

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

District 2

REPORT OF INVESTIGATION
(UNDERGROUND COAL MINE)

FATAL ROOF-FALL ACCIDENT

Rushton Mine (ID No. 36 00856)
Rushton Mining Company
Rush Township, Centre County, Pennsylvania

October 2, 1979

by

Ronald L. Costlow
Coal Mine Inspector

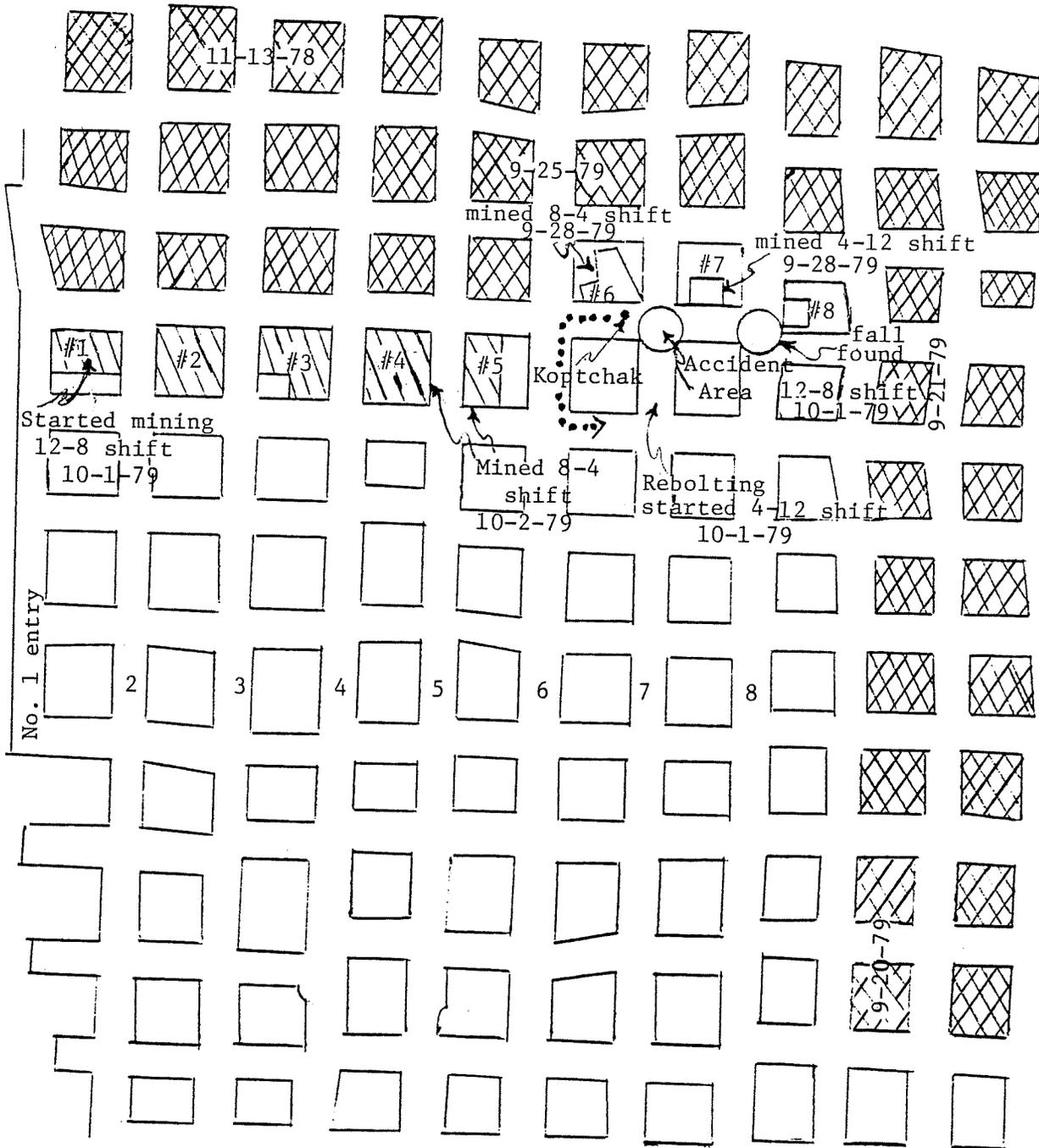
Originating Office - Mine Safety and Health Administration
Sunray and Goucher, Johnstown, Pennsylvania 15905
William R. Devett, Subdistrict Manager

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Sketch of Fatal Roof-Fall Accident
 Rushton Mine (ID No. 36 00856)
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Sketch No. 1 (Not to Scale)



Abstract of Investigation

Authority — This report is based on an investigation made pursuant to the Federal Mine Safety & Health Act of 1977

SECTION A — IDENTIFICATION DATA

1. Title of investigation: Fatal Roof-Fall Accident

2. Date MSHA investigation started: October 2, 1979

3. Report release date: December 27, 1979

4. Mine: Rushton Mine

5. Mine ID number: 36 00856

6. Company: Rushton Mining Company

7. Town, County, State: Rush Twp., Centre Co., PA

8. Author(s): Ronald L. Costlow

SECTION B — MINE INFORMATION

9. Daily production: 2,400 tons

10. Surface employment: 46

11. Underground employment: 198

12. Name of coalbed: Brookville

13. Thickness of coalbed: 60"

SECTION C — LAST QUARTER INJURY FREQUENCY RATE (HSAC) FOR

14. Industry: 7.75

15. This operation: 14.22

16. Training program approved: Yes

17. Mine Profile Rating: 787

SECTION D — ORIGINATING OFFICE

18. Mine Safety and Health Administration
Coal Mine Safety and Health District No. 2
Address: Sunray & Goucher, Johnstown, PA
15905

SECTION E — ABSTRACT

On Tuesday, October 2, 1979, at about 3:15 p.m., a roof-fall accident occurred at the intersection of the No. 7 entry near survey station No. 2120 of the 1 east mains 7 butt (009) working section of the Rushton mine resulting in the death of Marilyn McCusker, general laborer, who was filling in as a roof-bolter helper. McCusker, age 35, had about two years mining experience, approximately three months of which was as a roof-bolter helper at intermittent intervals. The accident occurred when McCusker (victim) was retreating from the intersection after she had noticed the roof starting to dribble. She was caught under the edge of a fall approximately 20 feet by 25 feet and up to 2½ feet in thickness. Management's failure to adequately support a known bad roof area with temporary roof supports until additional permanent roof supports could be installed was the cause of the accident. Failure to carry out a method of pillar recovery that would eliminate pillar points and pillars that project in by the breakline, and to effectively train all personnel required to install roof supports were contributing factors.

SECTION F — MINE ORGANIZATION

Company officials:	Name	Address
19. President:	Warren H. Hinks, Jr.,	Maclanel Bldg., 215 Main St., Johnstown, PA 15901
20. Superintendent:	Blair Rickard,	P.O. Drawer 589, Philipsburg, PA 16866
21. Safety Director:	Clarence Burke,	Port Matilda, PA 16870
22. Principle officer—H&S:	Blair Rickard,	P.O. Drawer 589, Philipsburg, PA 16866
23. Labor Organization:	U.M.W.A.,	District 2, 521 W. Horner St., Ebensburg, PA 15931
24. Chairman—H&S Committee:	Bob Apple,	Box 127, Fallentimber, PA 16639

COMMENTARY

On Tuesday, October 2, 1979, the 1 east 7 butt section crew, under the supervision of Tom Hazelton, section foreman, entered the mine at 8:00 a.m., and traveled to the active areas of the working section, arriving there about 8:20 a.m. Hazelton examined the proposed work areas and assigned duties and work locations to the crew members. Thereafter, coal production began and continued normally.

Harry Koptchak, roof-bolter operator, and Marilyn McCusker, roof-bolter helper, were assigned to install roof bolts in the defective roof area of the No. 7 entry which was being rehabilitated to recover the Nos. 6, 7, and 8 pillar blocks abandoned the previous day because of bad roof conditions. Koptchak drilled a test hole which indicated breaks and partings at about three or four locations within the 2-foot horizon. The torque of the first bolt installed was about 190-foot/lbs. After installing about seven roof bolts, Koptchak informed Hazelton that he needed more large bearing plates, and was told to go back to the supply track and get them. When he returned with bearing plates and additional bolts, Koptchak installed two more rows of bolts before stopping for lunch about 12 noon.

After their lunch break, Koptchak trammed the roof-bolting machine into the intersection and drilled a test hole on the left side. The test hole indicated there was a parting in the mine roof at about the 4-foot horizon. Koptchak reported the condition to the foreman, and was instructed to install 6-foot bolts. Koptchak and McCusker then went back to the supply track to get some roof straps, additional 6-foot bolts, and large bearing plates.

About 1:30 p.m., Jim Amon, acting mine foreman, entered the section and along with Hazelton made an examination of the area of the No. 7 entry where the rebolting was being done. Hazelton told Koptchak that the roof was drummy along the right side and the entire area would have to be rebolted. Amon left the section a short time later, and Hazelton went over to the adjacent entry where the miner crew was extracting the No. 5 pillar block located between the Nos. 5 and 6 entries.

After installing about four or five 6-foot bolts in conjunction with a 16-foot roof strap on the left side, Koptchak backed the bolting machine partially outby the intersection. He began marking the proposed bolt hole locations in the crosscut between the Nos. 6 and 7 entries near the pillar split of the No. 6 stump when McCusker, who was in the intersection near the inby end of the bolting machine, yelled to him that the roof was starting to dribble. Koptchak looked up and saw the roof chipping in the direction of the outby stump between the Nos. 7 and 8 entries. He started toward the intersection and after realizing that he could not make it out safely, turned and went back through the crosscut between the Nos. 6 and 7 entries, through the breaker posts, and down along the No. 6 stump in the next row of pillars. He said McCusker had started out past the bolting machine in the intersection after calling to him.

Hazelton was in the outby area of the working section when he heard the roof fall. He thought at first it was a fall in the pillar which had been extracted until he heard a crew member yelling. Upon arriving at the intersection of No. 7 entry, Hazelton said it was dusty and a little hard to see. The light from McCusker's cap lamp could be seen under the edge of the fall. Hazelton told the crew members

to start setting timber and to get the hydraulic jack from the tool chest. He then called outside and reported the accident and asked for more help and another large lifting jack. Using the hydraulic jack that was available on the section, the rock was raised enough for Hazelton to reach in and check the victim's pulse. He could not detect any.

A short time later another jack was brought to the accident scene. The rock was raised and the victim was removed. The victim was then placed on a stretcher and transported to the surface and then by ambulance to the Philipsburg General Hospital, where she was pronounced dead at 4:08 p.m. by Robert Trump, Deputy Coroner, Centre County.

DISCUSSION AND EVALUATION

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

1. According to dates shown on a mine map, the area of 7 butt, 1 east mains, where the accident occurred was developed in October, 1972.
2. Jay Zimmerman, section foreman, stated during the investigation that his crew had mined the No. 6 pillar block located between the Nos. 6 and 7 entries on the 8 a.m. to 4 p.m. shift on Friday, September 28, 1979. He said there may have been one to two shuttle cars of coal left to mine before the initial split was cut through, but because it was nearing the end of his shift, he didn't finish it. He told Hazelton it was timbered and ready to mine.
3. Hazelton stated during the investigation that he made the decision not to finish mining the No. 6 pillar block on the 4 p.m. to midnight shift, Friday, September 28, 1979. The reason for his decision was not established. He instructed his crew to start mining the pillar block off the No. 8 entry. He said about an 18-foot by 20-foot lift was mined in the No. 8 pillar block, bad roof was encountered, and the continuous miner was moved to the No. 7 pillar block where an 18-foot lift was mined.
4. Zimmerman said he started mining the No. 1 pillar block in the next row of pillars on the 12:01 a.m. to 8:00 a.m. shift on Monday morning, October 1, 1979. He said the bottom was heaving in the area of the No. 6 pillar block which he had previously mined on September 28, 1979, and some of the posts that had been installed in the pillar split were broken. His roof examinations indicated the roof was drummy in the No. 7 entry near station 2120, and a cutter was present in the mine roof going into the left side of the intersection. He also stated that the intersection in the No. 8 entry had fallen in after he had completed a preshift examination on Sunday night between 9 p.m. and 12 p.m., and before he returned to the working section with the crew on the 12:01 a.m. to 8:00 a.m. shift.

5. James Amon, acting mine foreman, said he was in the No. 7 entry on Monday, October 1, 1979, and other than a cutter on the left side of the intersection everything else appeared normal. He said that too much coal had been left in those blocks and more would have to be recovered. He gave instructions to re-bolt the roof. The rebolting work was started approximately 40 feet outby station 2120 in the No. 7 entry on the 4 p.m. to 12 a.m. shift on Monday, October 1, 1979.
6. Tom Hazelton, section foreman, on the 8 a.m. to 4 p.m. shift on October 2, 1979, the day of the accident, said he examined the work areas at the start of the shift and found them safe.
7. Hazelton said the bolting crew from the previous shift told him there was a break in the roof at the 2-foot horizon, and they were installing 4-foot conventional bolts. Harry Koptchak, roof-bolter operator, on the 8 a.m. to 4 p.m. shift on October 2, 1979, also stated his test holes showed a break in the roof at the 2-foot horizon.
8. Roof bolts 4-feet in length and 5/8-inch diameter in conjunction with bearing plates 6-inches by 16-inches were used to rebolt the affected area in the No. 7 entry up to the intersection near station No. 2120.
9. Koptchak said a test hole he drilled in the left side of the intersection indicated separation in the mine roof at about the 4-foot horizon. He informed Hazelton of this and was told to install 6-foot bolts. Koptchak said he installed about four or five 6-foot bolts in conjunction with a 16-foot roof strap in the intersection.
10. Koptchak said the torque on the roof bolts he had installed and checked during the shift averaged about 170-foot/lbs.
11. Koptchak said his roof examinations of the affected area in the No. 7 entry indicated the roof was drummy at various locations.
12. After Hazelton made an examination of the working area in the No. 7 entry about 1:30 p.m., on October 2, 1979, he told Koptchak the roof was drummy toward the right stump, and the entire area would have to be rebolted.
13. Koptchak said he did not install any temporary supports while rebolting the affected area in No. 7 entry because he was working between roof bolts previously installed during the initial development of the section. He said he had not received any instructions from the section foreman or acting mine foreman.
14. Hazelton said he observed Koptchak installing roof bolts in the affected area in the No. 7 entry and did not see any temporary supports installed, nor did he or Amon instruct Koptchak to install them. He stated during the investigation that he understood the approved roof-control plan, but did not fully understand the part of the plan on rebolting. Hazelton further stated that he had worked in this section for approximately four weeks, and that most of his previous experience in supervisory work was on advance work.

15. Hazelton's crew finished mining the No. 4 pillar block, and was mining the No. 5 pillar block when the accident occurred on October 2, 1979.

16. Koptchak was near the pillar split of the No. 6 pillar block marking proposed bolt locations when McCusker yelled to him that the roof was starting to dribble. Realizing that he could not make it through the intersection, he turned and went back through the crosscut between Nos. 6 and 7 entries and down along the No. 6 pillar block in the next row of pillars.

17. The size of pillar blocks being mined was about 40-feet by 40-feet.

18. After the victim was removed from under the rock, Hazelton had the section power deenergized, and the accident area dangered off.

19. During the investigation of the accident underground on Tuesday night, October 2, 1979, Hazelton said that all of the posts (35) installed in the No. 7 entry from station 2120 outby for approximately 40 feet were installed after the accident occurred. An additional five posts were installed between the left rib and the roof-bolting machine on the night of the investigation.

FINDINGS OF FACT

1. Rebolting was being done in a known bad roof area, and the required two rows of temporary roof supports were not installed across the place so that work in progress could be done between the installed temporary roof supports and permanent roof supports installed in sound roof, a violation of Section 75.200, 30 CFR, Part 75.

2. Management failed to carry out a method of pillar recovery that would eliminate pillar points and pillars that project inby the breakline, a violation of Section 75.201, 30 CFR, Part 75.

3. Safety Precaution No. 2 of the approved roof-control plan requires that all personnel required to install roof supports shall be trained; and this training shall insure that such persons are familiar with the functions of the support being used, proper installation procedures, and the approved roof-control plan. Both the roof-bolter operator and the section foreman questioned during the investigation stated they understood the approved roof-control plan; however, they said they were not familiar with Safety Precaution No. 7 of the approved plan, which requires the installation of two rows of temporary roof supports when rebolting work is being done, a violation of Section 75.200, 30 CFR, Part 75.

4. The width of the No. 7 entry from the accident area to a point approximately 40 feet outby survey station No. 2120, ranged from 21-feet to 24-feet and rib line posts were not installed to reduce the roadway width to 16 feet as specified in the approved roof-control plan, a violation of Section 75.200, 30 CFR, Part 75.

5. Due to the sloughing of coal ribs, the width of entries ranged from 21-feet to 24-feet; and the diagonal widths of the intersections were from 34-feet to 37-feet; and additional roof supports were not installed. The unsupported roof in the entries measured from the installed row of roof bolts to the rib, ranged from 6-feet to 10-feet, a violation of Section 75.201-1(b), 30 CFR, Part 75.

CONCLUSION

The accident occurred because of management's failure to adequately support a known bad roof area with temporary roof supports until additional permanent roof supports could be installed.

The following factors contributed to the occurrence of the accident:

1. Management's failure to carry out a method of pillar recovery that would eliminate pillar points and pillars that project inby the breakline.
2. Management's failure to adequately support excessive width resulting from the sloughing of coal ribs in the entry and intersection of the accident area, and to reduce the width of the roadways leading to the affected area.
3. Management's failure to effectively train all personnel that are required to install roof supports in the use and installation of temporary roof supports when rebolting work is being done to eliminate a hazardous condition. This includes the installation of additional roof supports where conditions indicate such need.

Ronald L. Costlow
Ronald L. Costlow

Approved by:

William R. Devett

William R. Devett
Subdistrict Manager--Coal Mine
Safety and Health District 2

Donald W. Huntley

Donald W. Huntley
District Manager--Coal Mine
Safety and Health District 2

APPENDIX

List of persons furnishing information and/or present during the investigation:

Pennsylvania Mines Corporation Officials

Joseph Kreutzberger	Vice President of Safety and Training
Joseph Kubin	Safety Director

Rushton Mining Company Officials

Blair Rickard	Superintendent
James Amon	Acting Mine Foreman
Thomas Hazelton	Section Foreman
Jonathan Zimmerman	Section Foreman
Robert Hubler	Section Foreman
Clarence Burke	Safety Director
Robert Crain	Company Safety Inspector
Michael Reposky	Training Director
David Rebuck	Mining Engineer

Rushton Mining Company Employees

Harry Koptchak	Roof-Bolter Operator
Terry Carter	Continuous-Miner Operator
Richard Aughenbaugh	Continuous-Miner Helper
Richard Kephart	Ram-Car Operator

Representatives of Miners

Henry Yaskowitz	UMWA Safety Inspector
Bob Apple	Chairman, Safety Committee
Lemuel E. Hollen, Jr.	Member, Safety Committee
Donald L. Baker	Member, Safety Committee

Pennsylvania Department of Environmental Resources

Gerald F. Moody	Deep Mine Inspector, 17th Bituminous District
Ted Britten, Jr.	Acting Deep Mine Inspector, 17th Bituminous District

Mine Safety and Health Administration

Charles S. Battistoni	Supervisory Coal Mine Technical Specialist (Roof Control)
Earl R. McMasters	Coal Mine Inspection Supervisor
George G. Hazuza	Coal Mine Inspector
Julius F. Klaswick	Coal Mine Inspector (Roof Control)
Walter E. Kowaleski	Coal Mine Inspector
Ronald E. Gresh	Coal Mine Inspector
Ronald L. Costlow	Coal Mine Inspector



Data Sheet

SECTION A - VICTIM DATA

1. Name: Marilyn McCusker 2. Sex M F 3. SSN: 110-34-1744

4. Age: 35 5. Job classification: General Laborer

6. Experience at this classification: 2 years, 1 month 7. Total mining experience: 2 years, 1 month

8. What activity was being performed at time of accident? Roof-bolter Helper

9. Victim's experience at this activity: Approximately 3 months

10. Was victim trained in this task? Yes

11. Health and Safety courses/Training received (related to accident) _____ Date received _____

<u>Task Training Roof-bolter Helper</u>	<u>May 8, 1978</u>
<u>On-Job-Training as Bolter Helper</u>	<u>November 1, 2, 3, 1978</u>
<u>On-Job-Training as Bolter Helper</u>	<u>July 1, 1979</u>

Was scheduled for retraining on September 22, 1979, but didn't attend.
Said she would attend another class.

SECTION B - SUPERVISOR DATA (supervisor of victim)

12. Name: Thomas Hazelton 13. Certified: Yes No

14. Experience as supervisor: 2½ years 15. Total mining experience: 8½ years

16. Health and Safety courses/Training received (related to accident) _____ Date received _____

<u>Annual Retraining for Certified Persons</u>	<u>February 9, 1979</u>
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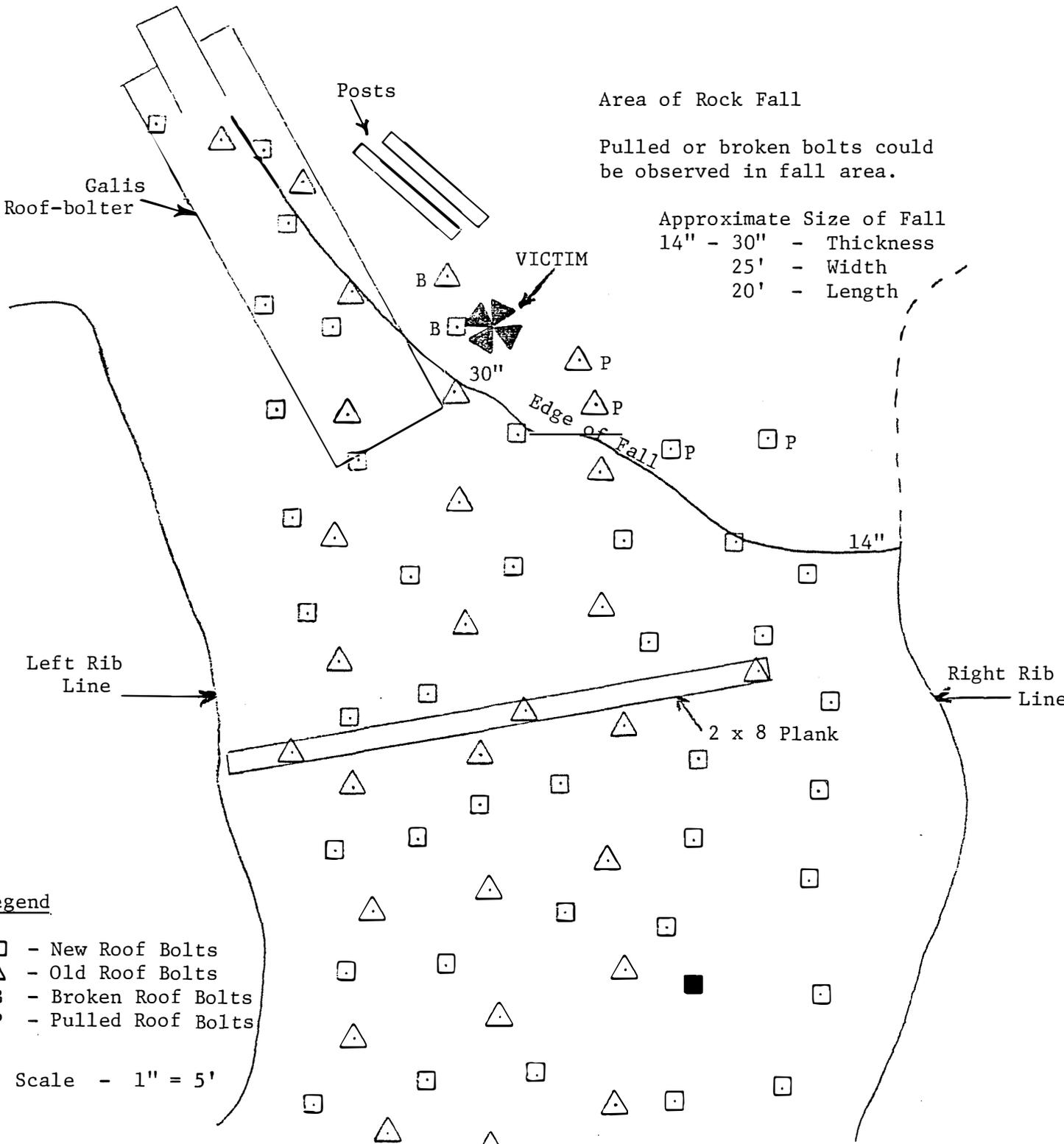
17. When was the supervisor last present at accident scene prior to the accident? About 1:30 p.m.

18. What did he do when he was there? Examined the working area.

19. When was he last in contact with the victim? He observed her when he was in the area where she was working; however, he did not communicate with her.

20. Did he issue instructions relative to the accident? He told the roof-bolter operator the whole area would have to be rebolted.

21. Was he aware of or did he express an awareness of any unsafe practice or condition? He told the roof-bolter operator that the roof was drummy toward the right hand stump, and the whole area would have to be rebolted.



Area of Rock Fall

Pulled or broken bolts could be observed in fall area.

Approximate Size of Fall
 14" - 30" - Thickness
 25' - Width
 20' - Length

Legend

- - New Roof Bolts
- △ - Old Roof Bolts
- B - Broken Roof Bolts
- P - Pulled Roof Bolts

Scale - 1" = 5'

No. 7 Entry of 1 East Mains

Sketch of Fatal Roof-Fall Accident
 Rushton Mine (ID No. 36 00856)
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Sketch No. 2