

TEXAS STATE FIRE MARSHAL'S OFFICE

Firefighter Fatality Investigation



Investigation Number FY 11-03

Firefighter Gregory Mack Simmons

Eastland Fire Department
April 15, 2011

Texas Department of Insurance
Austin, Texas

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Eastland Fire Department

Carbon Volunteer Fire Department

Olden Volunteer Fire Department

Gorman Volunteer Fire Department

Desdemona Volunteer Fire Department

Eastland County Sheriff's Office

Eastland County Emergency Management Office

City of Stephenville Fire Department

Texas Department of Public Safety

Tarrant County Medical Examiner's Office

Texas Forest Service

Texas Commission on Fire Protection

Texas Fire Chiefs Association

National Institute for Occupational Safety and Health

And the many emergency responders to this incident

Executive Summary

On April 15, 2011, Eastland Fire Department Firefighter Gregory Mack Simmons was fatally injured and five firefighters from area departments received injuries during firefighting operations at a wild land fire. At 12:11 PM, Eastland County Dispatch Center received a report of a grass fire located on Farm to Market Road (FM) 2563, south of the city limits of Eastland, Texas. The Carbon Volunteer Fire Department responded first, arriving approximately 12 minutes after dispatch. The Eastland Fire Department units arrived within minutes of the Carbon VFD, along with units from Gorman VFD, Desdemona VFD, and Olden VFD.

The fire involved fields of overgrown brush, native grasses of bluestem and love grass, fields of coastal grass, and areas of juniper, post oak, live oak, and redberry trees. The fire moved from FM 2563 toward the southeast and east jumping several county roads, including County Road (CR) 323. The fire destroyed one residence and damaged more than twenty other buildings.

Firefighter Simmons responded to the fire scene from the Eastland Fire Station, driving Brush Unit 621 with Lt. Terry Honea riding the back, operating the pump and nozzle. Eastland Brush 621 joined Gorman VFD Brush units 5, 52, 53, and Desdemona VFD Brush 82 in a field of coastal grass through a gate on the west side of CR 323. Forming one line, the units attacked the east flank from the unburned side of the fire. After a couple of passes along the east flank, a wind shift caused the fire to move toward the firefighters, forcing an evacuation of the field as quickly as possible.

The firefighters returned to the gate where they had entered the field. Water tankers from several departments had staged on CR 323 at the gate to resupply. The Gorman units were first to make the gate and turned south, advising the tanker units to leave the area. Desdemona Brush 82 was in front of Eastland Brush 621 and stopped in the gate, blocking the egress point. The driver and the rider of Brush 82 abandoned the truck at the gate and ran to other units leaving the area. With the gate blocked, Lt. Honea could see and feel the fire approaching fast. Lt. Honea yelled at Firefighter Simmons that he was leaving. As he ran past the driver's side door, Honea could see that Firefighter Simmons was in the driver's seat. This was the last time that Lt. Honea saw Firefighter Simmons. Lt. Honea ran to Eastland Tanker Unit 620 and jumped onto the driver's side step while it was backing northbound. An air brake line connection melted, causing the truck to lose air pressure and the brakes to lock. This allowed the truck to only move in reverse. The tanker driver backed the truck northbound with zero visibility in the dense smoke by driving from ditch to ditch until he was out of the danger zone. Desdemona VFD and Gorman VFD tankers at the resupply staging area also left the scene as the fire was over-running the area.

After the fire burned over the area, an Olden VFD tanker returned to the gate area and discovered Firefighter Simmons lying unresponsive along the west side of the roadway, approximately one hundred yards north of the gate area.

Eastland County Precinct # 4 Justice of the Peace responded to the scene and Firefighter Simmons was pronounced dead at the scene. Firefighter Simmons was transported to the Tarrant County Medical Examiner's Office in Fort Worth, Texas, for a post-mortem examination.

This report is to honor Firefighter Gregory Mack Simmons by taking the lessons learned from this tragic incident so that others may not perish.

Firefighter Gregory Mack Simmons, 50 years old, was a 10-year veteran of the Eastland Fire Department.



Introduction

On Friday, April 15, 2011, the Texas State Fire Marshal's Office was notified of a firefighter fatality in Eastland County.

The State Fire Marshal's Office (SFMO) commenced the firefighter fatality investigation under the authority of Texas Government Code, Section 417.0075. This statute requires the SFMO to investigate the origin and cause of the fire, the condition of the structure, the suppression operation, and any factors that may have contributed to the firefighter fatality. The statute requires the State Fire Marshal to coordinate the investigative efforts and may enlist established fire service organizations and private entities to assist in the investigation.

Texas State Fire Marshal Paul Maldonado assigned Investigator Dean Shirley as the SFMO firefighter fatality investigation Incident Commander (IC). SFMO Investigator Donald Turk responded to the fire scene and initiated an assessment of the scene to determine the resources needed to conduct the investigation.

An action plan of assignments and objectives for the investigation was established. Shirley assigned Investigator Turk as the Origin and Cause Team Leader to coordinate fire cause investigative efforts of the on-scene personnel. At the request of the IC, the Texas Fire Chiefs Association provided a fire chief from a similarly sized department to assist in evaluating the fire ground operations. Stephenville Fire Department Fire Chief Jimmy Chew responded. The Texas Forest Service provided information regarding the wild land fire conditions and assigned Wild Land Fire Investigator Marvin Miller and Asst. Chief Regional Fire Coordinator Bob Scheel to assist in the evaluation of the fire incident.

The investigation began on April 15, 2011, with an initial assessment and survey of the involved property to determine the needed resources to conduct the investigation. Periodic updates regarding the investigation provided necessary information to the SFMO IC through on-site and daily briefings.

The Texas Highway Patrol conducted an investigation of the motor vehicle/pedestrian accident.

The National Institute for Occupational Safety and Health (NIOSH) Fire Fighter Fatality Investigation and Prevention Program responded to conduct an independent investigation.



Area of Origin

Aerial view of the area of origin.

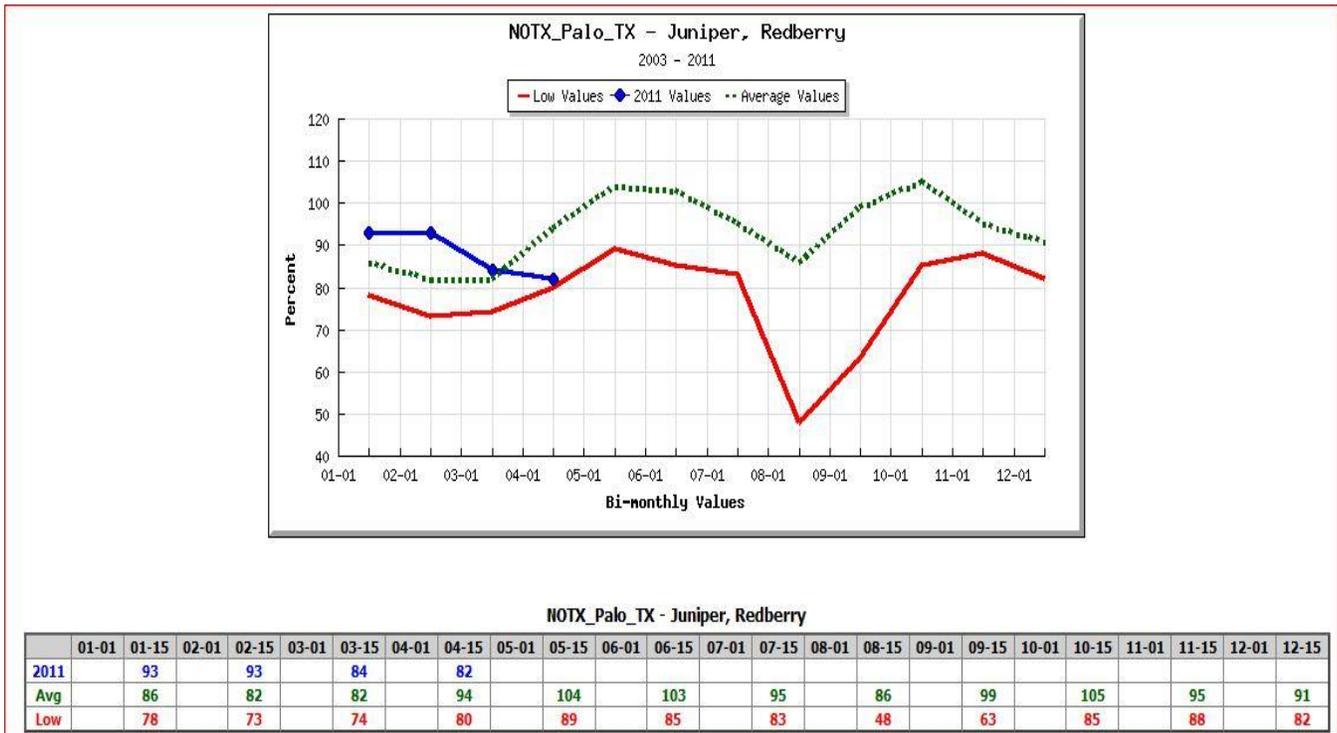
Wild Land Fire Conditions

There were no structures involved in the origin of the fire. Forecast conditions and actual observed conditions are reported by the Texas Forest Service.

On April 15, 2011, the State of Texas was in the midst of the most devastating and costly fire season period in state history. The fire season began in mid-November 2010 and by April 2011 millions of dollars in property were damaged, with no end to the drought in sight. This record drought produced extremely dry fuels, resulting in extreme fire behavior and flame lengths. Flame lengths reported by witnesses of the Eastland fire were estimated at one hundred feet. The fire in Eastland County on April 15, 2011, is known locally as the 323 fire. The Texas Forest Service lists this incident as the East Sidwynicks fire.

The fire involved fields of overgrown brush with bluestem grass, love grass, fields of coastal grass, areas of juniper, post oak, live oak, and redberry trees. The fire moved from FM 2563 toward the southeast and east, jumping several county roads including CR 323. The fire burned more than three thousand acres, destroyed one residence, and destroyed or damaged more than twenty other buildings. Weather conditions in the Eastland County area on April 15, 2011, were clear, dry, and windy with gusts to 45 mph and relative humidity dropping to single digits.

The graph below shows the live fuel moisture for that area:



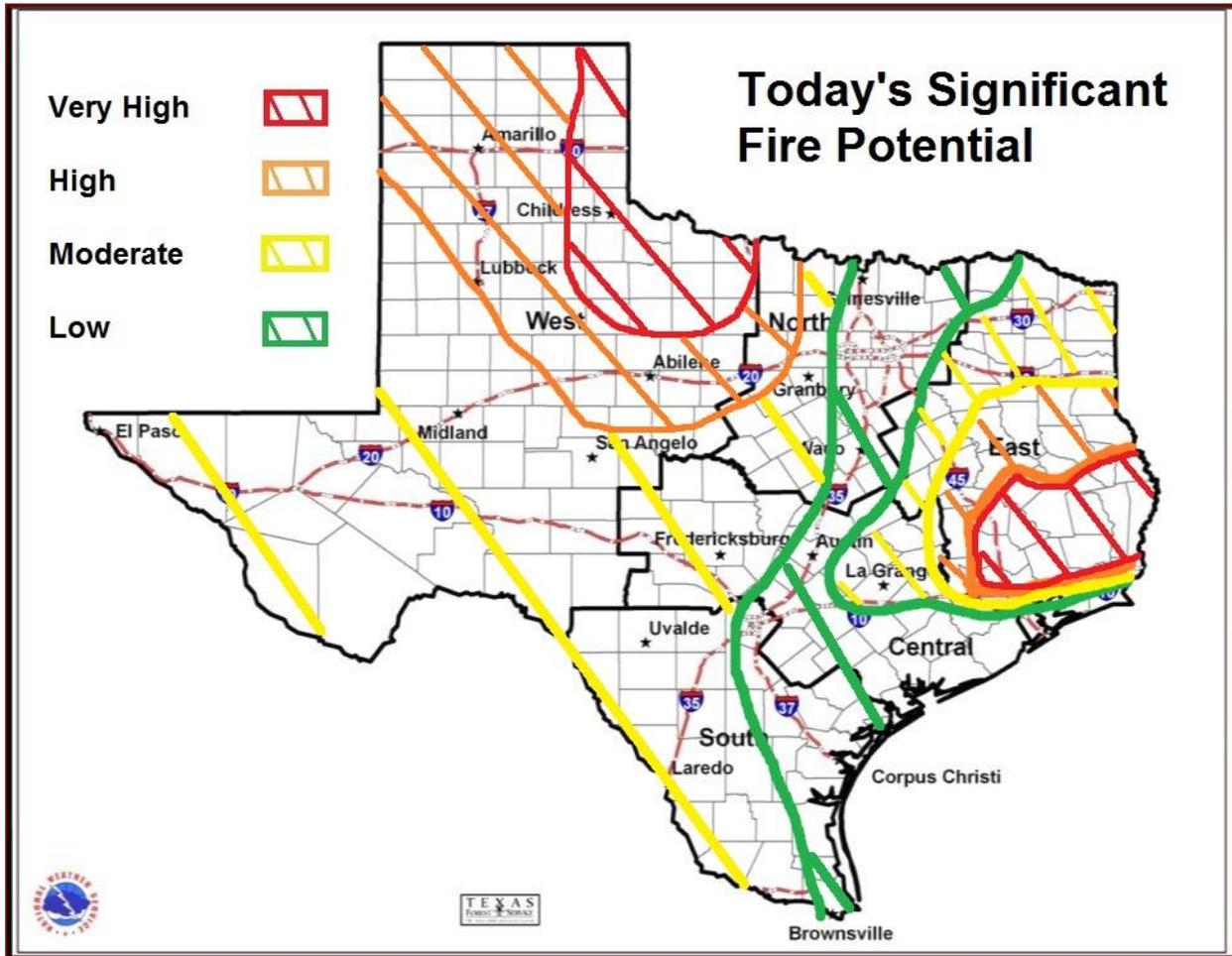
Fire Behavior Forecast by the Texas Fire Service for April 15, 2011:

FIRE BEHAVIOR FORECAST	
FORECAST NUMBER: #47	TYPE OF FIRE: Wildland
FIRE NAME: West Texas IA 2011	OPERATIONAL PERIOD: 04/15/2011 0800-2000
DATE ISSUED: 04/14/2011	TIME ISSUED: 1800
UNIT: Texas Forest Service - Abilene	SIGNED: /s/ Darrell Schulte Typed/printed:
INPUTS	
WEATHER SUMMARY	
Critical fire weather conditions today in the North Branch and central North West Branch.	
West Texas: Highs: 80's – 90's°, RH: 5 – 10% , Winds N 10 – 15, gust to 20 mph	
North West Texas: Highs: 70's – 80's°, RH: 5 - 15%, Winds: (PH) NW 25 – 30, gust to 45 – 50; Lubbock NNW 15 – 20 mph, gust 30 – 35 mph.	
North Texas: High: 80's°, RH: 10 – 20 % , Winds: NW 20 – 25, gusts to 35 mph.	
Central and South Central Texas: High: 80's°, RH: 10 – 30%, Winds: NW 15 mph, gusts 25 mph.	
South Texas: High: 90's°, RH: 5 – 30% , Winds: (Upper Rio Grande)NNW 10 – 15mph, gusts 20; Lower Rio Grande N 15, gusts to 20 mph.	
OUTPUTS	
FIRE BEHAVIOR <i>Expect the Unexpected!!</i>	
GENERAL:	
ROS's will range from 0.2 to 4+ MPH today across the Area at the higher wind speeds. Flame lengths will range from 2 – 26 feet.	
SPECIFIC:	
The GS3 (Moderate grass/shrub) fuels can have ROS's of up to 2.2+ MPH with flame lengths up to 19 feet today especially in the Panhandle, North and South Texas areas. Spotting distance of 1+ mile possible today. With predicted gusts ROS's can exceed 4.4+ mph!!	
In GR2 and GR3 ROS's can range from 1 ½ to 3.3 MPH. Flame lengths can range from 2 to 13 feet. Spotting distances up to 0.9 mile possible today. With gusts expect ROS's up to 4+ mph, with 14 ft flame lengths.	
POI in the West, Northwest and South Branch is 100 percent today. POI for, North, and Central Texas will be about 80 – 100%.	
The attached Hauling Chart assumes fine fuel moistures that range from 2 to 4 percent, with a wind speed of 15, with gusts to 55 MPH. In these very dry fine fuels watch for wind shifts and terrain effects on the direction of spread, they can happen very quickly! Hatched areas are ROS with the forecast Gust wind speeds.	
AIR OPERATIONS:	
Visibility should be good today. Winds aloft will make flying difficult, and bumpy, if not impossible.	
SAFETY	
Expect the Unexpected!!! Watch for rapid changes in ROS and Flame length with any change in the wind speed and direction! POI is 100% across most of West Texas, be careful!!	

Updated: March 2002

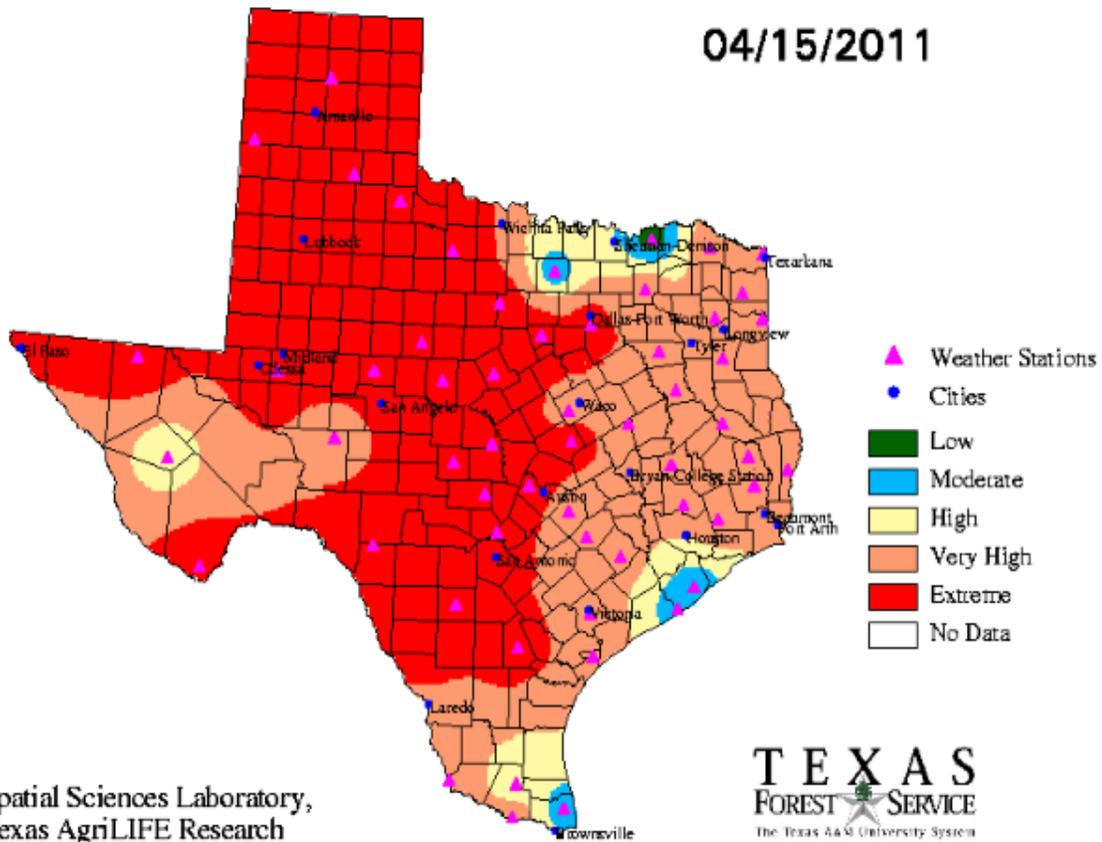
The following chart displays weather data for Eastland County on April 15, 2011, from approximately 8 AM (0800 CDT) to 3 PM (1500 CDT). It is taken from the Eastland Fire Department weather station located in the City of Eastland, approximately six miles from the area of the fire.

Time (CDT)	Temp F	Dew Point	RH	Wind Speed	Wind Gust	Wind Direction
08:00	53.4	30.9	42	7.0	13	NW
08:30	55.1	29.3	37	9.0	21	NW
09:00	57.0	27.4	32	9.0	25	NW
09:30	59.1	24.2	26	11	29	N
10:00	60.9	21.8	22	12	31	NW
10:30	62.1	19.3	19	13	29	NNW
11:00	63.9	16.8	16	15	35	NW
11:30	64.7	14.3	14	16	37	NNW
12:00	66.2	10.1	11	15	31	NNW
12:30	67.2	8.7	10	16	34	NNW
1:00	68.2	7.1	9	16	38	NNW
1:30	68.7	7.5	9	15	37	NNW
2:00	68.9	7.7	9	16	38	NW
2:30	69.5	8.1	9	14	34	WNW
3:00	69.5	8.1	9	14	32	NNW



Forecast Fire Danger map

04/15/2011



Spatial Sciences Laboratory,
Texas AgriLIFE Research
<http://www-ssl.tamu.edu>



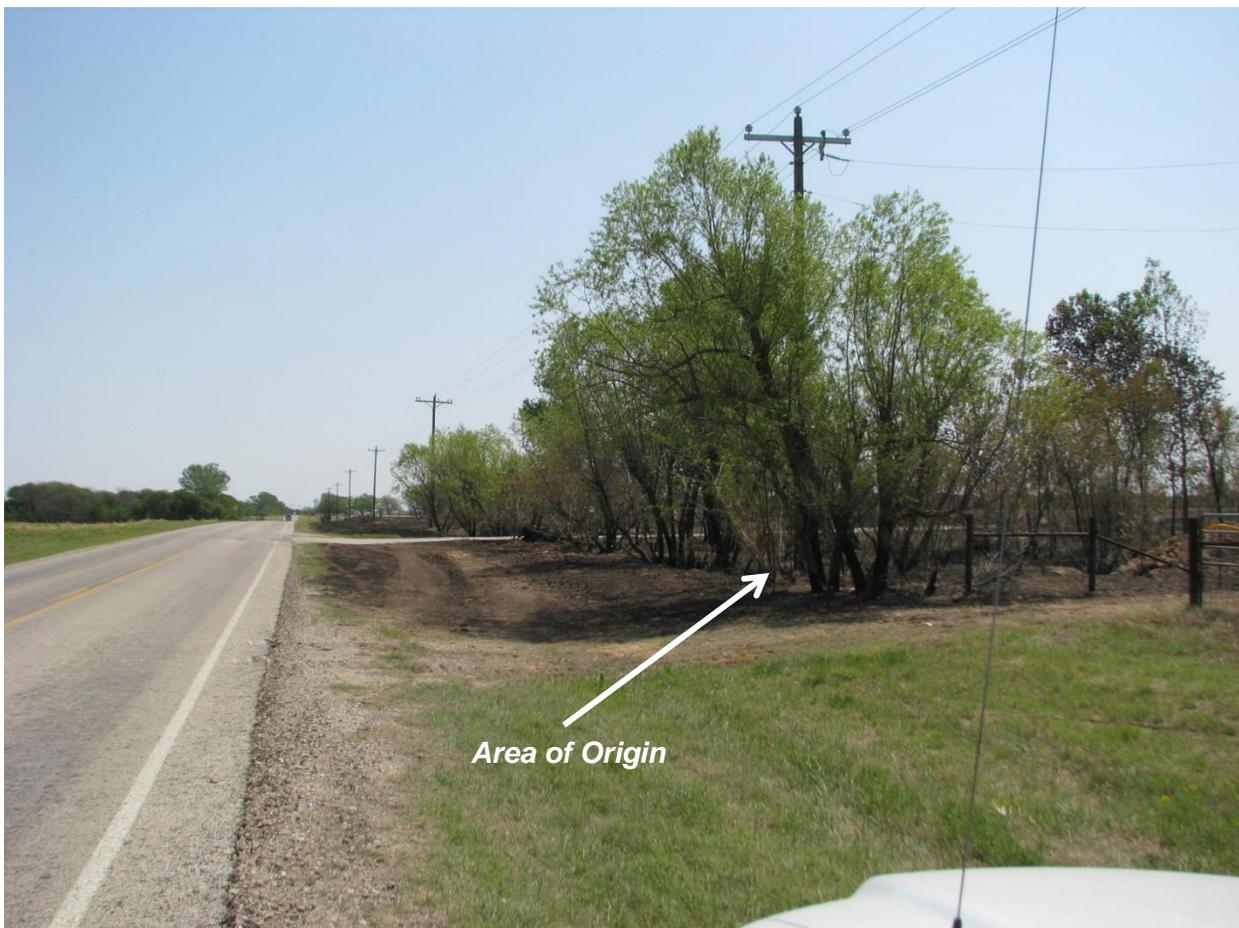
Origin and Cause Investigation

The origin and cause investigation began on April 16, 2011, conducted by State Fire Marshal's Office Investigator Donald Turk. Fire scene documentation included measurements and photographs of the area of origin, area of the injury incident including the location of the victim, and locations of responding apparatus or equipment.

During the origin and cause examination of the scene, investigators identified ignition sources, ignitable materials, fire loads; and obtained witness information. The scene was photographed throughout the examination process.

The fire was discovered by a passing motorist on FM 2563. The motorist saw a bright flash in the trees from the power lines, followed by flames in the trees and on the ground below. A call to 911 was made at 12:10 PM.

The cause of the fire was determined to be the result of electrical lines arcing in contact with the trees during high winds.



Fire Ground Operations and Tactics

Note: The following sequence of events was developed from times of events based on dispatch log and firefighter witness statements. Those events with known times are identified. Events without known times are approximated in the sequence of events based on firefighter statements regarding their actions and observations. It should be noted that no recordings of radio traffic exist and that dispatch logs are not detailed. It should be noted that the dispatch log does not indicate that all units checked out at the scene upon arrival.

On April 15, 2011, at approximately **12:10 PM**, while engaged in fighting a structure fire in the community of Gorman, Texas, Eastland County firefighters were dispatched to a grass fire near the community of Carbon. The Carbon Volunteer Fire Department Fire Chief (Chief 1) responded and was the first to arrive.

12:15: Gorman Volunteer Fire Department Brush 5 left the structure fire scene and drove towards FM 2563 en route to the grass fire. Brush 5 was staffed by two firefighters, Justin Underwood and Charlie Torrez.

Over the next few minutes several units from Gorman, Carbon, Olden, Desdemona and Eastland VFDs responded to the area.

12:22: Chief 1, driving Tanker 1, reported a “large working fire” as he approached the area from the south while traveling northbound on CR 323. The area of the fire was within the Carbon VFD response area and Chief 1 assumed command. Chief 1 established a resupply area at a gate to a coastal grass field on the west side of CR 323, assigning Desdemona VFD, Gorman VFD, and Eastland VFD tankers. Chief 1 then drove south to a residence and established a command post while protecting the residence.

12:27: Desdemona Brush 82 was en route to scene. Brush 82 was driven by a volunteer and was accompanied by a civilian passenger.

12:31: Gorman Brush 5 and Eastland Brush 621, driven by Firefighter Simmons and carrying one firefighter, arrived on the scene and attacked the heel of the fire, extinguishing hot spots on the flanks near its point of origin on FM 2563.

After emptying their tanks, both trucks were refilled from Olden VFD Tanker 7, which had arrived on the scene at FM 2563. After refilling, the three trucks drove to the resupply staging area on CR 323 where they met tankers from Gorman, Eastland, and Desdemona fire departments, in addition to the

Eastland County Precinct water tanker. Eastland County dispatched a water tanker automatically to assist in re-supply operations. The drivers and operators of the water tankers later stated they were instructed by “Command” to stage at this area and be prepared to resupply brush trucks.

Texas Highway Patrol dispatched a trooper to the area to monitor and assist in the incident. The trooper responded from the city of Eastland and drove south from FM 2563 on CR 323, arriving at the resupply staging area at approximately 13:04. The trooper’s unit was equipped with a dash camera, which recorded the scene.



View of the area on CR 323 from the north (Photo from Texas Highway Patrol dash cam).

The driver of the Eastland County Precinct water tanker arrived at the gate area and parked on the east side of the roadway, facing south. The driver used a phone camera and photographed the smoke conditions in the west field at the gate where brush trucks entered the field to fight the fire on the east flank. Water tankers at the location included Olden Tanker 7, Desdemona Tanker 8, Eastland Tanker 620, and the Eastland County Precinct Tanker.



View of the gate area to access the field to the west of CR 323 a few minutes before the wind shift (Phone camera photo by Eastland County water tanker personnel).

Chief 1 had taken Tanker 1 to a residence south of the resupply area on CR 323 and, working alone, set up to protect the structure. Two Carbon VFD brush trucks entered the west field through another gate located across the road from the residence and attempted to fight the fire at the head. The heat and smoke were too intense to continue and they retreated to the residence. The Carbon brush trucks did not make any communications over the radio when they retreated regarding the fire conditions, or that they retreated from the attack at the head of the fire.

13:04: Texas Highway Patrol Trooper Toner, with dash camera recording, arrived and parked to the south of the resupply area on the east side of CR 323. Trooper Toner noted that there were four tankers at the gate area. Eastland Tanker 620 arrived from the north and passed the resupply area heading south. It stopped a quarter mile south of the gate and began backing north.



View to the south from Texas Highway Patrol Unit as he passes Gorman Brush 5 at the resupply point at the gate area on CR 323 (Photo from THP dash video).

13:09: Trooper Toner drove to the residence south of the resupply area and passed Eastland 620, which was backing toward the resupply area. Trooper Toner stayed at the residence for two to three minutes before attempting to return north.



Carbon VFD Tanker 1 (Command 1) and a Carbon brush truck at the residence on CR 323 when DPS trooper arrives (Photo from THP dash cam video).

Eastland Brush 621, Desdemona Brush 82, and Gorman Brush units 5, 52, and 53 met in the west field across from the tanker resupply area and formulated a plan of attack. It was decided to form a line, one truck behind the next, and attack the east flank of the fire by driving in the unburned fuel east of the fire. After making one pass at the fire, Brush 52 reported being out of water and left to refill. While the attack continued at the east flank, a wind shift caused the fire to move toward the units, forcing them to evacuate the field. The line of trucks headed to the gate where they had entered the field. The turning radius out of the field was shortened by the presence of the tankers in front of the gate on the opposite side of the narrow road. As the three Gorman trucks made their way out and headed south on CR 323, Desdemona Brush 82 stopped in the gate. This blocked the gate with Brush 621 behind. The Brush 82 driver later stated that he was blocked in by a brush truck and the tankers

in front of him. The Brush 82 driver and civilian rider abandoned the truck and ran to other vehicles leaving the area.

Fire conditions deteriorated rapidly as flames extended 100 feet above tree heights. Firefighters reported seeing “fire tornados” as the fire was driven by the 25 to 35 mph winds. Lt. Honea, riding on the bed of Brush 621, saw and felt the approaching fire and yelled over the radio headset at Firefighter Simmons that he was “bailing.” Honea jumped over the bedrail and ran toward the roadway. Honea ran past Firefighter Simmons, who was still sitting in the driver’s seat. This was the last time Honea would see Firefighter Simmons. There were no mayday broadcasts by Firefighter Simmons.

Honea ran past the empty Desdemona Brush 82, nearly colliding with the open driver’s door. He then ran onto CR 323 to Desdemona Tanker 8 which was slowly moving northbound. Honea jumped onto the driver’s side step and, holding onto the mirror, yelled at the driver to move faster. When the truck did not move fast enough and the driver’s side became exposed to the oncoming heat, Honea jumped off the step and ran to Eastland Tanker 620 as it backed northward. Desdemona Tanker 8 continued northbound in zero visibility conditions. One witness stated that fire fully enveloped the entire tanker staging area, gate area, and roadway for 30 to 45 seconds.

Honea jumped onto the driver’s side step of Tanker 620 and, with the driver’s door open, tried to keep the door against his back to protect himself from the heat. The air lines of Eastland Tanker 620 failed from the heat and locked the brakes. The truck was driven in reverse with the accelerator to the floor to overcome the locked brakes. Tanker 620 backed in zero visibility through the dense smoke by “feeling his way,” steering from one side of the roadway to the other. When he felt that the truck was in the soft shoulder, the driver changed course until he hit the opposite shoulder. He continued in this manner until the truck was out of the fire zone. The driver believed that if he stopped he would not be able to move the truck again. When Tanker 620 cleared the fire zone, he continued in reverse, passing Desdemona Tanker 8, which had stopped to pick up the hose that was dragged behind the truck when leaving the resupply area in a hurry.

The Olden firefighters in Tanker 7 realized that they were about to be overrun as the trucks were exiting the field. Olden Tanker 7, with Chief 7 on board, moved east into the center of a field of unburned coastal grasses on the east side of CR 323. They stopped and set up hose lines in the short grass to protect the truck and themselves as the fire moved over the area.

The Eastland County Precinct water tanker began driving south and stopped at a disabled Gorman water tanker to pick up the crew as they were being overrun. When he stopped, the brake lines on the

tanker burst and the brakes locked. The county truck driver and rider, along with the Gorman firefighters, abandoned the water tanker and began walking south. Two firefighters received first- and second-degree burns to the ears, nose, and hands. One Gorman firefighter suffered third-degree burns to the hands.



Gorman VFD heavy tanker.

13:13:The DPS trooper left the command post/residence and traveled northbound, passing the three Gorman brush trucks heading southbound. The Gorman firefighters on the brush trucks told the trooper to turn around because it was too dangerous for him to continue. The trooper returned to the command truck at the residence. When he returned to the residence, Chief 1 asked the trooper to assist injured firefighters who were walking southbound from the disabled Gorman and Precinct tankers.



Injured Gorman VFD firefighters walking southbound (Photo taken from DPS dash cam).

13:18: The trooper again left the residence and traveled northbound searching for the firefighters. When he found the firefighters the trooper gave a lift to the two burned firefighters and the others continued on foot to the command post.

After the fire burned through, Olden Tanker 7 returned to CR 323 and discovered the abandoned Desdemona and Eastland brush trucks in the gate area. As they headed north on CR 323, they discovered the victim lying off of the west side of the roadway. They examined the victim for vital signs and none were detected.



Eastland Brush 621 in the gate area after the burn over.

The Olden VFD Chief used a cell phone to call the Eastland Fire Chief, advising him that one of his firefighters was down. Information of the downed firefighter was not broadcast over the radio as the location of the firefighter was no longer in the active fire zone, and to protect the privacy of the firefighter. The Incident Commander was not notified of the downed firefighter until later.



Eastland Brush 621 in the gate area after the burn over.

The Eastland Fire Chief responded to the location with the Olden brush truck and Desdemona Tanker. The Eastland Fire Chief contacted the Eastland County Precinct # 4 Justice of the Peace, who then responded to the scene. It was several minutes before the Judge's arrival, during which Desdemona Brush 82 was moved from the gate area. Brush 82, a four-wheel drive capable vehicle, was found in two-wheel drive mode with the engine and pump still running. Brush 621 was found with the engine and pump running. Neither truck was severely fire damaged but did sustain heat damage, melting plastic and scorching on some exposed surfaces.

Judge King arrived and examined the victim, commenced a death investigation, and documented the scene, which included photographing the scene.

13:44: Judge King contacted Eastland County dispatch to report the time of death. Edwards Funeral Home transported Firefighter Simmons' body to the Tarrant County Medical Examiner's Office for autopsy.

Firefighting operations in the area continued until approximately 9:30 PM that evening. The fire burned approximately 3000 acres and damaged or destroyed 20 structures and 1 residence.

On Saturday, April 16, 2011, the Tarrant County Medical Examiner released preliminary results of the cause of death to Judge King, as being blunt force trauma injuries consistent with a vehicle/pedestrian accident.

A Texas Highway Patrol trooper was assigned to conduct an investigation of the motor vehicle/pedestrian accident. As there were several fire apparatus in the immediate vicinity of the firefighter, the DPS trooper concluded that Firefighter Simmons, while trying to escape the fire, was struck or run over by an unknown vehicle. Witness information and examination of the fire apparatus at the location failed to reveal additional information to assist in the determination of the vehicle involved.

Personal Protective Equipment

Firefighter Simmons was wearing structural turn out pants and boots. His coat, hood, helmet, and gloves were found in the cab of Brush 621. It was determined that the PPE was not a contributing factor in the death of the firefighter.

Although wild land firefighting personal protective equipment is issued to the Eastland firefighters, many choose to wear the structural turnout equipment for the extra protection that it provides. Many of the firefighters responding to this incident were not wearing a full complement of PPE. Five firefighters were injured, sustaining burns to hands, faces, and ears.

Findings and Recommendations

Recommendations are based upon nationally recognized consensus standards and safety practices for the fire service. The State of Texas has not adopted minimum training standards for volunteer fire departments; however, all fire department personnel should know and understand nationally recognized consensus standards, and all fire departments should create and maintain SOGs and SOPs to ensure effective, efficient, and safe firefighting operations.

There were several factors that, when combined, may have contributed to the death of Firefighter Simmons. It is important that we honor him by learning from the incident.

Finding #1 – Fire suppression strategy used

Members of the first arriving units committed to an aggressive attack, a high risk with low benefit result strategy. Limited availability of personnel and resources, combined with the extreme weather conditions, dictated a low-risk strategy in which defensive wild land firefighting may have been the best option.

Recommendation: No firefighter lives should be put in jeopardy where there is no possibility of saving property and lives, or no lives are endangered. Wild land firefighting training should include recognizing when offensive versus defensive fire suppression tactics and strategies should be utilized. Since each fire is different, tactics and strategies to be employed are dictated by available resources, weather conditions, terrain, and the fuels in the local environment. Those strategies may include the use of plowed fire lines, existing roadways, and back burns away from the head of the fire.

Reference: NFPA 1561: *Standard on Emergency Services Incident Management System*, Chapter 4, Section 4-1.2

The following risk management principles shall be utilized by the incident commander.

- (a) Activities that present a significant risk to the safety of personnel shall be limited to situations where there is a potential to save endangered lives.*
- (b) Activities that are routinely employed to protect property shall be recognized as inherent risks to the safety of personnel, and actions shall be taken to reduce or avoid these risks.*
- (c) No risk to the safety of personnel shall be acceptable where there is no possibility to save lives or property.*

Reference: Texas Commission on Fire Protection Standards Manual, Chapter 435, Section 435.15, Part b, Paragraph 1 and 2

(b) The Standard operating procedure shall:

- (1) Specify an adequate number of personnel to safely conduct emergency scene operations;*
- (2) limit operations to those that can be safely preformed by personnel at the scene;*

Reference: NFPA 1143, Annex Section 5.4.2

A.5.4.2 *The safety and welfare of personnel are the first and foremost considerations in all incident operations and decisions. The following references provide basic knowledge of fire suppression safety standards and procedures:*

- (1) *Fire behavior: NWCG S-190, Introduction to Fire Behavior*
- (2) *Ten standard fire orders: NFES 0065, Fireline Handbook.*
- (3) *Eighteen “watch out” situations: NWCG-NFES 0065, Fireline Handbook*
- (4) *Four major common denominators of fire behavior on fatal and near-fatal fires, as outlined in NWCG-NFES 2225, Common Denominators of Fire Behavior on Tragedy and Near-Miss Forest Fires,* (5) *Downhill indirect line construction guidelines: NWCGNFES 0065, Fireline Handbook*
- (6) *LCES (lookouts, communications, escape routes, and safety zones): LCES Course, S-134, Lookouts, Communications, Escape Routes and Safety Zones (LCES).*
- (7) *The ten Wildland/Urban Interface Fire “Watch Out Situations”:* NWCG-NFES 0065, Fireline Handbook.

<http://www.nwcg.gov/pms/pubs/pubs.htm>

Finding #2 – Incident Command and Command Post

An Incident Commander had not been announced for the incident in a manner where everyone was aware of his presence and location. He was not located in a place visible to the incoming units and, due to lack of personnel, performed additional duties.

Recommendation: An easily visible, stationary command post should be staffed by a well-informed Commander. Having an established command post will give incoming units a reporting position and lend itself to better organization. The Commander should use every means available to gather information about the conditions on the fire ground before tactical decisions are made.

Reference: NFPA 1561: *Standard on Emergency Services Incident Management System*, Chapter 3, Section 3-1.1

The incident management system shall clearly identify who is in overall command at the scene for the duration of the incident.

Reference: Fire Command, Second Edition, *The Essentials of Local IMS*, by Alan V. Brunacini, Chapter One, The Command Post, paragraphs 1 & 2

... the stand-command position for the incident commander is a stationary one, located outside the hazard zone ... It should be situated in a standard and predictable location that affords the IC a good view of the scene and the surrounding area.

(Paragraph 2)

To a major extent, command effectiveness (or ineffectiveness) is directly connected to regular command positioning, and the entire command system revolving around the rapid establishment of a stationary, remote IC operating in a standard command post.

Finding #3 – System of accountability was incomplete

Other than inconsistent radio calls to dispatch, units and firefighters did not check in at a central location or acknowledge their arrival on the scene. No system was in place to track individual duties and activities on the scene. Therefore, the Incident Commander was not aware of all the resources he had available, their activities, or their exact location.

Recommendation: Fire departments must use a system of accountability whereby the Incident Commander can easily and immediately be able to determine not only that a firefighter is on the fire ground, but the firefighter's location and task assignment at any given time.

Reference: Texas Commission on Fire Protection Standards Manual, Chapter 435, Section 435.13, Part b, Paragraphs 3 & 4, and Part d

(b) The accountability system shall:

(3) require that all fire protection personnel operating at an emergency incident to actively participate in the personnel accountability system; and

(4) require that the incident commander be responsible for the overall personnel accountability system for the incident.

(d) the personnel accountability system shall meet the minimum standards required by the NFPA 1561, Standard on Fire Department incident Management system

Reference: NFPA 1561: *Standard on Emergency Services Incident Management System*, Chapter 2, Section 2-6 Resource Accountability, Paragraphs 2-6.2 & 2-6.3

The Emergency Service Organization (ESO) shall adopt and routinely use a system to maintain accountability for all resources assigned to the incident. This system shall also provide a process for the rapid accounting of all personnel at the incident scene.

All supervisors shall maintain a constant awareness of the position and function of all personnel assigned to operate under their supervision. This awareness shall serve as the basic means of accountability that shall be required for operational safety.

Finding #4 – Fire units were attacking from the unburned area

Units in the field were attacking the fire aggressively from the unburned area of the fire flank. When the wind suddenly changed, they were forced to retreat from the unburned area.

Recommendation: Always attack a wild land fire from the burned area. If this is done and a sudden change in conditions or wind occurs, the unit can retreat further into the black where fuel has previously been consumed.

Reference: Texas Forest Service "Attack from the Black" training DVD

"The black is the best safety zone"

Available at <http://txforestservicetamu.edu/main/popup.aspx?id=9514>

Reference: National Wildfire Coordinating Group, *Fireline Handbook*, NWCG Handbook 3, March, 2004; *Chapter 2 - Initial Attack*.

Page 92 - "Keep one foot in the black when possible"

Finding #5 – Inadequate exit strategy

Entrance and exit from the main fire field were limited to the one gate. Tankers were staged at the gate area, further limiting egress. Everyone knew where the entrance and exit to the field was located; establishing additional points to enter or exit the field was not considered.

Recommendation: Egress routes and safety zones should be well identified and communicated to everyone on the scene before fire operations begin. Staging areas should be set up so as not to interfere with ingress or egress, affording safety to firefighters using the areas. These should be established by well-understood standard operating procedures. Utilize NWCG *Fireline Handbook* LCES (lookouts, communications, escape routes, and safety zones) LCES Course, S-134, *Lookouts, Communications, Escape Routes and Safety Zones (LCES)*.

Reference: NFPA 1143, Annex Section 5.4.2

The safety and welfare of personnel are the first and foremost considerations in all incident operations and decisions.

(7) The ten Wildland/Urban Interface Fire "watch out situations": NWCG-NFES0065, Fireline Handbook.

a. Poor access and narrow congested one way roads

Reference: Texas Commission on Fire Protection Standards Manual, Chapter 435, Section 435.15, Part a

(a) The fire department shall develop, maintain and use standard operating procedure for fire protection personnel operating at emergency incidents.

Reference: National Wildfire Coordinating Group, *Fireline Handbook*, NWCG Handbook 3, March, 2004, *Chapter 1 - Firefighter Safety*

Finding #6 – Proper Personal Protective Equipment (PPE)

Firefighters were not wearing the full ensemble of approved PPE. Several firefighters sustained non-life threatening burns to hands and faces.

Recommendation: All firefighters on the scene of a fire and actively engaged in firefighting operations should be in approved full PPE suitable for the type of fire incident. Fire shelters should be considered as part of the wild land firefighting PPE.

Reference: NFPA [2007]. NFPA 1500: *Standard on Fire Department Occupational Safety and Health Program*;

Chapter 7.1.2 - *Protective clothing and protective equipment shall be used whenever the member is exposed or potentially exposed to the hazards for which it is provided.*

National Wildfire Coordinating Group, *Fireline Handbook*, NWCG Handbook 3, March, 2004; *Chapter 1- Firefighter Safety*

Page 21- All PPE must meet or exceed NFPA 1977 Standard on Protective Clothing and Equipment for Firefighters (current edition).

Page 21 – Determine and comply with host agency requirements regarding fire shelters on fireline suppression assignments or follow your own agency’s requirements if they are more restrictive. The fire shelter is a tool of last resort, not to be used tactically.

Finding #7 – Use of the vehicle as a refuge

When faced with possible entrapment by an approaching fire, the firefighters chose to leave their vehicles. Portable fire shelters were unavailable.

Recommendation: Firefighters should be trained in the use of their vehicle as a shelter when faced with possible entrapment. Although use of the vehicle should only be considered as a last resort, the vehicle as a shelter may be an option.

Reference: National Wildfire Coordinating Group, *Fireline Handbook*, NWCG Handbook 3, March, 2004; *Chapter 1 - Firefighter Safety, Pages 45-47 Vehicle Refuge*

“ ... If you find yourself in a fire entrapment situation where a shelter deployment is not possible, using a vehicle for refuge may be an option.”

Finding #8 – Responders failed to follow good safety practices

Responding firefighters were unprepared for the conditions encountered. One passenger was determined to be an untrained civilian.

Recommendation: Firefighters should be trained to operate vehicles and equipment to the level necessary for the conditions that may be encountered.

Reference: NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, 2007 Edition, *Chapter 6, Paragraph 6.2.1*

Fire apparatus shall be operated only by members who have successfully completed an approved driver training program commensurate with the type of apparatus the member will operate or by trainee drivers who are under the supervision of a qualified driver.

Reference: NFPA 1143, Annex Section 5.4.2

The safety and welfare of personnel are the first and foremost considerations in all incident operations and decisions.

Reference: Texas Commission on Fire Protection Standards Manual, Chapter 435, Section 435.15,
Part a

(a) The fire department shall develop, maintain and use standard operating procedure for fire protection personnel operating at emergency incidents.

APPENDIX

TIMELINE OF EVENTS

04/15/2011

11:53 Structure Fire reported at 311 N Fisher
11:55 Gorman E5 10-17
11:56 E5 DeLeon FD – 10-23 flame showing
11:57 T1 & B12 10-17
11:59 M6 structure fire – Gorman 311 N Fisher
12:00 501 in service on duty and en route – 311 N Fisher
12:00 M6 to 311 N Fisher
12:02 C5 reported leaking gas meter – need gas company contacted
12:03 501 needed gas company contacted
12:03 M6 - en-route to Gorman
12:03 FD requesting contact to gas company for gas leak at 311 N Fisher Fire
12:06 C5 disregarded
12:08 101 on scene
12:09 C4 on scene
12:09 T4 en route Stephens County behind Hubbard Dam
12:15 C5 Back in service
12:15 *GVFD Brush 5 left structure fire in Gorman and headed on Hwy 6 towards FM 2563 to assist with grass fire with two members, Justin Underwood and Charlie Torrez, on truck. They were one of first trucks on scene.*
12:17 Brush 2 en route Cunningham Ranch Grass fire
12:18 Carbon
12:18 M6 on scene 311 N Fisher
12:20 Cisco/Olden
12:20 *T5 left structure fire on Fisher in Gorman and proceeded to grass fire off of the Flat Wood area, FM 2563.*
12:20 *B53 carrying Stephen Watson and Adam Torrez responded from the scene of a structure fire on Fisher in Gorman to a grass fire in the Flat Wood area near FM 2563 and CR 313.*
12:21 B11 en route FM 2563
12:22 C1 large fire working
12:23 M1 en route
12:23 B52 en route to Flat Wood
12:24 B11 en route
12:24 M1 10 acres on scene just East of Sid Wynicks
12:25 RFD grass fire FM 2563
12:27 B82 en route
12:28 *Trooper Brandon Smedley contacted S.J. Toner, per Sgt. David Foster's request, to go check on fire in the Carbon area.*
12:28 B42 en route with two on board
12:28 B52 en route again
12:30 *T7 en route*
12:30 B3 and 32 en route
12:31 *B5 on scene*
12:31 M4 en route
12:31 *623 en route to CR 2563*
12:31 402 back in service
12:31 621 on scene
12:31 C1 checking tankers en route
12:34 T4 back in service and en route Cisco
12:35 621 on scene
SFMO Firefighter Fatality Investigation Case FY 11-03

12:36 T1 on scene

12:37 T5 en route, almost to Carbon

12:37 T4

12:38 C2 to Canyon Fire

12:38 *Judge Fields requesting Abilene DPS Office Texas Forest Service*

12:39 M6 in service

12:39 T6 en route to FM 2563

12:39 T620 10-17

12:44 T5 10-23

12:45 *B13 proceeded North on CR 323 until they reached the head of the fire on the west side of CR 323, approximately 200 yards north of the Carlton residence.*

12:47 5043 no air, everyone busy unless they find another team

12:47 T620 on scene

12:48 *To all units: no air, per Texas Forest Service, find another team if not on our own. From Les Sweetwater 325-928-3473. 300 acres with multiple structures threatened.*

12:51 M4 on scene

12:58 5888 PD unit Red Star fire plug, see if hose hooked up, E6 en route Red Star

13:03 C6 Red Star stage

13:03 Cisco FD en route 1 truck to Callahan

13:04:10 THP Toner parked in bar ditch past gate with cattle pens in view

13:06 M1 en route

13:07 623 on scene

13:09 THP Toner drove down FM 2563 and arrived at the Carlton residence on CR 323 where he found one brush truck and one tanker.

13:13 THP Toner left Carlton residence and headed north on CR 323, taking two firefighters to meet up with their trucks, but was advised by three passing trucks to turn around and head south to exit the area.

13:13:34 THP Toner passed third Gorman brush truck and then backed southbound to Carlton residence

13:15 623 Callahan, Stephens, Taylor

13:15 623 en route from Flat Wood

13:18 B53 Fm 2526/CR 323

13:18 THP Toner was asked by a firefighter manning the tanker at the Carlton residence to attempt to assist several injured firefighters who were on foot. S.J. Toner headed north on CR 323 towards their location.

13:19 THP Toner came upon five firefighters, two of whom were injured. He transported the two injured firefighters to an ambulance at FM 2526 for transport to a medical facility.

13:19 M1 en route fire on FM 2563

13:20 5630 in service on duty

13:24 Sending medics on any available fire

13:30 M6 386 N I-20 grass fire

13:39 Cisco FD grass fire

13:40 M1 staging Hwy 6

13:41 T4 leaving fire going to CR 104, fire Brown County

13:44 Judge Fields reported death, Judge King 10-13 CR 323

13:48 607 en-route to EMH with one firefighter

13:49 604 en route Gorman area

13:49 Cisco FD, Brown County sending 1 brush and 1 tanker

13:53 606 in service on duty w/603 – Gorman

13:55 101 requesting Judge to call cell phone

13:58 623 Billy Wright 10-22 (Cancel) at 13:58

14:03 604 on scene Gorman

14:06 5630: command at Kokomo Church

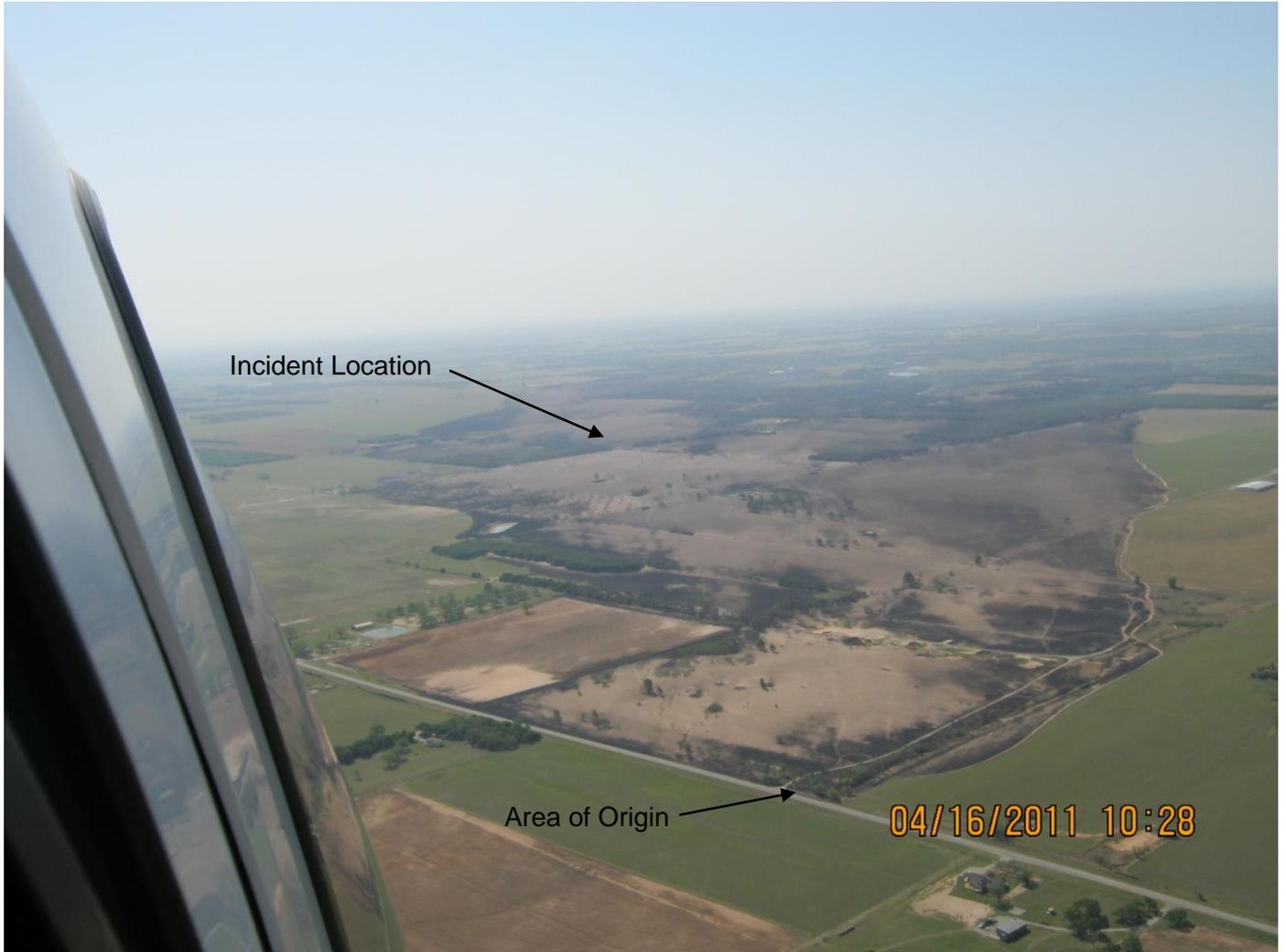
14:07 101 to have 100 call

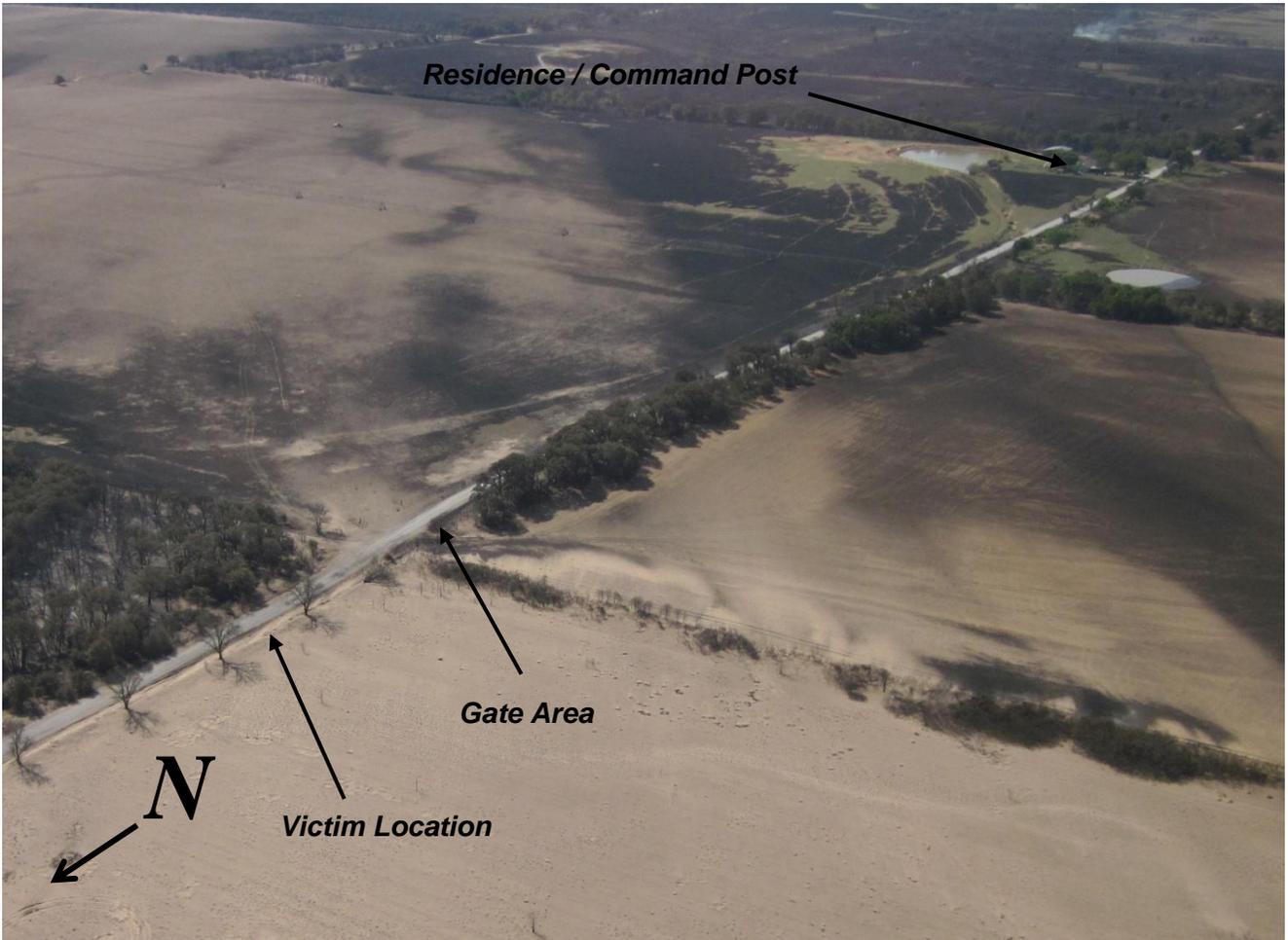
14:09 RFD en route

14:12 2526: 1 tanker and 1 maintainer Wilks
14:12 CR 104 1 tanker
14:14 607 no contact
14:14 500 Desdemona side of Gorman being evacuated
14:14 607 en-route to Bob Richardson 112 and Patterson
14:16 E4 CR 104
14:17 400 326 m/m Forrest Service and CFD, contained pretty much, tanker and dozer (Crowder)
FM 2563, load water, DeLeon PD – City Office (Kacey) Baird -
14:17 607 on scene 112 and Patterson
14:22 101 to Kokomo Church command post
14:22 C2 – 26 Gorman
14:27 Judge Fields – Red Cross at 1st Baptist Eastland, evacuating nursing home, school let out in
Gorman
14:29 C4 Baird en route
14:36 B2 on scene on FM 2526 Fire
14:38 AEP Cisco Lake Point – call Salvation Army
14:43 Cisco FD Lake Point Grass Fire
14:53 B706 on scene in Cisco
14:53 RFD 1 Truck to Commanche – Sydney
14:56 C2 Nursing home loaded – going to Baird Nursing
15:13 R4 en route Cisco Fire
15:14 623 to Texas Fire 2
15:15 402 to Cisco Fire
15:16 605 in service on duty
15:18 501 on scene to Taylor
15:18 RFD to Palo Pinto CR 207 Jackson Ranch
15:20 501 back in service
15:21 Rescue 4 CR 104 on scene
15:29 C2 needed more assistance
15:31 RFD to CR 207
15:38 Cisco FD grass fire at picnic area (329 WB)
15:38 B43 en route
15:40 108 & 107 to Cisco 100 & 101 still Kokomo
15:46 B20 on scene
15:47 B43 UTL Fire 329 WB Picnic area, hold status as is fire stopped on 2526
15:50 fire under control en route Hwy 6 CR 101
16:40 CFO Cindy Allen Hwy 6 Billy Wright started back up
17:15 5888 Fire Chief 1 said that they can go back to Gorman
17:45 Carbon grass fire Hwy 6 CR 361
17:48 C1 en route Grass Fire Hwy 6 CR 361
17:54 C1 on scene Grass Fire Hwy 6 CR 361
18:07 C1 Fire under control
18:09 203 in service on duty
18:09 208 in service on duty
18:12 5635 out of service off duty
18:14 405 in service on duty; back in service
18:14 402 back in service from 10-50
18:21 C3 en route to Carbon Fire
18:23 605 back to normal control
18:23 606 C in service on duty
18:28 101 80% contained at this time
18:40 402 out of service off duty
18:45 C3 on scene Carbon Fire
18:53 607 back in service

Photographs

Site area.





Aerial view of gate area.



Gorman VFD Heavy Tanker in ditch on west side of CR 323.



Resupply staging area. The gate to the west field is to the right of the brush truck (THP Dash Cam).



Brush truck passing the residence moving north on CR 323 (THP Dash Cam).



Area of accident (Photo courtesy of Eastland County).



EASTLAND FIRE DEPARTMENT STATISTICS

The Eastland Fire Department is a combination paid and volunteer department established in 1906. It provides service to the City of Eastland, as well as county-wide service according to mutual aid agreements and requests. Eastland FD is staffed by 31 volunteers and 3 full-time, paid firefighters. Including the paid positions, there are a Chief, two Assistant Chiefs, four Captains, and 25 firefighters on the Active Roster.

Apparatus include one 750 gallon 1250 GPM pumper, two 750 gallon 1500 GPM pumpers, one 2000 gallon tanker with a 500 GPM pump, two 1 ton brush trucks, and one rescue truck, one command suburban, and one rescue boat.

Investigation Document Log

Doc #	Description	Source
1	Eastland County Dispatch Logs	Eastland County
2	Eastland Fire Dept. Dispatch Log	Eastland FD
3	ICS Incident Report	Texas Forest Service
4	Texas Forest Service Initial Report Record	Texas Forest Service
5	John Kidd, Discovered Fire, Statement	Witness Statement
6	Dickey Norris, Discovered Fire, Statement	Witness Statement
7	Eastland FD Incident Report	Eastland FD
8	Eastland FD Weather Conditions Report	Eastland FD
9	Eastland FD Chief Arther Statement	Texas Highway Patrol
10	Eastland FD Asst. Chief Woolam Statement	THP
11	Eastland FD FF Funderburgh Statement	Eastland FD
12	Eastland FD FF Rackow Statement (Tanker 620)	Eastland FD
13	Eastland FD FF Honea statement (Brush 621)	THP
14	Carbon FD FF Bird statement	Eastland FD
15	Gorman FD Log	Gorman FD
16	Gorman FD Chief Guthery statement (Attack 5)	Gorman FD
17	Gorman FD FF Clark article (Attack 5)	Internet/WFAA.com
18	Gorman FD FF Foster (Tanker 5)	Gorman FD
19	Gorman FD FF Bussey (Tanker 5)	Gorman FD
20	Gorman FD FF Torrez (Brush 5)	Gorman FD
21	Gorman FD FF Underwood (Brush 5)	Gorman FD
22	Gorman FD FF Cogburn (Brush 52)	Gorman FD
23	Gorman FD FF Rone (Brush 52)	Gorman FD
24	Gorman FD FF Watson (Brush 53)	Gorman FD
25	Gorman FD FF A. Torrez (Brush 53)	Gorman FD
26	Desdemona FD FF Dold (Tanker)	Desdemona FD
27	Desdemona FD FF Millon (Brush 82)	Desdemona FD
28	Olden FD Chief Hunter (Tanker 7)	Olden FD
29	Olden FD FF Wooldridge (Tanker 7)	Olden FD
30	Olden FD FF Whittington (Tanker 7)	Olden FD
31	Eastland County Employee Maxwell (Tanker)	Eastland County
32	Eastland Co. employee Monroe (tanker)	Eastland Co.
33	Statements from Ranch hands (4)	THP
34	Statement from landowner	THP
35	Judge King info	THP
36	Texas Highway Patrol report	THP
37	Autopsy Report, Dr. Peerwani, M. D.	Tarrant Co. ME Office
38	Photo and Video discs	

References

1. NFPA [2009]. NFPA 101: *Life Safety Code*, 2009 Edition. Quincy, MA: National Fire Protection Association
2. NFPA [2008]. NFPA 921: *Guide for Fire and Explosion Investigations*, 2008 Edition. Quincy MA: National Fire Protection Association
3. NFPA [2007]. NFPA 1500: *Standard on Fire Department Occupational Safety and Health Program*. Quincy, MA: National Fire Protection Association
4. NFPA [2008]. NFPA 1521: *Standard for Fire Department Safety Officer*. 2008 Edition. Quincy, MA: National Fire Protection Association
5. NFPA [2008]. NFPA 1561: *Standard on Emergency Services Incident Management System*, 2008 Edition. Quincy, MA: National Fire Protection Association
6. NFPA [2004]. NFPA 1710: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medicals Operations, and Special Operations to the Public by Career Fire Departments*, 2004 Edition. Quincy, MA: National Fire Protection Association
7. NFPA 1143, *Standard for Wildland Fire Management*, 2009 Edition; Annex Section 5.4.2
8. Texas Forest Service "Attack from the Black" Training DVD. Available at <http://txforestservicetamu.edu/main/popup.aspx?id=9514>
9. National Wildfire Coordinating Group, *Fireline Handbook*, NWCG Handbook 3, March, 2004
10. U.S. Occupational Safety and Health Administration Respiratory Protection Standard, CFR 1910.134
11. Texas Commission on Fire Protection Standards §435
12. IFSTA [2008]. *Essentials of Fire Fighting and Fire Department Operations*, 5th ed. Oklahoma State University. Stillwater, OK: Fire Protection Publications, International Fire Service Training Association
13. U.S. Department of Homeland Security - Federal Emergency Management Agency, *ICS Management Characteristics* <http://www.fema.gov/emergency/nims/ICSpopup.htm#item5>