

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF MINES

DISTRICT I

REPORT OF MULTIPLE FATAL ROOF-FALL (MAN-TRIP) ACCIDENT  
ELZO MINE  
HARLAN FUEL COMPANY  
YANCEY, HARLAN COUNTY, KENTUCKY

April 28, 1961

By

R. B. Jones  
Federal Coal-Mine Inspector (Roof-Control)

Originating Office - Bureau of Mines  
Barbourville, Kentucky  
G. W. Parry, Subdistrict Supervisor  
Barbourville, Kentucky Subdistrict, Health and Safety District I

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INTRODUCTION

A roof-fall occurred along the No. 1 west haulage entry in the Elzo mine at Yancey, Kentucky, about 2:30 p.m., Friday, April 28, 1961. The roof material that fell was about 8 feet wide, 30 feet long and 0-18 inches in thickness, and it fell on the 1 west section man-trip as it was traveling toward the portal.

The man-trip consisted of a locomotive, two regular mine cars, and a rail truck, which was being towed back of the mine cars. Seven employees were riding in the mine cars, two were riding on the rail truck, and one was operating the locomotive. Seven men were caught underneath the fallen material; three were killed instantly, one died about 15 minutes following the accident, and three were hospitalized with various fractures and internal injuries. The other two escaped uninjured.

The names of the victims, ages, marital status, occupations, and the number of dependents are listed in Appendix A of this report.

An official of the company notified the Harlan office of the Bureau of Mines of the occurrence about 3:30 p.m., on the day of the accident. Inspectors T. R. Mark and Dennie R. Hager notified the Barbourville Office of the Bureau of Mines before proceeding to the mine.

Work of recovering the injured men and the bodies of the victims was directed by company officials and was completed about 4:30 p.m. An investigation was made April 29 and May 1, 1961.

GENERAL INFORMATION

The Elzo mine at Yancey, Kentucky, served by the Louisville and Nashville Railroad Company, was opened in 1953 by the present operating company. Explosions or other disasters have not occurred underground. Access into the mine was through several drift openings into the high-volatile bituminous Darby coal bed, which averaged 38 inches in thickness

locally. The coal dust is explosive. A total of 56 men, 3 on the surface and 53 underground, was employed on 3 shifts a day, 5 days a week, and produced a daily average of 1,000 tons of coal, all loaded mechanically into shuttle cars by three 14 BU Joy loading machines and one Compton CU 42 miner. The general manager stated that the life of the mine was indefinite.

The mine was developed by a room-and-pillar method. Main entries, 14 to 18 feet wide, were driven in sets of five, and room entries, 14 to 18 feet wide, were driven in sets of three at 600-foot intervals. Rooms were driven 20 to 30 feet wide. Crosscuts were made at 60-foot intervals.

The immediate roof was generally fragile shale (draw rock), ranging from 2 to 9 inches in thickness. The main roof was generally firm shale about 10 to 12 feet in thickness, which was overlain with a 4-inch coal rider seam. The immediate roof in the area of the accident was fragile shale 7 to 17 inches thick, which was brushed along this haulageway. The main roof in the area of the accident was variable and consisted of slickensided plates which were on consolidated shale 10 to 12 feet thick. The roof fall and other falls in the area were apparently triggered by a fault which was approximately 300 feet wide and extending on about a 15-degree angle from 1 right to the face of No. 2 main (see Sketch No. 3). The fault was evidenced by unstable roof conditions and irregular mine floor. The adopted systematic method of roof support required permanent timbers to be set on 4-foot centers on each side of the 14-foot wide roadways to within 8 feet of the working faces and sufficient safety posts to be set in by the permanent timbers to provide adequate protection.

Roof bolts were used in conjunction with the regular timbering plan in 1 west mains. Spot-bolting was done in the track-haulage entries where the draw rock was taken down to generally self-supporting material. The area in which the accident occurred was driven about 15 months ago and had been roof-bolted; however, due to cracks forming and sloughing between bolts, the roof was brushed to a point which was considered self-supporting. One row of timbers was set on one side of the 14-foot wide entry in the vicinity of the accident, and roof bolts had been installed in by and out by the roof-fall area. Bolts and timbers were set by regular timbering crews during the production cycle. Roof examinations were made in the face areas by the employees and officials, and the haulageways were examined daily by the officials. Generally, 30-foot continuous miner runs were made before bolting; however, the regular timbering plan requiring posts, on 4-foot centers, was followed when the runs were being made. Coal was transported in shuttle cars and in mine cars by trolley and cable-reel locomotives. The tracks and rolling stock were maintained in good condition. The clearance space was restricted at several locations along the main haulageway, but the clearance space in

the vicinity of the accident was adequate. Men were transported in regular drop-bottom mine cars with safety hooks attached.

A Withdrawal Order, Form A, was issued April 29, 1961, during the investigation of the accident for a man-trip danger along the entire length of the 1 west entries from the intersection of No. 2 main entries to the working faces, requiring all persons except those referred to in Section 203(a)(2) of the Act, to be withdrawn from and to be debarred from entering the area. However, management removed the men from the 1 west section and closed the entire mine before the Order was issued.

Information for this report was obtained from Farmer B. Bargo, shuttle-car operator, Clyde Bryant, locomotive operator, and Hubert Branson, loader operator, who were on the trip and eyewitnesses.

The investigating committee and those who attended the inquiry consisted of:

Harlan Fuel Company

Norman Yarborough	General Manager
Royal Nelms	Mine Foreman
Herbert Cox	Section Foreman
Bill Mathis	Maintenance Foreman

Harlan County Coal Operators' Association

Rufus Bailey	Safety Director
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Coal Operators' Casualty Company

J. H. Mosgrove	Chief Engineer
Grant Hall	Inspector

Kentucky Department of Mines and Minerals

Henry Hamblin	Principal Inspector
Otis Cox	Inspector-in-Charge
Carl Smithers	Inspector
Matt Wilder	Inspector
Chester Brooks	Inspector
Leslie Carroll	Inspector

United Mine Workers of America

William J. Prater	Field Representative, District 19
Herbert Goodin	President, Local No. 7463
Perry Sams	Safety Committeeman
Robert Gambrel	Safety Committeeman

United States Bureau of Mines

J. S. Malesky	District Supervisor, District I
G. W. Parry	Subdistrict Supervisor
T. R. Mark	Federal Coal-Mine Inspector
Dennie R. Hager	Federal Coal-Mine Inspector
R. B. Jones	Federal Coal-Mine Inspector (Roof-Control)

The investigating committee conducted an official inquiry and investigation of the accident by interrogating a number of officials and employees of the company at the mine on April 29 and May 1, 1961. The purpose of the inquiry was to hear and record all testimony relevant to roof conditions and practices in the mine prior to the time of the accident, and to determine therefore, if possible, the cause of the accident. The information obtained is included in this report.

The preceding inspection of this mine was completed March 28, 1961.

DESCRIPTION OF ACCIDENT

The No. 1 west section employees, which included the victims, left the surface at 6:30 a.m., and arrived on the section at approximately 6:45 a.m., on the day of the accident. Normal mining operations were performed throughout the shift until about 2:25 p.m., at which time seven of the crew members boarded two mine cars, two boarded the rail truck, and one the locomotive. The rail truck was being taken to a sidetrack near the mouth of the entry. At about 2:30 p.m., when the trip had traveled to a point about 2,100 feet from the face, a piece of rock 30 feet long, about 8 feet wide, and 0-18 inches thick fell on the trip. Three men were killed instantly, one died about 15 minutes following the accident, and three were hospitalized with injuries. Farmer B. Bargo, who was riding the front "pocket" of the first car, was not injured, and Hubert Branson, who was riding in the last "pocket" of the first car, jumped from the trip when he heard someone shout a warning; he also escaped uninjured. Clyde Bryant, who was operating the locomotive, was not injured, but he stated that he saw some pieces of rock dribble as he passed under the location of the fall and yelled a warning to the other men. Bryant said the trip was traveling slowly as he was preparing to stop and pick up Jack Card, a short distance outby, who had been removing supplies from the wire side of the haulageway and placing them on the clearance side during the day. Card stated that he had passed by the fall area several times during the day and the last time about 6 minutes before the accident occurred. He also stated that he did not notice any unusual conditions or hear any rock falls except the one that fell on the man-trip. Vernon Hyatt, main-line locomotive operator, stated that he had pulled seven trips from

the section during the shift and passed by the fall area with a light locomotive approximately 10 minutes before the accident. He also stated that he noticed no unusual conditions along the haulageway during the shift. Royal Nelms, mine foreman, examined the roof along the haulageway and passed by the fall area at approximately 10:00 a.m., on the day of the accident; Norman Yarborough, general manager, and J. H. Mosgrove, chief engineer, Coal Operators' Casualty Insurance Company, traveled the haulageway at approximately 1:00 p.m., on their way to the surface, but they did not observe any doubtful roof or unusual roof conditions along the haulageway.

The investigation indicated that a movement or disturbance of the unstable faulty roof occurred on the right side of No. 2 mains, which was about 300 feet wide and extended from 1 right across 1 west entries to the faces of No. 2 main, a distance of about 3,500 feet. The investigation also indicated that the disturbance caused a 90-foot long and 10- to 15-foot high fall in the No. 1 aircourse entry, which was adjacent to the track haulageway, about the time of the accident. A fall occurred at an intersection in the No. 2 aircourse entry and about 100 feet from the accident area about the same time. Another fall occurred along the haulageway 250 feet out by the accident area about 1 hour after the accident happened and during recovery operations. A new fall, about 15 feet long and on top of the 90-foot fall previously mentioned, occurred between 1:00 p.m., April 29 and 10:00 a.m., May 1, 1961. The investigation further indicated that a possible disturbance or movement from the mined-out Harlan coal bed, which was 290 feet below the Darby coal bed and/or from the worked-out area in 1 right which was 250 feet through solid coal from 1 west, may have been the cause of the movement or disturbance in the area of the accident.

The company officials were notified of the accident promptly. Royal Nelms, mine foreman, Herbert Cox, section foreman, and Bill Mathis, maintenance foreman, recovered the victims and administered first-aid to the injured. Norman Yarborough arrived at the scene of the accident about 3:10 p.m., and assisted with the recovery work. T. R. Mark, Dennie R. Hager, C. H. Sample, and J. G. Lahnstein, of the Bureau of Mines, arrived at the mine about 4:00 p.m., and assisted with the care of the injured on the surface. The rescue operations were completed about 4:30 p.m.; the injured persons were transported to hospitals in Harlan, Kentucky. Elbert Cox, who was reported to be the most seriously injured, was on the critical list of the Harlan Memorial Hospital on May 1, 1961.

#### CAUSE OF ACCIDENT

Failure to adequately support the roof along the haulageway in the area of the accident was the cause of the accident. As a result of the disturbance and movement, previously mentioned in this report, the

roof along the haulageway at the location of the accident was not supported sufficiently to prevent it from falling. Failure of the officials to properly evaluate the roof conditions in the faulty area and to provide additional roof support beyond normal requirements were contributing factors.

#### RECOMMENDATIONS

The following recommendations may prevent accidents of a similar nature in the future:

1. Additional roof support such as bolts or crossbars should be installed when unstable roof is encountered such as that which was present in the 300-foot area extending from 1 right to the face of No. 2 main and crossing 1 west entries.
2. Roof along all places where men work or travel should be examined frequently and thoroughly enough to properly evaluate its condition. The sound-and-vibration method of testing roof should be included in the examinations.
3. The management should give serious consideration to the purchase of covered man-trip cars.

#### ACKNOWLEDGMENT

The cooperation of the representatives of the Kentucky State Department of Mines and Minerals, insurance company, and the company officials and employees during this investigation is gratefully acknowledged.

Respectfully submitted,

/s/ R. B. Jones

R. B. Jones

APPENDIX A

VICTIMS OF ROOF-FALL (MAN-TRIP) ACCIDENT  
ELZO MINE, HARIAN FUEL COMPANY

April 28, 1961

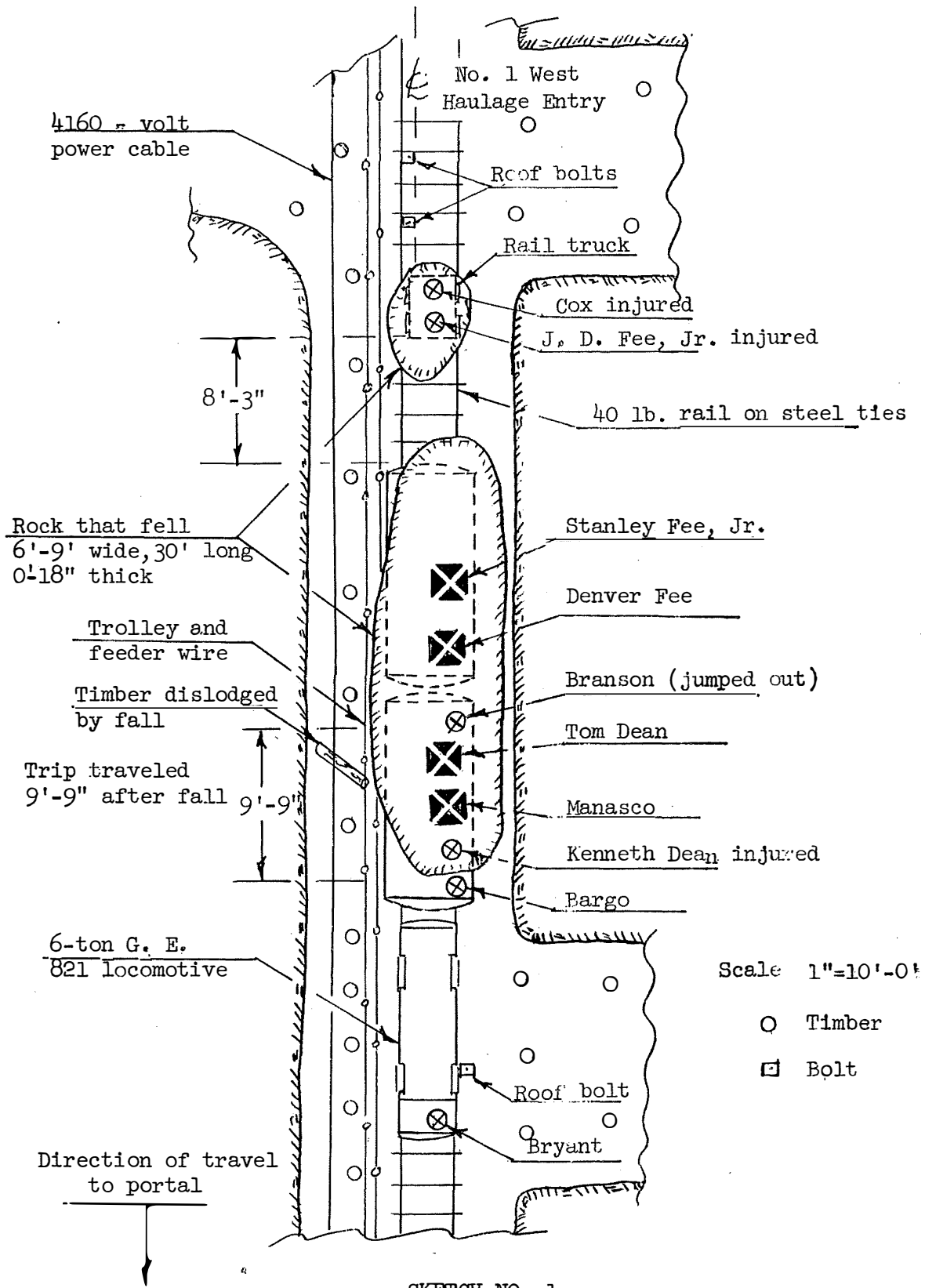
DECEASED

<u>Name</u>	<u>Age</u>	<u>Occupation</u>	<u>Marital Status</u>	<u>Number of Dependents</u>
Stanley Fee, Jr.	34	Section Foreman	Married	3
Columbus Manasco	42	Continuous-Miner Operator	Married	3
Denver Fee	46	Bratticeman	Married	9
Tom Deam	45	Timberman	Married	0

INJURED

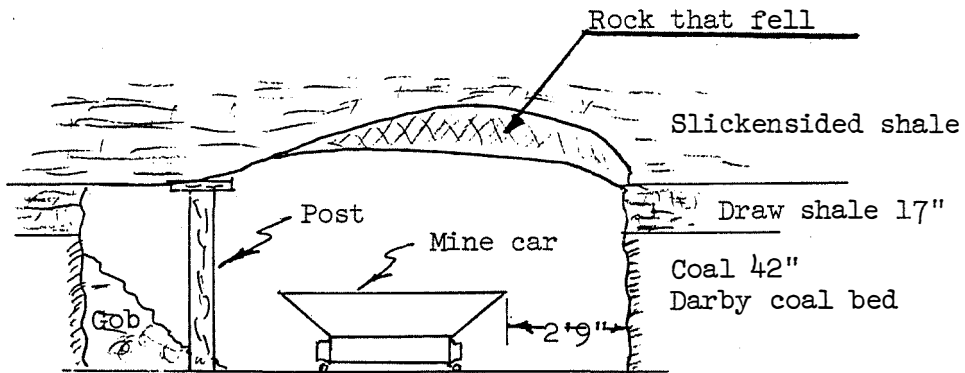
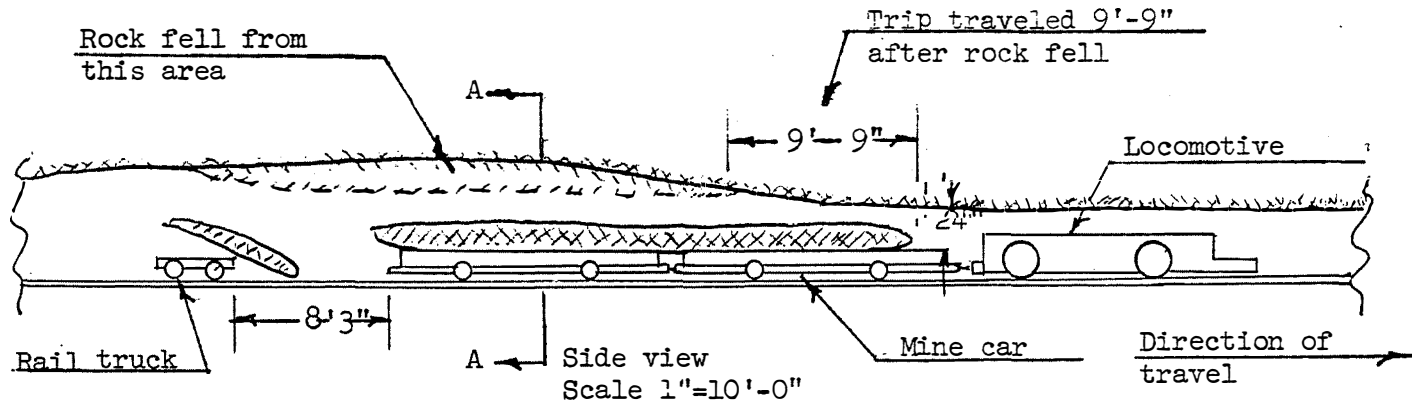
J. D. Fee, Jr.	36	Trackman	Married	5
Elbert Cox	51	Trackman	Married	1
Kenneth Dean	33	Shuttle-Car Operator	Married	3





SKETCH NO. 1  
 MULTIPLE FATAL ROOF-FALL (MAN-TRIP) ACCIDENT  
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April 28, 1961



Section A-A  
Scale 1"=5'-0"

SKETCH NO. 2  
 MULTIPLE FATAL ROOF-FALL (MAN-TRIP) ACCIDENT  
 ELZO MINE  
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 YANCEY, HARLAN COUNTY, KENTUCKY

April 28, 1961

SKETCH NO. 3

MULTIPLE FATAL ROOF-FALL (MAN-TRIP) ACCIDENT

ELZO MINE

HARLAN FUEL COMPANY

YANCEY, HARLAN COUNTY, KENTUCKY

April 28, 1961

Scale 1"=100'

Rooms off  
1 Right

3 2 1 Left 1 Right

2100' to face

Location of accident

Track

300' +

Faulty Roof  
Area

Rock fall that occurred about  
the time of accident

Rock fall approximately  
1 hour after accident

No. 2 Main

N

