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UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION
(Surface Coal Mine)

Fatal Powered Haulage Accident
March 17, 2003

Tico Trucking Company (C229)

at

Star Fire Mine
Star Fire Mining
Ary, Perry County, Kentucky
ID No. 15-13936

Accident Investigators
Lester Cox, Jr.
Coal Mine Safety and Health Inspector

Arthur V. Smith
Coal Mine Safety and Health Inspector, Surface

Ronald Medina
Mechanical Engineer

Originating Office
Mine Safety and Health Administration
District 7
3837 S. U.S. Hwy. 25 E, Barbourville, Ky. 40906
Joseph W. Pavlovich, District Manager

Report Release Date: April 25, 2003

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OVERVIEW

On Monday, March 17, 2003, at approximately 6:10 p.m., William D. Hollins, age 48, a truck driver employed by Tico Trucking Company, an independent contractor, was fatally injured when the truck he was operating either stalled out or lost traction and began rolling backwards down the inclined roadway. The victim jumped from the truck and was fatally injured by one of the front wheels of the truck as the truck rolled backwards down the steep haulroad of the Kitchen Fork No. 7 coal pit. There were no eyewitnesses to the accident.

Investigation revealed that the No. 7 coal pit haulroad was on a 15% grade. The service brakes provided for the coal trailer were inoperative due to the air supply hoses were connected to the wrong couplings on the trailer. The truck tractor's differential gears were not, in the locked in position, only the right side wheels were pulling. The seat belt was not being worn.

GENERAL INFORMATION

The Star Fire Mine is a surface coal mine located approximately one mile from the Talcum exit of Kentucky route 80 East. The mine, operated by Star Fire Mining, produces bituminous coal and employs 172 people. The mine has two production shifts per day and operates seven days per week. The coal is mined from four coal pits consisting of: one Marion 8050 drageline, one P&H shovel, and two Caterpillar 992G end loader pits. The Mine produces 6,000 tons of coal per day from the Hazard number 7, 8, 9, and 10 coal seams. Independent contractor companies transport the coal from the coal pits to various customers off of the mine site. Star Fire Mining is a United Mine Workers of America (UMWA) member.

The principal officers for Star Fire Mining are:

Eugene Robertson	Superintendent
Roger Neace	Safety Director

Tico Trucking Trucking Company, an independent contractor, transports coal from the coal pits to various locations off site. Tico Trucking Company owns four tractor-trailer coal trucks. Tico Trucking's business office is located at Hindman, Kentucky. At the

time of the accident only one of Tico Trucking Company's trucks was hauling from the Star Fire Mine site.

The principal officer for Tico Trucking Company is John Taylor, Owner.

The last regular safety and health inspection (AAA) conducted by the Mine Safety and Health Administration was completed on March 3, 2003. The Non-Fatal Days Lost (NFDL) Incidence rate for Star Fire Mining is 3.96. The NFDL rate for the nation for surface coal mines is 2.17. The NFDL for Tico Trucking Company is 0.0 and the national rate for all contractors is 3.83.

DESCRIPTION OF THE ACCIDENT

On Monday, March 17, 2003, William D. Hollins (victim) started his shift at approximately 6:00 a.m. at the Tico Trucking Company's parking lot and office area, located on new Hwy. 80 East near Hindman, Kentucky. Hollins started his 2002 model Peterbilt tractor- trailer coal haul truck and traveled to Star Fire Mining. Hollins' truck was then loaded with about 60 tons of coal by end loader in the Kitchen Fork No.7 coal pit.

Hollins then hauled this first load of coal to the Twin Energies coal tipple located approximately 20 miles away in Jeff, Kentucky. While attempting to dump the load of coal, the hydraulic hose, which raises the dump bed of the trailer, ruptured. Hollins contacted the Tico Trucking mechanic about the ruptured hose.

Tico Trucking mechanic Johnny K. Stacy, Jr. arrived and replaced the ruptured hose and replaced the hydraulic oil that had been lost from the ruptured hose. Hollins and Twin Energies mechanic Bradley Marlow assisted Stacy. Hollins then finished dumping the load of coal at approximately 11:00 a.m.

Hollins left the Twin Energies tipple and returned to Star Fire Mining. Hollins had to wait before he was able to reenter the Kitchen Fork coal pit. The access roadway for the coal pit had to be cleared of materials from a planned blast before it was opened for traffic. During this time he and three other truck drivers chatted with each other. Once the material was removed a road grader touched up the roadway. Hollins and three other truck driver's then entered the Kitchen Fork No. 7 coal pit. Two Caterpillar end loaders started loading the trucks about five minutes apart.

Kenneth Griffitts, driving a truck owned by L & M Transport, was loaded with coal and left, without any problem, traveling up the inclined roadway. The access roadway provided for the Kitchen Fork No. 7 coal pit is a 15.8 percent incline. At approximately 6:05 p.m. Hollins then left the coal pit with his truck fully loaded, approximately 60 to 65 tons. The next truck, owned by Bowling Trucking, to leave the coal pit was being operated by Jerry Joseph.

At approximately 6:10 p.m. as Joseph was leaving the coal pit and approaching the inclined access road he saw Hollins' truck wrecked on the inclined road with the trailer overturned on it's left side and the tractor's right wheels in the air. Joseph called for help on his CB radio and talked to one of the loader operators in the coal pit and informed him of the accident. Joseph found Hollins laying on his back on the roadway approximately 17 feet up-hill from the front of the truck. Joseph checked Hollins' pulse and he said that it was apparent that Hollins was dead.

Investigation of the wrecked truck and the scene revealed that the truck traveled backwards uncontrolled along the 15 percent grade for approximately 110 feet, during which time Hollins jumped from the truck and was crushed by one of the front wheels of the tractor. As the truck moved backwards the steering axle wheels of the tractor slid approximately 50 feet and the left front wheel climbed the berm located along the driver's side of the road. The left front wheel rode on top of the berm for approximately 50 feet before coming back onto the road. The right rear wheels of the trailer rode upon the passenger side berm and traveled backwards and overturned onto the roadway. The "Glad Hand" coupling, provided for the trailer's emergency brake system, that connects to the trailer's air system from the tractor's air hose was forced apart by the wreck, causing the trailer's emergency brakes to apply after the trailer overturned. The tractor's emergency brake system was not applied. The trailer's hand brake located on the steering column was not applied. The truck's transmission was in the low second gear position. The axle differential lock was in the "off " position, allowing only the tractor's passenger side wheels to pull the entire truck. Evidence suggests the seat belt was not being worn. The air hose from the tractor which supplies pressure to the trailer's service brakes was found to be connected instead to the trailer lift (suspension) system, therefore the trailer brakes were inoperative prior to and during the accident.

The loader operator notified Janet Stevens, the truck ticket attendant, at her workstation and informed her of the accident. Stevens called 911. Stevens notified Mark Welch, Medical Emergency Technician (MET), Randy Riley, (MET), and Howard L. Scott, (EMT) of the accident and they traveled to the site. They preformed CPR and administered oxygen to Hollins. The Knott County EMS ambulance service was notified at 6:20 p.m. and traveled to the site, arriving at 6:40 p.m. Perry County deputy coroner Derek Hall was notified at 6:48 p.m. by 911 and he arrived at the site at 7:20 p.m. Hall pronounced Hollins dead at 7:28 p.m. and removed his body.

Investigation of Accident

At approximately 6:30 p.m. on Monday, March 17, 2003, John Dishner, Coal Mine Safety and Health (CMS&H) Inspector of the Hazard, Kentucky MSHA field office was notified by Roger Neace, Safety Director for Star Fire Mining, of a fatal haulage accident that had occurred at the mine site. Dishner notified Jim Fields, Supervisory Coal Mine Safety and Health Inspector, of the accident, Fields dispatched Dishner to the accident site. Dishner traveled to the site and issued a 103-k order to ensure the safety of the miners and to preserve the accident scene.

Fields notified William Johnson, Supervisory CMS&H Inspector of the Barbourville field office, who subsequently notified John M. Pyles, District 7 Assistant District Manager for Enforcement. Pyles informed Johnson to form an Accident Investigation Team and dispatch them to the scene.

Johnson promptly notified Lester Cox, Jr., CMS&H Inspector and dispatched him to the scene. Cox traveled to the Hazard, Kentucky field office and met with Dishner. Dishner briefed Cox about the accident and they traveled to the accident scene. Preliminary information was gathered and the accident scene was examined.

On March 18, 2003, Cox returned to the scene along with William Johnson, Supervisory CMS&H Inspector, Arthur V. Smith, CMS&H Surface Inspector, and Ronald Medina, Mechanical Engineer, Mechanical Safety Division of MSHA's Approval and Certification Center. An on-site investigation and subsequent testing and evaluation of the Peterbilt tractor-trailer coal truck and haulage roadway was conducted. On March 19, 2003 the Accident Investigation Team returned to the site to continue the investigation.

On March 19, 2003 a wrecker owned by Martin's Peterbilt of Eastern Kentucky, located in London, Kentucky, was used to remove the truck from the roadway. The Peterbilt tractor-trailer was then taken to Martin's Peterbilt shop in London, Kentucky.

On March 20, 2003 the Accident Investigation Team traveled to Martin's Peterbilt shop location and continued the investigation of the tractor-trailer. The condition of the truck's engine did not allow for it to be operated, components on the engine were damaged during the accident. A towing wrecker was provided by Martin's Peterbilt to be used to supply air to the tractor-trailer's air brake system for testing. An external air pressure source from a towing wrecker was connected to the air system of the truck involved in the accident and all the air reservoirs were pressurized to 100 to 120 psi and the air chamber push rod movements were measured. The tests were first done with the tractor-to-trailer air lines connected as they were at the time of the accident. When the service brake was applied, the pushrods and brake linings on the trailer did not move since the air lines were incorrectly connected. Instead, the suspension bladder under center trailer axle (axle # 5) visibly inflated. Despite the hose reversal the tractor service brakes remained functional. Half the service brakes therefore functioned and half were nonfunctional. The absence of braking action on 50% of the vehicle's axles caused it to be out of service according to criteria established by the Commercial Vehicle Safety Alliance (CVSA) and not suitable for highway use. The CVSA North American Uniform Out-of-Service Criteria are nationally recognized by the trucking industry for highway trucks.

During the testing of the truck's brake system it was discovered that the "Glad Hand" air hose couplings provided for the trailer's service brake and axle lift were reversed. The air supply hose provided for the service brake was hooked-up the trailer's axle lift coupling and the air supply hose provided for the axle lift was hooked-up to the trailer's service brake coupling. When the service brake would be applied, it would operator the

axle lift. The air supply hoses were later connected to the correct glad hand couplings and all of the brake system components were found to be functioning properly.

MSHA and the Kentucky Department of Mines and Minerals (KDMM) jointly conducted the Investigation with the assistance of mine management, other coal truck drivers, and United Mine Workers of America (UMWA) representatives. Formal interviews were conducted at the KDMM Hazard, Kentucky office on March 18 and March 24, 2003. Eight interviews were conducted. None of those interviewed requested that their statements be kept confidential. A list of those who were present and/or participated in the investigation is included (see appendix A).

Discussion

1. The accident occurred along the Kitchen Fork No.7 coal pit haul roadway. The grade of the roadway was 15.8 percent. The roadway was approximately 20 feet wide. The roadway appeared dry and hard packed with some gravel showing on the surface.

2. The tractor was a 2002 Peterbilt and Mac Trailer Manufacturing Inc.manufactured the trailer.

3. The brakes provided for the tractor and trailer were maintained in good condition.

4. There are four air hoses attached from the tractor to the trailer. The "Glad Hand" type air hose couplings were all interchangeable with each other. The glad hand fittings had been spray painted different colors but the paint was oil covered. The oil coated orange and gold metallic colors used for the service brake and axle-lift glad hands were not clearly distinguishable. The remaining two glad hands were painted blue (tailgate) and white (emergency). The service brake air hose and the suspension/axle lift air hose were coupled to the wrong glad hand couplings of the trailer, they were reversed, leaving the trailer without service brakes.

5. A hydraulic hose that supplied the hoist lift cylinders to raise the trailer bed was connected to the trailer between the service brake and axle-lift glad hands. This hydraulic hose had been ruptured and replaced earlier on the day of the accident

6. The emergency/parking brake system (red button) for the trailer was applied during the accident when it's "Glad Hand" air hose coupling was dislodged when it was struck by the twisting of the tractor's frame.

7. The emergency/parking brake system (yellow button) for the Peterbilt tractor had not been applied.

8. The tractor's transmission was found in the second low gear position.

9. The tractor's differential lock was in the "out" position, causing only the passenger side wheels to have traction.

10. The victim had hauled one load of coal weighing about 60 tons, from the Kitchen Fork No. 7 coal pit on the morning of the accident.

11. The seat belt provided in the truck was not in use at the time of the accident. The male end of the seatbelt was only nine inches from its mounting bolt, making it impossible to buckle with the female end.

12. The berm provided along the roadway was sufficient.

13. Skid marks from the two wheels of the steering axle were present on the roadway surface for approximately 50 feet, indicating where the service brake was applied and released as the truck descended back down the roadway.

14. The truck traveled back down the roadway for a total of 110 feet before it came to a stop with the trailer laying on it's left side with the tractor still attached and it's passenger side front wheel approximately 18 inches off the ground.

15. Loaded trucks have to be pushed by other large self-propelled mobile equipment up the Kitchen Fork No. 7 coal pit roadway incline at certain times.

16. The victim's body was located on the roadway 17 feet in front of the tractor and three feet from the left edge of the roadway.

17. The victim had 27 years of experience as a truck driver, with 20 weeks of experience driving for Tico Trucking Company.

18. A review of records and information provided by the company indicated that the victim had received the required Part 48 training and hazard training.

ROOT CAUSE ANALYSIS

A root cause analysis was conducted. The following causal factors were identified.

Causal Factor: Brake air hoses/couplings confused.

The air hose "Glad Hand" coupling from the tractor, which supplies air pressure to the service brakes of the trailer, was coupled to the trailer suspension/lift system, leaving the trailer without service brakes. There were four air hoses from the tractor to the trailer. The air hose couplings were all interchangeable with each other, but would not control the proper functions of the trailer when connected to the wrong coupling.

Corrective Action: Labels should be placed and kept in place on both ends of glad hands/air hose connections. The independent contractor should create a task procedure for connecting/disconnecting air hoses between tractors and trailers and train all employees in the same.

Causal Factor: Steep road grade.

The haul road leading to/from the Kitchen Fork No.7 coal pit was on a 15.8 percent grade. The truck transmission was in low second gear (too high for this grade) and the differential lock was "out", causing only the passenger side wheels to have traction. There were only two of the wheels of this truck which were causing the truck to move forward. Heavy equipment was routinely used to push coal trucks up this road.

Corrective Action: Management should issue policy that all haul roads be constructed and maintained on such a grade that trucks will not need to be pushed by heavy equipment.

Causal Factor: Seat belt not worn.

The victim did not wear the seat belt.

Corrective Action: Management should issue policy that seat belts are worn at all times by truck drivers. Management should strictly enforce this policy.

Causal Factor: Truck axle differential not locked in while ascending the grade.

The truck axle differential was not locked in, causing only the two wheels on the passenger side of the truck to have traction. Only two of the 22 wheels on this truck were causing the truck to move forward.

Corrective Action: Management should implement a safety procedure insuring truck axle differentials are locked in before ascending hills. All drivers should be trained accordingly.

CONCLUSION

It is the consensus of the investigation team that William D. Hollins received fatal injuries on March 17, 2003 after jumping from the 2002 Peterbilt tractor-trailer coal truck he was operating. As Hollins was traveling up the 15.8 percent inclined roadway from the Kitchen Fork No.7 coal pit, the truck either stalled out or lost traction. The truck then started to roll back down the inclined roadway. Hollins applied the service brakes in an attempt to stop the truck. The service brakes of the trailer were inoperative due to the air hoses being connected in the wrong positions. The trailer, loaded with approximately 60 tons of coal and material, began to pull the tractor back down the inclined roadway. After the trailer pulled the tractor for approximately 50 feet downhill, Hollins released the service brake and jumped from the driver's side of the tractor. At the time the service brake was released the drivers side (left) steering axle wheel rode upon the spoil bank berm and traveled approximately 50 feet along the berm before coming back down onto the roadway, where the truck came to a stop. The uneven footing and steep spoil bank area where Hollins jumped from the truck and landed caused him to either fall or be caught and pulled into the path of the moving tractor.

ENFORCEMENT ACTIONS

Order No. 7473124 was issued to Star Fire Mining on March 17, 2003, under the provisions of Section 103(k) of the Mine Act:

A fatal haulage accident occurred at this operation on March 17, 2003, when a contract coal hauler driver was found dead in the road way leading to the Kitchen Fork No 7 drag line pit. This order is issued to insure the safety of all persons at this operation. It prohibits all activity at the Kitchen Fork No.7 coal seam dragline pit haulage roadway area until MSHA has determined that it is safe to resume normal mining operations in the area. The mine operator shall obtain prior approval from an authorized representative of the Secretary of Labor for all actions to recover and/or restore operations to the affected area.

104(a) Citation No. 7530953 was issued to Tico Trucking Company citing a violation of 30 CFR 77.1605(b):

The accident investigation revealed that service brakes were provided for the Mac Trailer Co. coal trailer, VIN 5MADS36362C005017, attached to the 2002 Peterbilt tractor truck, VIN 1XP-5DBOX-9-2N5757303, being used to haul coal from Star Fire Mining's Kitchen Fork coal pit on Monday, March 17, 2003, however, the service brakes were not operating as required. The "Glad Hand" air hose couplings provided for the service brakes and the suspension/axle lift for the coal trailer were reversed. The service brake air hose from the tractor was connected to the suspension/axle lift coupling on the trailer, and the suspension/axle lift air hose from the tractor was connected to the service brake coupling on the trailer. This condition rendered the service brakes inoperative.

104(a) Citation No. 7530955 was issued to Tico Trucking Company citing a violation of 30 CFR 77.1606(a):

There was no evidence that any type of inspection was conducted by the operator of the 2002 Peterbilt tractor truck, VIN 1XP-5DBOX-9-2N5757303, and the Mac coal trailer, VIN 5MADS36362C005017, prior to it being placed into operation. There were no records of any type of inspection being conducted by the operator and the owner of the vehicle could not produce any such records. This tractor-trailer was involved in a fatal haulage accident on Monday, March 17,2003, while hauling coal from Star Fire Mining's Kitchen Fork coal pit. The accident investigation revealed that the vehicle was not maintained in a safe operating condition.

Fatal Haulage Accident

Tico Trucking Company (C229)
(Independent Contractor)
Star Fire Mining
I.D. No. 15-13936
Ary, Perry County, Kentucky

APPENDIX A

List of persons furnishing information and/or present during the investigation.

Star Fire Mining- Officials

Roger Neace	Safety Department
Steward Bailey	Safety Department

Star Fire Mining-Employees

Larry Slone	Safety Committee, United Mine Workers of America (UMWA)
Danny Pelfrey	Safety Committee, United Mine Workers of America (UMWA)
Jimmy Jackson	Safety Committee, United Mine Workers of America (UMWA)
Mike Meade	Safety Committee, United Mine Workers of America (UMWA)

Kentucky Department of Mines and Minerals

Tracy Stumbo	Chief Accident Investigator
Johnny Greene	Deputy Chief Accident Investigator
Neil Honeycutt	Surface Safety Analysis
Bob Banks	Mine Inspector
Robert Ashworth	Mine Inspector
Victor Campbell	Electrical Inspector
David Mullins	Inspector Principal

Mine Safety and Health Administration

William Johnson	Supervisory, CMS&H
Lester Cox, Jr.	CMS&H Inspector/Accident Investigator
Arthur V. Smith	CMS&H Surface Inspector/ Accident Investigator
Ronald Medina	Mechanical Engineer, Mechanical Safety Division, MSHA Approval and Certification Center

List of Persons Interviewed

Jerry Joseph	Truck Driver	Bowling Trucking Company
James Gay	Surface Foreman	Star Fire Mining
Curtis Brewer	Grader Operator	Star Fire Mining
Kenneth Griffith	Truck Driver	L & M Trucking
Mark Welch	Surface Foreman	Star Fire Mining
Randy Riley	Dozer Operator	Star Fire Mining
Harold Scott	Welder	Star Fire Mining
Johnny Stacy, Jr.	Truck Mechanic	Tico Trucking Company