

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION
Metal and Nonmetal Mine Safety and Health

REPORT OF INVESTIGATION

Surface Nonmetal Mine
(Cement)

Fatal Fall of Person Accident

April 16, 2004

Carmine Amabile Trucking
Contractor I.D. J065

at

Ash Grove Texas LP
Ash Grove Texas, LP - Plant and Quarry
Midlothian, Ellis County, Texas
Mine I.D. No. 41-00026

Investigators

Ralph Rodriguez
Supervisory Mine Safety and Health Inspector

Mark J. Albrecht
Mine Safety and Health Inspector

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Originating Office
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OVERVIEW

On April 16, 2004, James C. Anderson, truck driver, age 74, was fatally injured when he fell from the top of an enclosed bulk tank trailer. Anderson was at the approach to the east bulk cement silo. He was standing on top of his truck surrounded by a four-rail safety cage which was attached to a pneumatic powered gangway.

When Anderson opened a trailer hatch cover, the cover made contact with the bottom two rails of the safety cage, preventing the hatch from opening completely. Anderson attempted to retract the gangway and cage pneumatically but was unsuccessful. With the pneumatic controls still in the retract position, Anderson used a pry bar to pull the cage away from the hatch cover. When the hatch cover was freed, the gangway and cage moved rapidly to the retracted position, causing Anderson to fall to the ground.

The accident occurred because the trailer was not properly aligned to access the trailer and the victim was apparently not aware of the hazards associated with the pneumatically controlled gangway. There were no guides or markings along the approach to ensure proper positioning of the truck at the access platform.

GENERAL INFORMATION

Ash Grove Texas, L.P. - Plant and Quarry, a cement plant and limestone quarry owned by Ash Grove Texas LP, was located near Midlothian, Ellis County, Texas. The principal operating official was Stuart Pryor, plant manager. The plant operated three shifts a day, seven days a week and the quarry operated two shifts a day, seven days a week. Total employment was 124 persons.

Limestone was ripped by a dozer and transported by front-end loaders to a crusher located in the pit. Crushed material was transported by conveyor belts to the plant where it was processed into cement. The finished cement was transported to customers by rail and trucks.

Anderson was employed by Carmine Amabile Trucking, Grandview, Texas. Carmine Amabile had two bulk load tanker trucks. Anderson was driving a truck that was leased to Bulk Services Transport of Waxahachie, Texas.

The last regular inspection at this operation was completed on August 20, 2003.

DESCRIPTION OF THE ACCIDENT

On the day of the accident, James C. Anderson (victim) arrived at the Carmine Amabile Trucking yard at 3:00 a.m., his normal starting time, to pick up his truck. At 3:30 a.m., Anderson arrived at the Ash Grove plant to get his first load of cement and made an abrupt 180-degree turn to enter the east load out silo. The approach to the west silo was less difficult but entry to the west silo was blocked because the loading chute was inoperative.

Anderson parked his truck next to the stationary access platform for the east load out silo so he could open the trailer's center hatch cover. Since he had not swung the truck wide enough when approaching the platform, the trailer was not parked parallel to the access platform and the center hatch was not centered under the platform safety cage.

He climbed the stationary platform steps, lowered the gangway with the four-rail safety cage mounted on the end, and walked out to open the trailer hatch cover. When he opened the cover, it made contact with the bottom two rails

of the safety cage, preventing the hatch cover from opening completely.

Anderson went back to the platform and activated the pneumatic controls to retract the gangway and cage. The hatch cover became lodged between the rails of the cage, preventing the gangway from retracting.

Anderson called to Pennie Maples, truck driver, who was on an adjacent platform. He asked if she had air pressure on the platform she was standing on. Maples tried the controls and stated there was no air pressure. She did not realize that it took from 3 to 8 seconds to build up air pressure in the cylinders before the gangway moved. Anderson went to the bulk loading control room and reported the gangway problem to Rickey Bilderback, bulk load-out operator. Bilderback contacted Sean Harris, shift supervisor, who immediately began traveling to the bulk loading area.

Anderson returned to the access platform. Connie Johnson, truck driver, gave him a pry bar to free the cage. With the pneumatic controls still in the retract position, Anderson proceeded to pry the cage away from the hatch cover.

Johnson saw Anderson turn away from the hatch when it was freed and saw the gangway and cage move abruptly upward and toward the stationary platform. Anderson had fallen to the ground.

Harris was the first to reach Anderson and administered first aid. Emergency medical personnel were notified and arrived a short time later. The victim was transported to a nearby hospital, where he died at 8:05 a.m. Death was attributed to blunt force trauma.

INVESTIGATION OF THE ACCIDENT

Mitchell Adams, assistant district manager, was notified of the accident at 6:30 a.m. on April 16, 2004, by MSHA's night answering service. Adams called Francisco Pinto, safety manager for Ash Grove Texas LP and notified him that an order would be issued under the provisions of Section 103(k) of the Mine Act to ensure the safety of the miners. An investigation was started the same day. MSHA's accident investigation team traveled to the mine, made a physical

inspection of the accident scene, interviewed persons, and reviewed documents and work procedures relevant to the accident. MSHA conducted the investigation with the assistance of mine management and employees.

DISCUSSION

Location of the Accident

The accident occurred at an access platform on the approach to the east bulk cement load-out silo. Weather conditions were cloudy and cool.

Bulk Load-Out Facility

The bulk load-out facility consisted of two drive through silos with a loading chute in each. The load-outs had retractable access gangways with safety cages for accessing the tops of the tanker trucks to open and close the hatch covers.

Remote Access Gangway

The remote access gangway, model TCG-2000, was manufactured by Carbis, Inc. It was installed in 1999 and was located at the approach to the east bulk cement load-out silo. The gangway provided access for the truck drivers to open the hatch covers on their trailers. This assembly was comprised of an access stairway to a stationary platform 12 feet above ground. A retractable gangway with a self-leveling four-rail safety cage was hinged from the platform, allowing the gangway and cage to be lowered to the top of a truck.

The gangway was raised and lowered by two pneumatic cylinders that were attached to it. The cylinders were controlled by a five way, three position, manually operated valve located to the right of the gangway.

A valve control lever had to be pushed down and held in place to lower the gangway. When released, a self-centering spring caused the valve control lever to automatically return to center. In the center position, the valve blocked the ports to the cylinders preventing it from raising or lowering.

The valve control lever had to be pushed up to raise the gangway. In the gangway raise position, the control valve had a detent which caused the valve to remain in this position after it was released. When the control valve was

placed in the raise position, the gangway would rise until it either reached the extreme vertical position or the valve was manually centered stopping the rise of the gangway.

Each port on the gangway lift cylinders had an adjustable flow regulator that could be adjusted to control the speed the gangway could be raised or lowered.

Gangway Air Supply

The gangway pneumatics were connected to the plant air system that consisted of one large compressor with a pressure gauge and recorder. Minute by minute recorder pressure readings indicated that there had not been an interruption of the air supply. There were no reported maintenance defects on the system at the time of the accident.

Gangway Pneumatic System

Tests indicated that the gangway pneumatic system was operating within the manufacturer's specifications. The pressure actually applied to the system varied from 84 pounds per square inch gauge (psig) to 87 psig. This was within the recommended range of 80 psig to 100 psig. The gangway started to rise 3 to 8 seconds after activation with the control lever on the platform.

Self-leveling Safety Cage

The self-leveling safety cage was a 4-foot by 4-foot SAF-T cage provided by Carbis as an accessory to the gangway. The cage had four horizontal rails, no floor, and was designed for placement over a tank trailer hatch. The design allowed a truck driver to access the trailer hatches from the platform and gangway.

The Tank Trailer

The tank trailer was a Fruehauf, model HAB-T2-J-1000, with three top hatches. The trailer was 11 feet 6 inches high and had a rough (traction) surface on top. On either side of the hatches, there was a two-inch high rail along the trailer top that extended from an access ladder located on the rear of the trailer.

Training

Anderson had 50 years of bulk delivery experience and had hauled bulk cement from this mine for about 35 years. He had worked for Carmine Amabile Trucking about four years

and for the predecessor company another seven years. He had received Part 46 site specific hazard awareness training; however, this training did not address the task of operating the air powered access platform system and the alignment of the bulk tanker trailer to the access platform.

ROOT CAUSE ANALYSIS

A root cause analysis was conducted and the following causal factors were identified:

Causal Factor: The bulk tank trailer was improperly positioned at the access platform of the east cement silo. The trailer's hatch cover became lodged in the bottom rails of the safety cage due to the misalignment of the truck at the platform.

Corrective Action: Install signage and devices or controls that properly guide and/or direct truck movement to the platform. Ensure that the truck drivers' site specific hazard training addresses the hazards of improper truck alignment. Monitor truck drivers to ensure that they understand the traffic controls.

Causal Factor: The truck driver was not familiar with all operating features of the air powered gangway control lever. The truck driver was unaware that the air cylinders were charged when he pried the hatch cover from the safety cage rails.

Corrective Action: Written policies and procedures should be established to ensure that site specific hazard training addresses any potential hazards associated with the truck drivers' tasks. Warning signs that explain the potential hazards of the pneumatic operating system for the access platform should be posted at the truck loading area.

CONCLUSION

The accident occurred because the trailer was not properly aligned with the access platform that the gangway was mounted on. There were no guides or markings along the approach to ensure proper positioning of the truck at the access platform. The victim had not received any training regarding the potential hazards associated with the pneumatically controlled gangway and misalignment of the

bulk tanker trailer to the access platform. No warning signs were provided at the bulk truck loading area to warn persons of the hazards associated with misalignment of trucks and the pneumatically powered access platform.

ENFORCEMENT ACTIONS

Ash Grove Texas, LP

Order No. 6015040 was issued on April 16, 2004, under the provisions of Section 103(k) of the Mine Act:

A fatal accident occurred at this mine on April 16, 2004, when an over-the-road bulk truck driver fell from the top of a tanker trailer while opening the hatch in preparation for bulk loading at the truck outside load-out platform. This order is issued to assure the safety of all persons in the area and prohibits the use of this platform, the Mack model GH13 tractor, s/n: 1M2AA13Y9PW022199 and the Fruehauf Model HAB T2J 1000 bulk trailer, s/n: 4B04122KL017012, until MSHA has determined that it is safe to resume normal operations in this area. The mine operator shall obtain approval from an authorized representative for all actions to recover and restore operations to the affected area.

This order was terminated on April 19, 2004. Conditions that contributed to the accident have been corrected and the designated equipment was allowed to return to normal mining operations.

Citation No. 7886295 was issued on July 2, 2004, under the provisions of Section 104(a) of the Mine Act for a violation of 30 CFR 46.11(d):

A fatal accident occurred at this mine on April 16, 2004, when a truck driver fell from the top of a tank trailer. The driver's site specific hazard training did not address the task of operating the air powered access platform system nor the necessity to properly align (center) the bulk tank trailer under the access platform. Both hazards were identified as root causes which contributed to the incident.

Citation No. 7886296 was issued on July 2, 2004, under the provisions of Section 104(a) of the Mine Act for a violation of 30 CFR 56.20011:

A fatal accident occurred at this mine on April 16, 2004, when a truck driver fell from the top of a tank trailer. The driver had positioned his tank trailer at an angle to the access platform resulting in the safety cage not being centered over the center tank trailer hatch lid. This also left an opening in the access way between the retractable platform and the top of the tanker trailer. The lid became lodged in the bottom two safety cage rails preventing the platform from rising. The platform bolted upward once the cage was freed from the lid. The mine operator did not provide warning signs identifying the potential safety hazards of improper alignment of the truck nor warning signs to indicate the potential safety hazards of entering the caged area while leaving the controls in the raised position. These hazards were not immediately obvious.

Approved by:

Date:

Edward E. Lopez
District Manager

Appendix A

Persons Participating in the Investigation

Ash Grove Texas, LP

Stuart Pryor	plant manager
Steve Minshall	corporate safety director
Francisco Pinto	safety director

Mine Safety and Health Administration

Ralph Rodriguez	supervisory mine safety and health inspector
Mark J. Albrecht	mine safety and health inspector
Eugene D. Hennen	mechanical engineer