9	Grass 61, Battalion 9, did you make it up on Alpha 6?
12:24:33	Command	Battalion 9, Command. They acknowledged their assignment. They are on scene proceeding to that location right now.
12:24:41	Battalion 9	I copy.
12:24:49	Command	Division A, Command
12:25:00	Star 8	- - two uh, grass units uh, going on scene uh, east of Jackson.
12:25:10	Command	STAR they're uh, Grass 62, they're not answering.
12:25:12	Star 8	Okay uh, if one of you guys can hear me, make a right, right there--that gravel road, make a right there and go through the uh, gates. That's the residents right there at the gate and uh, the fire is contained--the greenbelt - - moving south, but it's going to move uh, eastward towards the um, eastbound towards the uh, telephone poles and it'll probably jump that break uh, where that uh,

## Jackson Burnover Review Report

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		trailer and cars are.
12:25:45	Grass 64	Bradshaw Command, Engine and Grass 64.
12:25:50	Command	Jackson Command, go ahead.
12:25:55	Grass 64	-- the Engine and Grass 64 have bumped up, we're going to set up a perimeter around this trailer, the flames are coming up to it.
12:26:05	Command	Copy, can you handle with resources or do you need more?
12:26:11	Grass 64	Uh, we haven't made our way in there, but it looks like we can handle it with the Grass and the Engine.
12:26:20	Command	Division Alpha, Jackson Command.
12:26:37	Command	Grass 62, Jackson Command.
12:26:41	Grass 62	Go ahead command.
12:26:44	Command	Grass 62, be advised you're Division Alpha. I need to know what's going on over there. Do you need more resources?
12:26:51	Grass 62	Okay, we are down -- in the field and started attacking the left flank. We have reached the --
12:27:02	Command	Copy. Do you need another grass rig?
12:27:06	Grass 62	Uh, at this time yeah, if you want -- that's uh...
12:27:14	Battalion 9	Grass 62, you have fire behind you. 62, you've got fire behind you.
12:27:26	Command	B9, Jackson command.
12:27:30	Battalion 9	Jackson Command, go ahead.
12:27:34	Command	I stayed with the engine. Are you in a position where you can come pick me up? I'll give you a pass over and come over there and work on Division A.
12:27:41	Battalion 9	Yeah I am. Grass 62, Battalion 9, you've got fire behind you. You need to anchor before you go any further.

Jackson Burnover Review Report

12:27:52	Grass 62	Copy. We'll anchor.
12:27:57	Battalion 9	62, I'm up at the uh, the left flank.
12:28:09	Command	Copy. I'm here at the heel. Is there a place to park my engine, I'll drive up there if there is.
12:28:13	Battalion 9	We're going to ahead and block this uh, whole lane, so go ahead and come up and block it.
12:28:22	Battalion 9	- 62 into the black, 62 into the black.
12:28:34	Grass 61	Battalion 9, Grass 61 on A6. We're passing – at this time.
12:28:42	Battalion 9	62, or correction 61 I need you to come up to uh, the east end which is going to be the Alpha flank and uh, help out 6--62.
12:28:54	Copter 1	Battalion 9--Copter 1 on A6, we're in route - - we do have one tank of water.
12:29:02	Star 8	- - just FYI, the fire did jump the uh, greenbelt uh, it looks like it's going to be moving uh, just east of the structure but uh, probably within uh, about 20-25 yards of the structure.
12:29:43	Engine 61	Engine 62, Engine 61 what's your location?
12:29:54	Engine 62	<i>Garbled</i>
12:29:58	Star 8	All right, just FYI uh, we did make uh, the second set of evacuation notices um, and uh, so far I haven't seen any movement around the structures.
		At this point Battalion 9 assumes command
12:30:17	Command	Grass 61, Jackson Command
12:30:24	Grass 61	Grass 61, go ahead.
12:30:27	Command	Your location?
12:30:32	Grass 61	Bradshaw and Jackson.

## Jackson Burnover Review Report

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12:30:35	Command	Copy. Continuing up to where you're seeing me and then you'll uh, have this uh, section right on the road.
12:30:43	Grass 61	Copy that. Confirming we are off Jackson.
12:30:47	Command	Affirmative. -- Jackson.
12:30:52	Star 8	Okay, STAR, the fire has jumped the uh, gravel road now still uh, but it is pretty aggressively uh, eastbound--it's got a little bit taller grass for fuel. Uh, still uh, bypassing all the structures so far, uh, but we definitely need um--we definitely need some water on the eastside here.
12:31:16	Command	Battalion 9 copy. Can you give me a road location?
12:31:22	Star 8	Uh, let me pull my map up. Let me see if it's got a name, standby.
12:31:32	Engine 54	Battalion 9, Engine 54.
12:31:36	Command	Go ahead 54.
12:31:39	Engine 54	On the western flank, it's starting to go a little bit again, but it looks like it's burning into itself. Uh, we need another grass rig in here uh, did he just say get up there for structure protection?
12:32:00	Command	Negative at this time via water supply for the grass rig. Grass 54, Command have you looked ahead on your side on your Whiskey flank?
12:32:12	Grass 64	Grass 64.
12:32:17	Command	Go ahead Grass 64.
12:32:23	Grass 64	- - grass rig up at the trailer.
12:32:27	Command	Confirming you are up at the trailer now and you have structure protection, is that correct?
12:32:34	Grass 64	We need another grass rig up here to help us out at the head.
12:32:37	Command	I copy. Do the best you can. 61, pick that up right on the road.

## Jackson Burnover Review Report

12:32:44	Grass 54	Command, Grass 54.
12:32:48	Command	Go ahead 54.
12:32:51	Grass 54	You know we're cleaning up the uh, the right flank, the west flank uh, we've got a couple spots we're going to attend to. If the head is going into the green, it seems to have stopped on this flank. We're going to do a little mop up in the back of us right now. Uh, everything that is burning is burning into the black.
12:33:11	Command	I copy. That's the Whiskey Division. Everything is burning into the black, we've got uh, active fire on the Alpha side still.
12:32:20	Star 8	Okay. STAR, for the engines coming in, you guys the uh, that trailer and those vehicles are uh, now completely surrounded uh, active flames.
12:32:34	Grass 62	Command, Grass 62.
12:32:38	Command	62, hold on.
12:32:49	Star 8	- part of the grass unit that's eastbound on Jackson, keep going. If you can hear me, just keep going. Uh--let me guide you in the air. Keep going.
12:32:59	Grass 64	Grass 64, Mayday.
12:33:22	Engine 54	Command, did you hear Grass 62's May Day?
12:33:25	Command	I'm hearing Grass 62, I see Grass 62 right in front of me. Grass 55, Command.
12:33:36	Grass 55	This is Grass 55, about 10 seconds out.
12:33:40	Command	Can you hook up with 64. I am not sure of their exact location. We need to get them some help uh, they're in around some trailers, I believe coming in off Excelsior somewhere.
12:33:49	Grass 62	Command, 62 with emergency traffic.
12:33:53	Grass 64	--64--

## Jackson Burnover Review Report

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12:33:54	Command	Go ahead 62.
12:33:59	Grass 64	64 is in the down the driveway about 50 yards in front of-- declaring a mayday.
12:34:03	Command	I copy. Let's uh, get an engine down there if we can. Is the driveway right where you're at 62?
12:34:11	Grass 62	If it's in front of you, we're on our way. We'll be there in about three minutes.
12:34:17	Command	It's in front of me or is it up where 55 can get to it?
12:34:22	Grass 62	Right behind Engine 62, where it's parked on the road.
12:34:28	Grass 64	Grass 64.
12:34:30	Medic 62	Jackson Command, Medic 62.
12:34:32	Command	Medic 62, hold off, we've got a May Day. Grass 64, Command.
12:34:36	Grass 64	Command, Grass 64. We've been burned over at the trailer. We need a couple of ambulances. I need some help.
12:34:47	Command	I copy. We're getting you help. Which--are you on the west flank-- are you on the Whiskey flank or on the flank ahead--where are you at?
12:34:57	Grass 64	The flank protecting the trailer.
12:35:07	Command	I copy. Medic 62, I need you to advance to their area.
12:35:27	Star 8	STAR uh, so the east side there, just east of where uh, 64 is you've got another structure that's now uh, caught fire. Uh, it looks like a dirt road uh, accessible to the units. Uh, uh, and it goes outbound. I can uh, direct you guys in if you guys are up on this channel.
12:35:49	Command	Battalion 9, Command. Copter 1.
12:36:05	Grass 58	Command, Grass 58 we're about one out.

Jackson Burnover Review Report

12:36:13	Grass 64	Bradshaw Command, Grass 64.
12:36:21	Command	Copter 1, Battalion 9.
12:36:26	Copter 1	Copter 1, go.
12:36:29	Command	I need a thorough assessment of where 64 is by the trailer and the other structures that are threatened and where our apparatus is in comparison to where our unit is, and if you have a drop take it on the head.
12:36:41	Copter 1	Roger that. We're looking right now for him.
12:36:49	Grass 64	Command, Grass 64.
12:36:52	Command	Go ahead 64.
12:36:57	Engine 64	Grass rig and 64 are coming in - - from the trailer. We were overrun. I need an ambulance to meet us at the road.
12:37:06	Command	I copy. Medic 62 should be right in your vicinity. Um, are you down by the power lines? Do I see you coming out now?
12:37:15	Engine 64	Affirmative.
12:57:27	Command	Medic 62, Command.
12:37:30	Medic 62	Medic 62.
12:37:33	Command	I need you to take some care at the driveway where 64 went down. That's your assignment. You're assigned to patient care.
12:37:36	Command	I need you to take some care at the driveway where 64 went down. That's your assignment. You're assigned to patient care.
12:37:45	Medic 62	Copy that. We're in front of 0204 uh, this structure is being threatened we moved Engine 62 in position for structure protection. Our official location--I'm getting waived down - -
12:38:00	Command	I believe your patient is located off of Jackson right where

## Jackson Burnover Review Report

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		uh, the power pole or where the driveway was where you initially went in.
12:38:14	Medic 62	You mean on the driveway, come up, come up.
12:38:21	Command	Grass 66, Grass 65, Command.
12:38:23	Engine 64	Still in the driveway - - trailer - -.
12:38:27	Grass 66	66.
12:38:31	Command	66, your location?
12:38:34	Unknown	- - they're up there. We're trying to hold this fire so get up there.
12:38:38	Grass 66	66, we're just uh, west/east of your position.
12:38:43	Command	I copy 66 and 65 come up Jackson, go past uh, where the uh, 61 is and there's a driveway down there for structure protection. I need you to go down that driveway.
12:38:54	Unknown	Driveway, come up, come up.
12:39:03	Grass 65	Command, Grass Rig 65 copy, that's east of the fire--the driveway is east of the fire?
12:39:10	Command	That's affirmative. East of the fire, when you get ahead of it. Break. Copter 1, Command.
12:39:17	Copter 1	Copter 1.
12:39:20	Command	I need uh, some directions from your aerial observations of where this fire is going and where I can get crews into it.
12:39:26	Copter 1	Copy that. - - on it.
12:39:35	Grass 54	Command Grass 54.
12:39:43	Copter 1	Command, Copter 1.
12:39:51	Copter 1	Command, Copter 1.

## Jackson Burnover Review Report

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12:39:53	Command	Medic 62, Command.
12:40:01	Grass 54	Command, Grass 54.
12:40:04	Command	Go ahead 54.
12:40:08	Grass 54	Yeah, we got the uh, west flank uh, pretty much under control. Everything is burning into the black. Can you use over there?
12:40:21	Command	I want you to hold that side just in case we get a wind shift.
12:40:28	Medic 51	Command, Medic 51.
12:40:33	Command	Go ahead Medic 51.
12:40:36	Copter 1	Command, Copter 1.
12:40:39	Command	Go ahead copter 1.
12:40:42	Copter 1	-- the left flank of the fire -- and it looks like it's about to get a structure up here uh, access is going to have to be where the engines are setting up right now outside of the fence line to the east and uh, everything is burning toward the green and so it's running to the east.
12:41:01	Command	Copy. Are you talking about the engines you're flying over now or do we have some engines further east?
12:41:08	Copter 1	Negative. It was the engines that I was flying over just then and I am going to go -- onto the head and the head is running into the green--now it's shooting off to the east on the west flank.
12:41:21	Command	Copy. I need you to go ahead and give me a water drop and try to knock the heat of out of it.
12:41:28	Copter 1	Okay. We're gonna peel off and go to our dip site and uh, we'll be right back with another load.
12:41:35	Command	Copy. Break. Medic 62, Command.
12:41:47	Medic 50	Command, Medic 50 is on A6.

## Jackson Burnover Review Report

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12:41:51	Command	Copy Medic 50. Break. Medic 62, Command.
12:41:58	Unknown	You're about to get hit with the fire. Get ready.
12:42:02	Command	Battalion 5, Battalion 9.
12:42:07	Battalion 5	B9, B5.
12:42:15	Command	Have we made contact with Medic 62 both responding to your area and you've made contact with the crew from 62?
12:42:20	Battalion 5	I have made contact with 62 and the injured party from 64.
12:42:24	Command	I copy.
12:42:41	Medic 62	Command, Medic 62 transporting Code 3 to UC Davis.