

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

REPORT OF INVESTIGATION

**Surface Nonmetal Mine
(Limestone)**

**Fatal Powered Haulage Accident
July 24, 2004**

**Stringtown Materials LP
Stringtown Materials LP
Stringtown, Atoka County, Oklahoma
Mine ID No. 34-00056**

Investigators

**Arthur L. Ellis
Supervisory Mine Safety and Health Inspector**

**Dani D. White
Mine Safety and Health Inspector**

**Ronald Medina
Mechanical Engineer**

**Judy M. Tate
Supervisory Mine Safety and Health Specialist**

**Laman J. Lankford
Mine Safety and Health Specialist**

**Originating Office
Mine Safety and Health Administration
South Central District
1100 Commerce Street, Room 462
Dallas, Texas 75242-0499
Edward E. Lopez, District Manager**

OVERVIEW

Raymond L. Miller, laborer, age 18, was seriously injured on July 24, 2004, when the lift assembly of the loader he was operating pinned him against the cab of the machine. Miller was attempting to position the bucket so he could replace a hinge pin that had fallen from the left lift arm. He died on August 6, 2004.

The accident occurred because safe operating procedures were not followed when performing repairs to the skid-steer loader. The operator attempted to make repairs to the loader without shutting off the engine and blocking the loader against hazardous motion.

GENERAL INFORMATION

Stringtown Materials LP, a crushed limestone operation, was located at Stringtown, Atoka County, Oklahoma. The mine opened in 1901 and had been operated under the management of several companies. Lattimore Properties, Inc. of McKinney, Texas bought the mine in 1998 and formed Stringtown Materials LP, a limited partnership with Lattimore as the general partner. The principal operating official of Stringtown was Steve Holstine, plant manager. Lattimore Materials Company LP was another limited partnership, providing management for Stringtown.

Limestone was drilled and blasted from three benches in the pit. Front end loaders and shovels placed broken rock into haul trucks which carried the material to an on-site plant. At the plant, broken rock ran through primary and secondary crushers and was screened and stockpiled. Finished products were sold for use in the construction industry.

The mine normally operated two 12-hour shifts per day, five days a week. As needed, employees worked one 8-hour shift on Saturday. Total employment was 51 persons.

The last regular inspection of the mine was completed on June 10, 2004.

DESCRIPTION OF THE ACCIDENT

On the day of the accident, Raymond L. Miller (victim) reported for work at 1:00 p.m., the normal starting time for Saturday work. He was assigned to work with Kyle Walker, plant operator. They initially performed plant maintenance. Walker task trained Miller on a Bobcat 763F skid-steer loader at 2:30 p.m. then observed Miller operating the loader for about four hours.

An electrical storm moved into the area about 7:00 p.m. causing Miller and Walker to take shelter at the shop with other employees. About 7:30 p.m., the storm passed and Miller returned to the plant to resume operating the loader. He was seen standing alone near the loader shortly before 8:30 p.m.

Miller apparently tried to position the loader bucket so he could replace a hinge pin that had fallen from the left lift arm. He left the loader seat, with the engine running, and pushed the seat bar down behind him. Miller stood with his feet on the lift and tilt control pedals and reached over the cross brace between the lift arms. The lift arms rose and the cross brace pinned him against the cab of the loader.

About 8:30 p.m., Paul Loftin, production supervisor, found Miller unresponsive, pinned against the loader cab. Loftin used his radio to call for on-site assistance and went to the clock house to call for emergency medical personnel. Several employees responded, helped free Miller, and administered cardiopulmonary resuscitation until emergency medical personnel arrived.

Miller was transported to a nearby hospital. After storms passed, Miller was life flighted to a hospital in Tulsa, Oklahoma. He died at the hospital on August 6, 2004, of internal injuries resulting from blunt force trauma.

INVESTIGATION OF THE ACCIDENT

T. Scott Horner, environmental health & safety manager for Lattimore Materials Company LP, reported the accident to the MSHA answering service at 1:28 a.m. on July 25, 2004. Mitchell Adams, assistant district manager, was notified, and an investigation was started that same day. An order was issued pursuant to Section 103(k) of the Mine Act to ensure the safety of the miners. MSHA's accident investigation team traveled to the mine, made a physical inspection of the accident scene, interviewed employees, 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 the on-site crushing and screening plant. The victim was working outdoors. There were scattered thunderstorms and occasional rain in the area.

Skid-Steer Loader

The skid-steer loader was a 1999 Bobcat model 763F manufactured by Melroe Company, a division of Ingersoll-Rand. The loader was equipped with an operator's cab that also functioned as a roll-over protective structure (ROPS), seat belts, and a seat bar restraint system. Two hand levers controlled the hydraulics for travel, steering, and braking (hydrostatic). Two foot pedals controlled the hydraulics for the lift and tilt functions.

The seat belts, hand levers, and foot pedals were found to be functional. The seat bar restraint system was functional except that it would not lock the pedals as it was designed to do with the seat bar raised. This defect did not contribute to the accident.

The loader was equipped with an interlock control system designed to keep the loader hydraulics non-functional until the operator pulled the seat bar down and depressed the "press to operate button". The interlock control system was found to be functional.

Training and Experience

Miller had worked eight shifts at this mine. He had received 28 hours of new miner training in accordance with 30 CFR, Part 46. On the day of the accident, he received four hours of task training for the skid-steer loader.

ROOT CAUSE ANALYSIS

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

Causal Factor: Policies and administrative controls were inadequate because newly hired employees were not monitored to prohibit them from performing repair tasks by themselves.

Corrective Action: Train all equipment and machinery operators regarding company policies and procedures for performing equipment repairs. Monitor employees to ensure compliance with company policies and procedures.

Causal Factor: The operator of the skid-steer loader did not follow the manufacturer's recommendations for operating the loader. The task training provided did not include a review of the equipment operator's manual.

Corrective Action: Train all equipment operators in safe operating procedures using the operator's manual to determine the manufacturer's recommendations. Monitor employees to ensure compliance with safe operating procedures.

CONCLUSION

The accident occurred because safe operating procedures were not followed when performing repairs to the skid-steer loader. The operator attempted to make repairs to the loader without shutting off the engine and blocking the loader against hazardous motion.

ENFORCEMENT ACTIONS

Order No. 6247930 was issued on July 25, 2004, under the provisions of Section 103(k) of the Mine Act:

An accident occurred at this operation on July 24, 2004, when the operator was pinned between the lift assembly and the cab of a skid-steer loader. This order is issued to assure the safety of all persons at this operation. It prohibits all activity with the Bobcat skid-steer loader, model 763F, serial no. 512241944, and the surrounding 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 for all actions to recover and/or restore operations to the affected area.

This order was terminated on July 26, 2004, after the conditions that contributed to the accident no longer existed.

Citation No. 6247966 was issued on September 28, 2004, under the provisions of Section 104(a) of the Mine Act for a violation of 30 CFR 56.14105:

A fatal accident occurred at this operation on July 24, 2004, when a skid-steer loader operator was pinned against the cab of the loader by the cross brace between the lift arms. The engine of the skid-steer loader was not shut off and the lift arms were not blocked against hazardous motion. The operator was attempting to replace a hinge pin that connected the bucket to the left lift arm, when the lift arms rose and pinned him.

Approved: _____
Edward E. Lopez
District Manager

Date: _____

APPENDIX A

PERSONS PARTICIPATING IN THE INVESTIGATION

Lattimore Materials Company LP

Mark Clark	vice-president of aggregate operations
Larry Creasman	environmental health & safety coordinator
T. Scott Horner	environmental health & safety manager
Lee White	area manager

Stringtown Materials LP

Steve Holstine	plant manager
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Mine Safety and Health Administration

Arthur L. Ellis	supervisory mine safety and health inspector
Laman J. Lankford	mine safety and health specialist
Ronald Medina	mechanical engineer
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