

UNITED STATES
DEPARTMENT OF THE INTERIOR
MINING ENFORCEMENT AND SAFETY ADMINISTRATION

District 7

REPORT OF UNDERGROUND COAL MINE INVESTIGATION
MULTIPLE FATAL FALLING OBJECT (ELEVATOR) ACCIDENT

CHETOPA MINE (I.D. NO. 01-00323)
ALABAMA BY-PRODUCTS CORPORATION
GRAYSVILLE, JEFFERSON COUNTY, ALABAMA

July 24, 1977

By

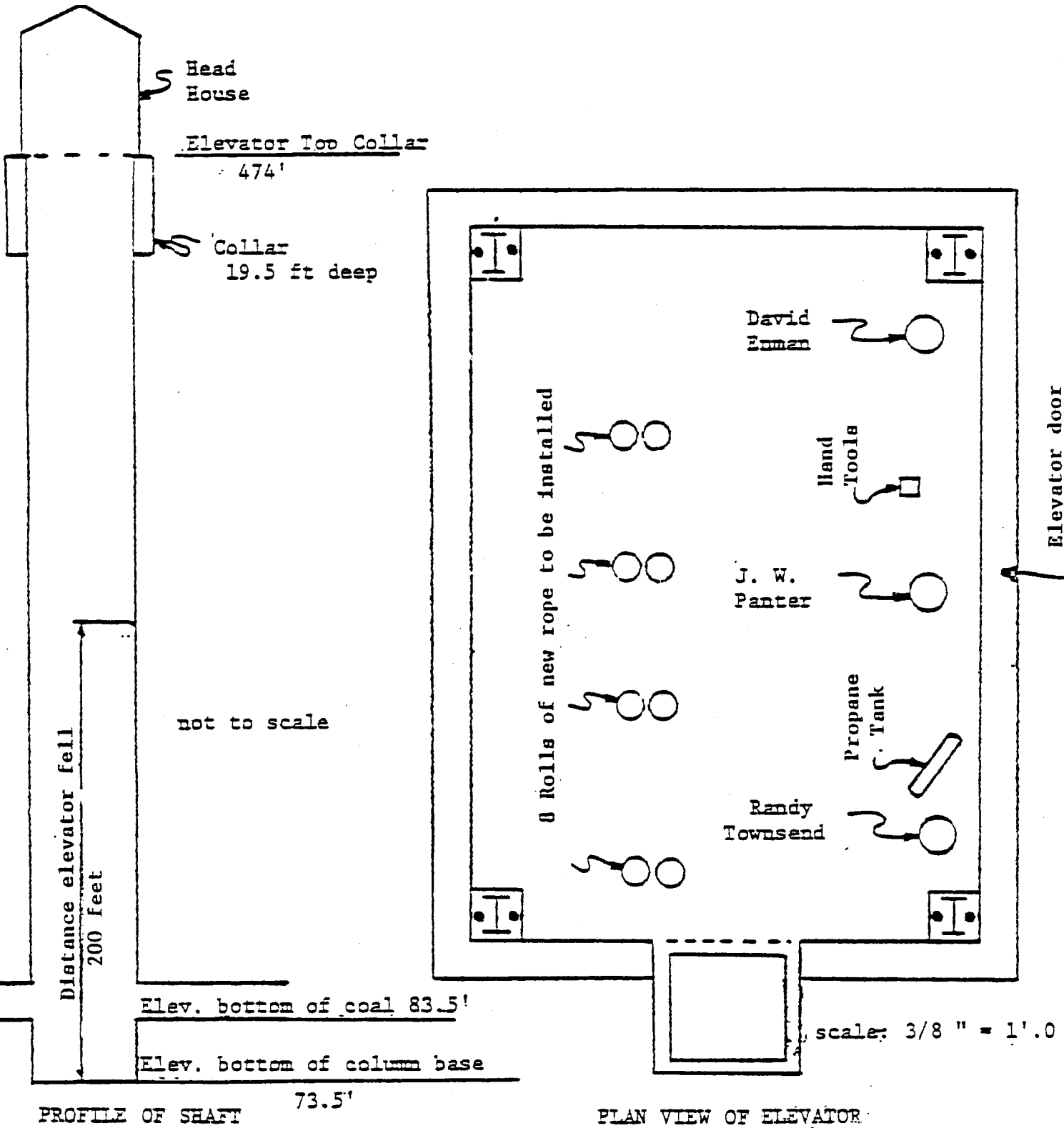
Harlan E. Blanton, Sr.
Federal Coal Mine Inspector

Originating Office - Mining Enforcement and Safety Administration
228 West Valley Avenue
Birmingham, Alabama 35209
John E. Weekly, Subdistrict Manager

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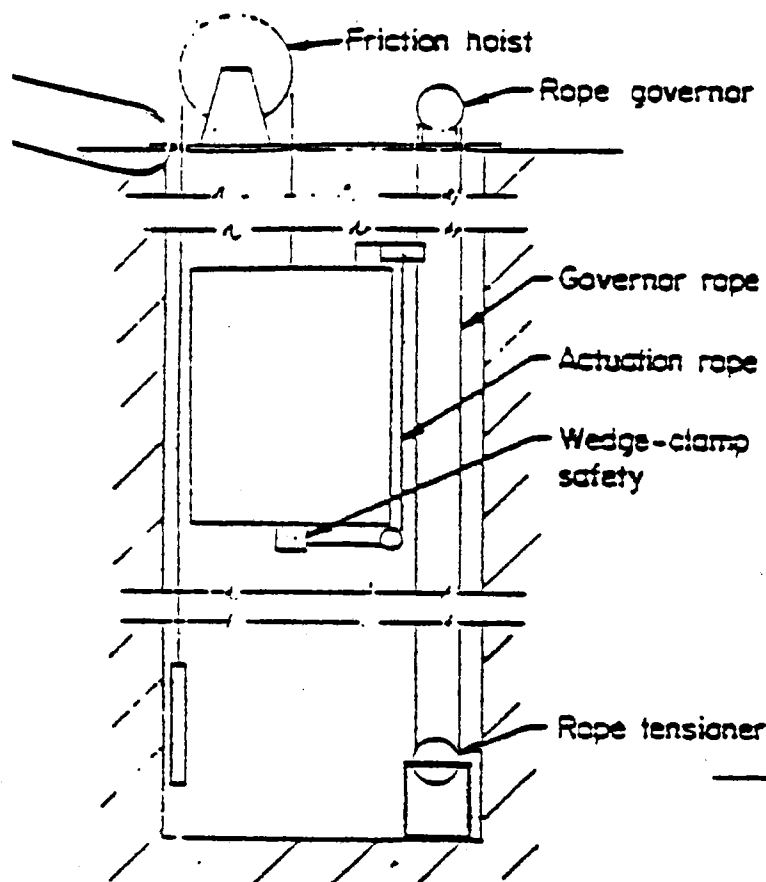
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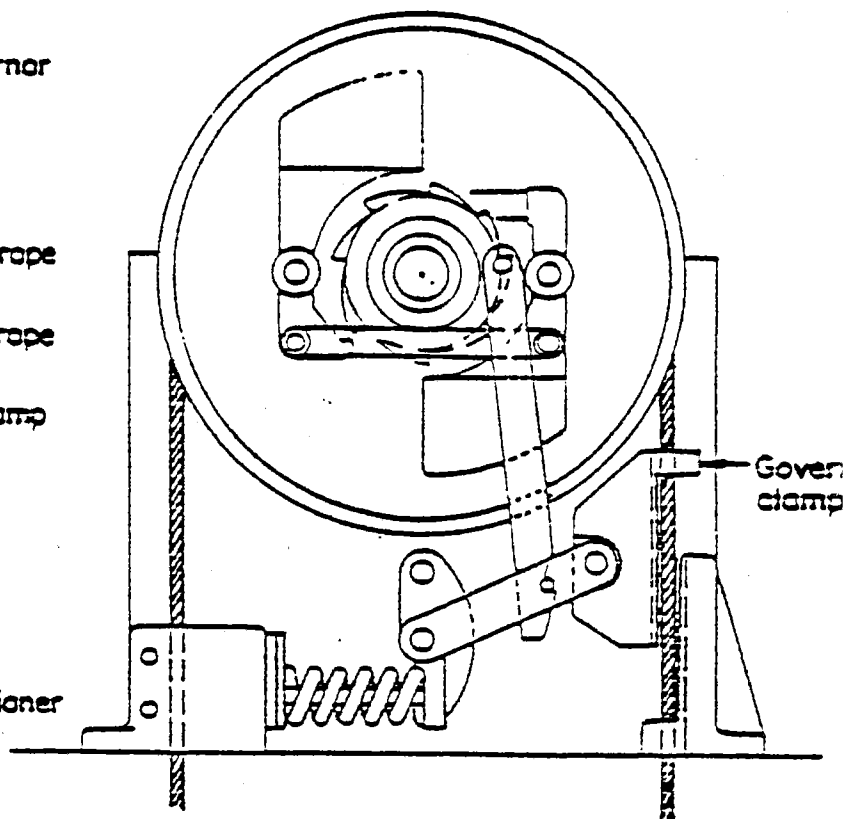
SKETCH OF MULTIPLE FATAL FALLING OBJECT (ELEVATOR) ACCIDENT

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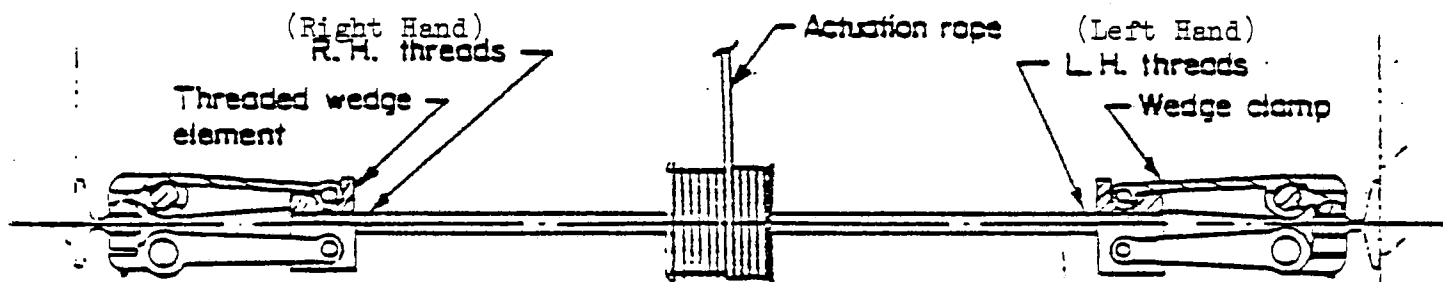
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Elevator Schematic



Rope Governor



Type B (Wedge-Clamp) Safety
Plan View

MULTIPLE FATAL FALLING OBJECT (ELEVATOR) ACCIDENT

CHETOPA MINE (I.D. NO. 01-00323)
ALABAMA BY-PRODUCTS CORPORATION
GRAYSVILLE, JEFFERSON COUNTY, ALABAMA

Abstract of Investigation

Title of Investigation:
MULTIPLE FATAL FALLING OBJECT
(ELEVATOR) ACCIDENT

Report Date: July 24, 1977

Mine: Chetopa

Mine I.D. Number: 01-00323

Company: Alabama By-Products Corporation

Town, County, State: Graysville, Jefferson
County, Alabama

Author(s): Harlan E. Blanton

Mine Information

Daily Production 1800

Surface Employment 39

Underground Employment 144

Thickness of Coalbed 10 feet

Last Quarter Disabling Injury Frequency
Rate (HSAC) for:

Industry 33.68

This Operation 0

Training Program Approved yes

Originating office - Mining Enforcement
and Safety Administration Coal Mine
Health and Safety District 7

Address: 228 West Valley Avenue
Birmingham, Alabama 35209

Authority - This report is based on an
investigation made pursuant to the
Federal Coal Mine Health and Safety Act
of 1969 (83 Stat. 742)

Abstract

On Sunday, July 24, 1977 at 1:50 a.m., a falling object type accident occurred in the elevator shaft of the Chetopa Mine, Alabama By-Products Corporation, resulting in the deaths of J. W. Panter, David Enman and Randy Townsend and injuries to Gary Headley. Panter, age 42, had 8 years experience as a machinist for Alabama By-Products. Thompson, age 25, Enman, age 37, and Headley, age 25 years, were employed by Bagby Elevator Company. The accident occurred while the men were attempting to rope the elevator when the elevator fell 200 feet to the bottom of the shaft.

Information for this report was compiled through a MESA Investigation that was
started July 24, 1977

Name

Address

Company officials:

President Fred Koenig, Post Office Box 10246, Birmingham, Alabama 35202

Superintendent G. D. Sparks, Graysville, Alabama

Safety Director Walter Holt, Goodsprings, Alabama

Principal officer - H&S G. D. Sparks, Graysville, Alabama

Labor Organization UMWA Graysville, Alabama

COMMENTARY

On Saturday, July 23, 1977, the maintenance crew entered the mine at the regular time, 7:00 a.m. to begin repairs on the underground equipment. Donald Dale, chief electrician, observed at 11:00 a.m. that a rope on the automatic elevator had broken. The broken rope was removed from the elevator and the elevator remained in service to remove the underground employees. Dale contacted G. D. Sparks, mine superintendent, by phone and told him of the occurrence. Dale was advised to contact Bagby Elevator and Electric Company and have them install new ropes on the elevator. The Bagby Superintendent, Paul O. Bourgeois was contacted and advised of the reroping of the elevator.

Bourgeois arrived at the mine at approximately 9:30 p.m. Saturday, July 23, 1977. Four rolls of cable were loaded into the cab of the elevator. When the elevator was positioned at the half-way point in the shaft, the second rope broke. Bourgeois asked Headly, who was on the top of the elevator if he was alright. Headley stated he heard the rope break and positioned himself on the side of the cab and the falling cable missed him. The broken cable was cut and allowed to fall down the shaft. After positioning the cab in relation to the counterweight Bourgeois, Headly, Enman, and Townsend returned to the top of the shaft. Bourgeois made the decision to load 4 more spools of rope on the elevator. The necessary brackets were welded together (using Alabama By-Products Corporation employees) and placed on the elevator. The steel pipe used to guide the spools of rope were welded to the brackets to hold them in place. Four men were needed to perform the reroping operations.

Bagby only had three employees, therefore, Panter, Alabama By-Products employee (victim) volunteered to help do the reroping of the elevator. With Panter, Enman and Townsend in the elevator cab and Headley on top operating, the elevator was lowered to within 5 feet of the predetermined location in the shaft. At this point, the third rope broke. The employees in the cab called to the headhouse and stated they lacked 5 feet of being in the proper position and for Bourgeois to stand by the governor. Paul Bourgeois, who was in the headhouse, had removed the cover from the governor and was standing by when he saw the rope come over the drive pulley and heard the governor engage. He stated to Weldon, Alabama By-Products employee, who was also in the headhouse, that the elevator had fallen. Weldon called to the employees, but did not receive any response. Walter Glaze (foreman) Alabama By-Products, was on the ground and stated that the elevator had fallen to the bottom of the shaft. Glaze told Bourgeois that he would go, by means of the slope, to the shaft bottom and investigate. Glaze arrived at the bottom of the shaft and heard someone calling for help, and found Headly in the back of the cab. With Headly's assistance, Glaze removed Headly from the wreckage of the elevator.

Glaze called the surface and revealed what had happened and stated he needed help. Help arrived and the victims were removed from the cab of the elevator. The County Coroner pronounced the victims dead on the surface about 5:00 a.m., Sunday, July 24, 1977. Death was attributed to crushing injuries to the chest, head and abdomen.

DISCUSSION AND EVALUATION

The investigation revealed the following factors relevant to the occurrence of the accident.

1. The elevator was manufactured by Armor Elevator Company. The elevator was used as a regular mantrip and had a noted capacity of 32 men or 6,000 pounds.
2. The elevator was a single wrap traction type and was roped with 8 5/8 inch ropes, 8 x 19 classification traction steel manufactured by U. S. Steel Corporation. The catalog breaking strength of each rope is 23,000 lbs.
3. The Alabama By-Products Corporation has an elevator inspection and lubrication contract with Bagby Elevator and Electric Company on a monthly basis. Bagby was to report any defect found to the operator.
4. A Bagby inspector recommended that the traction ropes be replaced on September 23, 1976; however, no action was taken by the operator on this recommendation.
5. On the day of the accident, after the second rope had broken, it was decided by a Bagby representative that 4 additional spools were to be placed on the elevator which weighed approximately 1,000 pounds each.
6. The shaft was 18 feet in diameter, 409 feet deep, unlined and dripping water was present.
7. The position of the governor-rope release carrier in the shaft was approximately 205 feet from the floor of the machinery room, which indicates the governor rope gripping jaws functioned on overspeed and gripped the governor rope which pulled the safety rope from the releasing carrier.
8. Approximately 38 feet of the safety actuation rope was attached to the governor-rope releasing carrier socket, indicating that the safety rope pulled out of the safety rope drum. Details of the conveyance were not available to determine the original recommended length of the safety rope. The safety rope was attached to the drum by means of two 3/8 inch Allen Head screws (original design).
9. The end of the actuation rope that pulled from the drum had about 1 1/2 inches of two strands missing, indicating the Allen Head screws had cut the two strands.
10. The governor rope was of stainless steel type; however, the manufacturer of the governor specified that traction steel type be used.

11. The safety jaw gibs were badly worn, thickness of gibs ranged from 0.931 to 0.711 which would require more revolutions of the safety drum to cause the safety jaws to grip the guide rails which is a probable reason for the actuation rope pulling from the safety drum. When the safetys are fully set, there should be three full turns of rope remaining on the drum. Examination of the safety rope drum indicated that there were no more than 7 turns of safety rope stored on the drum prior to the accident. The safety rope drum was designed to hold 11 turns of rope. Photographs clearly show that 12 threads of the thread bar were beyond the safety wedge. Threads on the thread bar were 4 per inch, which indicated that 1 revolution of the rope drum would move the safety wedge 1/4 inch. It would take approximately 20 inches of rope being pulled from the drum to move the safety drum one complete revolution. Elevator safety standards (ANSI A 17.1) require that the actuation rope move no more than 30 inches before the safety jaws begin to exert pressure against the guide rails. Approximately 140 inches of rope had been pulled from the safety drum.

12. The amount of lubricant remaining on the guide rails indicate they were being lubricated excessively. Elevator standards state that when lubrication is necessary, the only type that can be used shall be recommended by the manufacturer of the ropes. A Bagby representative stated that 30 S.A.E. motor oil was being used. An Alabama By-Products official stated that at sometime in the past, the elevator traction ropes were over lubricated and that Bagby Elevator and Electric Company recommended applying Fullers Earth compound to the ropes in order to dry them out and remove excessive lubrication. During the investigation, the manufacturers of the safety catches (Armor Elevator) would not comment as to their recommendation; however, Bagby's certified elevator inspector determined that this was not an appropriate lubricant.

13. The traction ropes broke because they were worn and corroded to the point where they could no longer sustain the load. The use of Fullers Earth and dripping water probably hastened the wear and corrosion of the traction ropes.

FINDING OF FACTS

1. A test of the safety catches of the elevator was not being made every 2 months. A violation of section 75.1400.

2. The elevator was not removed from service when the first rope broke. A violation of 75.1725.

3. The test performed at the Denver Technical Support Center of the ropes revealed that they were deteriorated to the degree that they were only 29% effective in substaining the load. A violation of 75.1400

4. Repairs were to be performed on the elevator at a point half-way down the shaft and the elevator was not secured. A violation of 75.1725 (c).

CONCLUSION

This accident occurred because management allowed the ropes to deteriorate to the point that they were no longer strong enough to sustain the load. Contributing factors to the accident were:

1. Safety catches failed to operate because they were not maintained in proper operating condition.
2. Continued use of the elevator after the first rope had broken.
3. Failure to secure the elevator while repairs were being performed.
4. Human error: (a) attempting to change 5 ropes, (b) decision to load 4 more spools onto the elevator

Respectfully submitted,

/s/ Harlan E. Blanton, Sr.

APPENDIX

The investigation was conducted by the Mining Enforcement and Safety Administration and those persons present during the investigation were :

ALABAMA BY-PRODUCTS CORPORATION

S. L. Lewis	Vice-President Operations
Wilfred Self	Vice-President Mining
J. E. Breland	Vice-President & Gen. Supt. of Mines
James A. Brown	Division Superintendent
G. D. Sparks	Superintendent
Walter Holt	Safety Director
H. L. Meadows	Safety Inspector
Courtney H. Mason	Attorney
Fournier J. Gale	Attorney
John Odom	General Mine Foreman
Walter Glaze	Maintenance Foreman
Donald Dale	Chief Maintenance Foreman
Joe Weldon	Machinist
W. T. Powell	Machinist

REPRESENTATIVES OF MINERS
UNITED MINE WORKERS OF AMERICA

Charles Fuller	District Safety Coordinator
Sylvester Marable	District Safety Coordinator
Marlon Roberts	President Local 1483
Ted E. Gardiner	Chairman, Safety Committee
Kenny W. Odom	Member Safety Committee
Lyland Crane	Member Safety Committee
Billy Gardiner	Appointed Safety Committee Member

ARMOR ELEVATOR COMPANY

Joe Taylor	Manager Company Service
Dick Granberg	Engineer

UNITED STATES STEEL SUPPLY

Robert W. Fisk	Wire Rope Engineer
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BAGBY ELEVATOR AND ELECTRIC COMPANY

Paul Bourgeois	Superintendent
Paul G. Smith	Attorney
Paul Bourgeois, Jr.	Bagby Employee
R. L. Thompson	Elevator Service Employee

DEPARTMENT OF INDUSTRIAL RELATIONS
DIVISION OF SAFETY AND INSPECTIONS
STATE OF ALABAMA

H. T. Williams	Chief of Divisions
Paul Messina	Supervisory Inspector
John W. Sandlin	Inspector

JEFFERSON COUNTY SHERIFF DEPARTMENT

Gerald Haynes	Elevator Inspector
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REPRESENTATIVES
ENMAN FAMILY

Mark B. Polson	Attorney
Fred Pickard	Attorney

MINING ENFORCEMENT AND SAFETY ADMINISTRATION

John E. Weekly	Subdistrict Manager
Don Hutchinson	Chief of Division of Safety Tech. Denver Technical Support Center
William H. Meadows	Supervisory Mining Engineer
Jerry Taylor	Engineer, District 7 Barbourville, Kentucky
James Moncrief	Safety Specialist Arlington, Virginia
Fred Williams	Mine Inspector, Supervisor
C. E. Whalen	Federal Coal Mine Inspector
Billy Donaldson	Federal Coal Mine Inspector (elec.)
Harlan E. Blanton, Sr.	Federal Coal Mine Inspector

DATA SHEET

Victim Data

Name J. W. Panter Sex Male SSN 417-40-4124
Age 42 Job Classification Machinist Experience at this
Classification 8 years Total Mining Experience 8 years

What activity was being performed at time of accident? Helping install ropes
Victim's experience at this activity first time Was victim trained in
this task? no

Health and Safety Courses/Training Received (Related to Accident) Date Received
All safety courses required by UMWA contract and MESA - none on elevator

Supervisor Data (Supervisor of Victim) (Paul Bourgeois, Superintendent Construction Bagby Elevator Company - 28 years)

Name Walter Glaze, regular supervisor A.B.C. Certified: Yes XX No
Experience as Supervisor 12 years Total Mining Experience 21 years

Health and Safety Courses/Training Received Date Received
All safety courses - including electrician

When was the supervisor last present at accident scene prior to the accident?
on surface near elevator What did he do when he was there?
communications

When was he last in contact with the victim? just prior to accident
Did he issue instructions relative to the accident? no
Was he aware of or did he express an awareness of any unsafe practice or
condition? no

Was he involved in any activity other than supervision?
Paul Bourgeois requested the assistance of the victim from Walter Glaze to help his
crew of three men to change the elevator rope.

DATA SHEET

Victim Data

Name David R. Enman Sex male SSN _____
Age 37 Job Classification Elevator Mechanic (Bagby) Experience at this
Classification 10/7/69 Total Mining Experience n/a

What activity was being performed at time of accident? changing ropes
Victim's experience at this activity 8 years Was victim trained in
this task? yes

Health and Safety Courses/Training Received (Related to Accident) Date Received
attended and taught NEIP elevator school

Supervisor Data (Supervisor of Victim)

Name Paul O. Bourgeois Certified: Yes XX No _____
Experience as Supervisor _____ Total Mining Experience _____

Health and Safety Courses/Training Received Date Received

When was the supervisor last present at accident scene prior to the accident? _____
July 23, 1977 9:30 p.m. What did he do when he was there? _____

When was he last in contact with the victim? July 23, 1977 9:30 p.m.

Did he issue instructions relative to the accident? _____

Was he aware of or did he express an awareness of any unsafe practice or
condition? _____

Was he involved in any activity other than supervision?

DATA SHEET

Victim Data

Name Randy A. Townsend Sex male SSN 417-68-6370
Age 25 Job Classification elevator mechanic (Bagby) Experience at this
Classification 6/3/70 Total Mining Experience n/a

What activity was being performed at time of accident? changing ropes

Victim's experience at this activity 7 years Was victim trained in
this task? yes

Health and Safety Courses/Training Received (Related to Accident) Date Received
Attended NEIP elevator school

Supervisor Data (Supervisor of Victim)

Name Paul O. Bourgeois Certified: Yes ^{xx} No
Experience as Supervisor _____ Total Mining Experience _____

Health and Safety Courses/Training Received Date Received

When was the supervisor last present at accident scene prior to the accident? July 23, 1977 9:30 p.m.
What did he do when he was there? _____

When was he last in contact with the victim? July 23, 1977 9:30 p.m.

Did he issue instructions relative to the accident? _____

Was he aware of or did he express an awareness of any unsafe practice or
condition? _____

Was he involved in any activity other than supervision?
