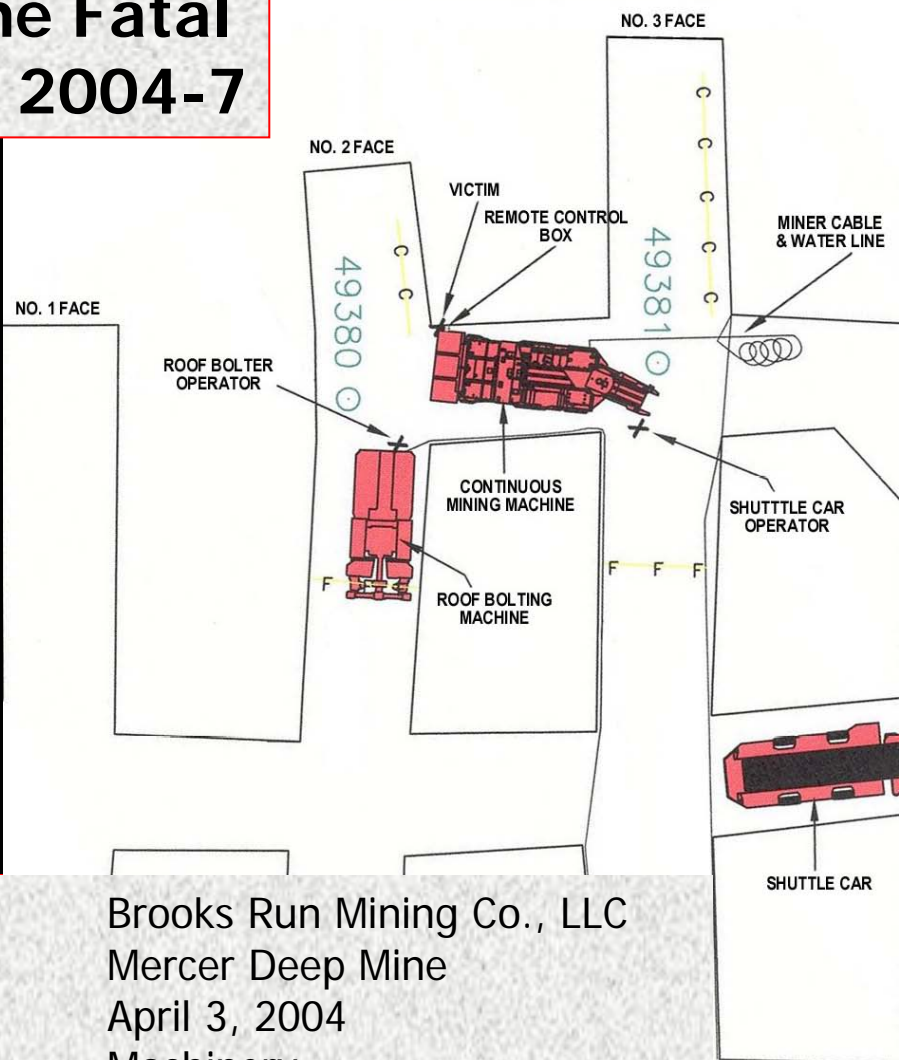


*This presentation is for illustrative and **general** educational purposes only and is not intended to substitute for the official MSHA Investigation Report analysis nor is it intended to provide the sole foundation, if any, for any related enforcement actions.*

GENERAL INFORMATION

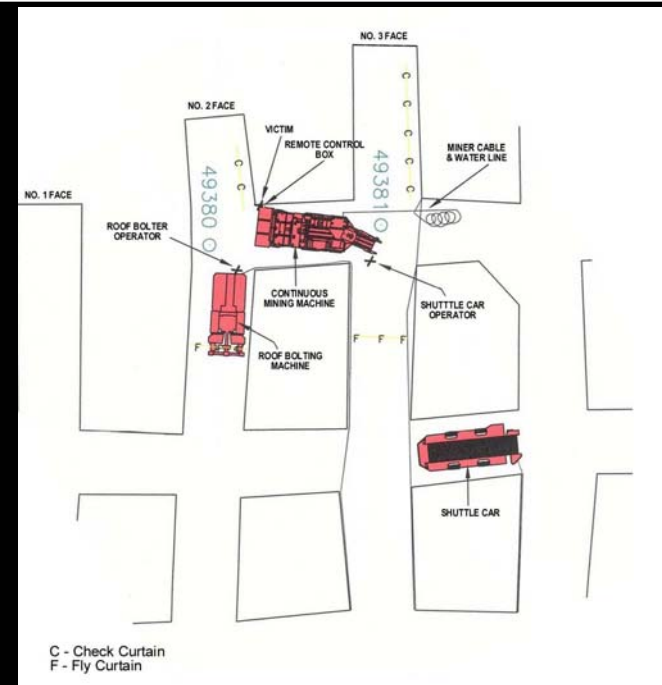
Coal Mine Fatal Accident 2004-7



Operator:	Brooks Run Mining Co., LLC
Mine:	Mercer Deep Mine
Accident Date:	April 3, 2004
Classification:	Machinery
Location:	District 4, Webster County, WV
Mine Type:	Underground

OVERVIEW

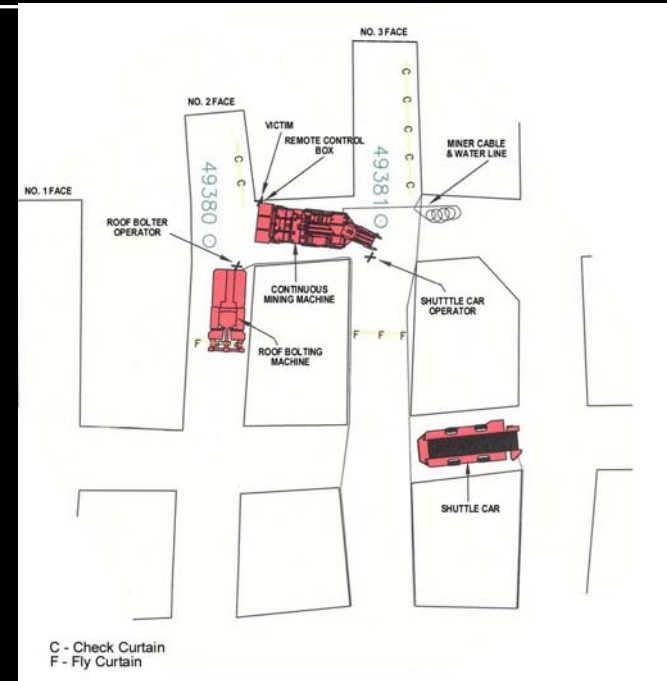
Coal Mine Fatal Accident 2004-7 Machinery



- At 11:40 p.m., on Saturday, April 3, 2004, a 47-year old continuous mining machine operator with 29 years of mining experience was fatally injured while the continuous mining machine was being trammed in high speed.
- The victim was positioned in a hazardous location and was pinned between the ripper head of the continuous mining machine and the right (inby) coal rib of the No. 3 left crosscut.
- The accident occurred because the victim was positioned in a hazardous location while tramming the continuous mining machine in high tram speed. The victim's position resulted from a failure to comply with approved roof control plan.

ACCIDENT DESCRIPTION

- On Saturday, April 3, 2004, at approximately 4:00 p.m., the No. 1 section evening shift crew entered the mine via the track entry, accompanied by the section foreman.
- After the right side miner finished mining, the left side continuous mining machine operator, (victim) began mining in the No. 2 face.
- Approximately 40 minutes prior to the accident, Brady backed the left continuous mining machine out of the No. 3 left crosscut and into the No. 4 left crosscut.
- The left side roof bolters then installed bolts in the No. 3 left crosscut.
- After installing the bolts, they trammed the bolting machine into the No. 2 entry and began installing a ventilation curtain in the No. 2 entry along the right rib.



ACCIDENT DESCRIPTION

- The victim began tramming the continuous mining machine to mine the No. 2 left crosscut. This location was directly in front of the machine.
- The roof bolters heard the continuous mining machine start up and rumble three times, as though it was in fast speed and immediately shut off.
- They noted that the machine did not run more than a couple of seconds.
- They saw the continuous mining machine tram forward and pin Brady between the ripper head and the right rib.



EQUIPMENT

- The continuous mining machine involved in the accident was a Joy remote-controlled Model 12CM-27, Serial No. JM5370, MSHA Approval 2G-4023A-00.
- The remote control unit being used for this continuous mining machine at the time of the accident was a Matric Limited permissible radio transmitter, Model TX3, P/N 100112672, Serial Number 75205A0033C, MSHA Approval 2G-4096-0.
- The continuous mining machine involved in the accident was field tested for possible malfunctions.
- Tests of the machine's remote control system were conducted by Matric Limited, at Seneca, Pennsylvania, under the direction of the MSHA Approval and Certification Center.
- Both tests revealed no malfunctions of equipment.

DISCUSSION

- The victim was ready to tram the machine across the entry to begin mining when the pump motor shut down.
- He walked around the corner of the crosscut toward the machine, leaving his safe position, and was seen operating the remote controls in an apparent effort to restart the machine.
- When the victim was approximately 4 feet from the ripper head, the machine started and trammed in a straight line, pinning him against the rib.
- The tram speed of the continuous mining machine contributed to the accident. The design of the continuous mining machine allows the operator to select from three tram speeds.
- Design speeds for this machine are; 15 ft/min. in Speed 1, 30 ft/min. in Speed 2, and 85 ft/min. in Speed 3. If the machine were in fast speed, as the witnesses both believed it to be, the victim had little time to react.

DISCUSSION

- It is not known why Brady left his safe location in the No. 2 entry, however, it is possible that he was attempting to restart the machine.
- Witnesses said that the machine unexpectedly shut down earlier in the shift when Brady was positioned on the left side of the machine. The cause of the shut down is unknown.
- During performance testing of the machine after the accident, the pump motor inadvertently de-energized on one occasion. This was caused by loss of power to the remote control unit and was corrected by readjustment of the slider portion of the remote control power cord to the battery power take-off (PTO).

DISCUSSION

- Operator disorientation was considered as a possible contributing factor during the investigation. Operator disorientation can occur as the operator moves to different locations around the machine.
- Remote-controlled continuous mining machine operators normally operate from a position behind or to the side, looking toward the front of the machine. At the time of the accident, the victim was standing in front, looking toward the rear of the machine, creating the possibility of operator disorientation.
- There is no indication that operator disorientation contributed to the accident. Physical evidence and witness statements show that the continuous mining machine moved in a straight line toward the victim. This shows that the victim did not operate the controls in a manner to cause the machine to move right or left.
- Brady's proximity to the machine violated the approved roof control plan which prohibited prohibiting persons from being near the continuous mining machine while tramming.

ROOT CAUSE ANALYSIS

Causal Factor: The approved roof control plan was not being complied with when the continuous mining machine operator was positioned in a hazardous location and was pinned between the ripperhead of the continuous mining machine and the coal rib. The approved roof control plan requires persons to be in a safe location from the continuous mining machine while tramming in remote mode.

Corrective Action: Prior to resuming operations, training sessions were conducted by mine management, emphasizing adherence to the safety precaution. Management initiated a more stringent policy regarding the proximity of personnel to continuous mining machines. It states:

"No person shall be positioned between the continuous mining machine and the coal ribs when the continuous miner pump motor are enabled (on), including cutting and tramming and loading. The only exception to this policy is when maintenance and troubleshooting are necessary, and then the tram breakers shall be knocked, when possible. Additionally, no person shall position themselves within two (2) rows of roof bolts in front of the continuous mining machine cutting head. Section foreman duties will not include equipment operation on a regular basis."

ROOT CAUSE ANALYSIS

Causal Factor: The continuous mining machine was being trammed in Speed 3 (High) at the time of the accident. This resulted in the victim having little time to react to the machine's movement due to his hazardous position.

Corrective Action: Training on the functions of the radio remote-control and machine speed settings was given to all persons by the chief electricians before production resumed.

CONCLUSION

The accident occurred because the victim was positioned in a hazardous location while tramming the continuous mining machine in high tram speed. The victim's position resulted from a failure to comply with approved roof control plan.

ENFORCEMENT ACTION

104(a) Citation Facts obtained during the investigation of a fatal machinery accident, that occurred on April 3, 2004, indicated that the approved roof control plan was not being complied with on the 001-0 working section. The approved roof control plan requires persons to be in a safe location from the continuous mining machine while tramming in the remote control mode. While standing in front of the continuous mining machine, the continuous mining machine operator attempted to tram the continuous miner by remote control, in the number 3-2 crosscut. The continuous mining machine operator was fatally injured when he was pinned between the cutting head of the continuous mining machine and the coal rib.

BEST PRACTICES

- Develop a Standard Operating Procedure (SOP) for tramming remote-controlled continuous mining machines.
- Train the production crew in the SOP and ensure that it is followed.
- Tram mining machine from a safe location to avoid pinch points.
- Ensure everyone is outside the machine turning radius before starting or moving the equipment.