

I. D. # 35-02683

Report Issued : July 13, 1976

### INTRODUCTION

This report is based on an investigation made pursuant to clause (1) of Section 4 of the Federal Metal and Nonmetallic Mine Safety Act (80 Stat. 772).

Edward Aho, age 69, Social Security Number -1573 married, 2 grown children.

Wayne Aho, age 73, Social Security Number -8507

John William Aho, age 77, Social Security Number -4218, were fatally injured when a series of blast holes detonated as the safety fuses were being lit by means of a carbide lamp.

The three brothers had been mining and prospecting together as a hobby for the past 45 years.

The Albany, Oregon field office was notified of the accident on June 15, 1976 by the Linn County Sheriff's department at 8:15 a.m. An investigation was started immediately by inspection and training center personnel.

Information for this report was obtained by visiting the mine, examining the accident scene, and interviewing persons involved with the initial recovery team, also, information was gathered from immediate family members.

### GENERAL INFORMATION

The Silver Ridge Mine was approximately 30 miles from Green Peter Reservoir near the old mining area of Quartzville, in Linn County, Oregon. A trail from the blacktop roadway by the Sulfide bridge extended up the hillside in a switch-back fashion for approximately one mile to the mine.

The Silver Ridge and several other small mines in the immediate area had been prospected and mined by the victims over the past 45 years. Mining and prospecting had been a hobby of the three brothers as each had pursued other vocations for their livelihood. All three had worked in the mines in Butte, Montana in their younger days.

Access to the mine was through a single adit, 5 feet by 8 feet in cross section, approximately 206 feet long. The host rock, was self-supporting and required only sparse timber support through one faulted section of the adit. Timber support was also installed in the "T" storage area.

Drilling was done with a 5530, Bosch, electric-powered drill.

Electricity was supplied by a gasoline-powered, Kohler generator, supplying 220 volts a.c.

The round being blasted consisted of seven 3½ foot deep holes.

Participating in the investigation were:

**Linn County Sheriff's Department**

Dennis Slyter, detective  
Sergeant G. Horton  
Dr. Danner, County Coroner

Robert Haphey, deputy  
Dave Severns, deputy

**Mining Enforcement and Safety Administration**

E. V. Adams, supervisory mine inspector  
Charles Bogetto, supervisory training instructor

This mine had not been previously inspected by M.E.S.A. as the mine was not known to be operating.

**PRELIMINARY EVENTS**

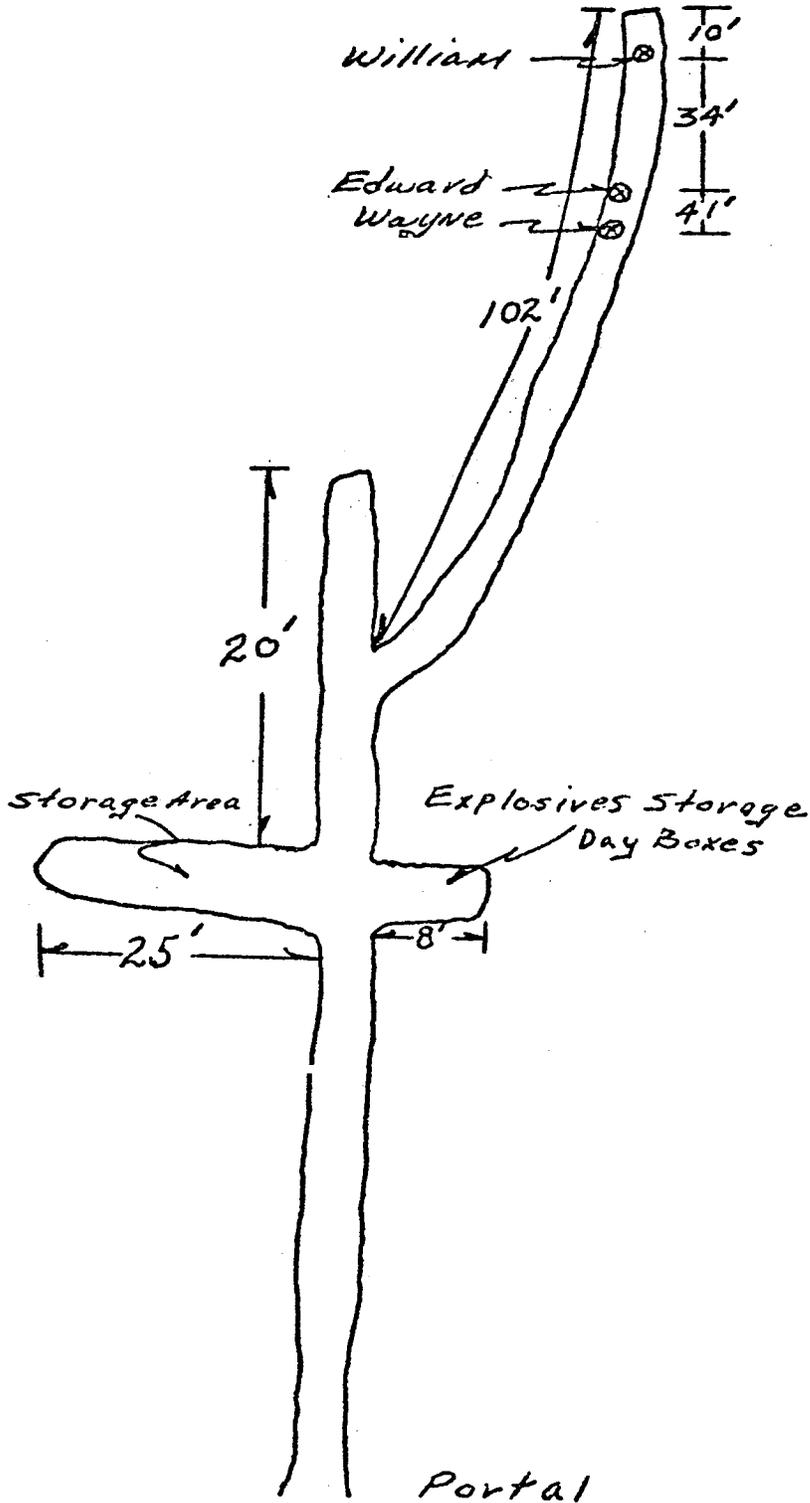
The three brothers left Portland, Oregon via pickup truck on Sunday, June 6, 1976, exact time unknown. They traveled to the Quartzville area approximately 135 miles, where they had a cabin on some placer claims. The cabin was located approximately 3 miles from the subject mine and they would generally drive their pickup truck to the Sulfide Bridge and hike one mile up a trail to their mine. No one knows what their activities were for the following week excepting that they were in Sweet Home, Oregon, about 35 miles from the mine on June 8, 1976, where they purchased 50 pounds of 1½ inch x 8 inch - 40 percent gelatine explosives, 100 feet of safety fuse, and 25 No. 6 blasting caps.

The three men were expected to be back in Portland on Sunday evening, June 13, 1976. At 9:25 p.m., June 14, 1976, Edward Aho's son Dave called the Linn County Sheriff's Department and indicated concern for the three men. A resident deputy at Sweet Home, Oregon was given the message and a search was initiated. When the deputy failed to find the men, he notified the son. The son then left Portland at 11:30 p.m., arrived at the cabin at 2:30 a.m. June 15, 1976 and finding no one at the cabin he, his wife and children drove up to the Sulfide Bridge where they found the pickup. Not being prepared to hike into the mine at night, he started down the road toward town. On the way he met two loggers on their way to work. Ray McKay, one of the loggers, had a radio in his pickup and offered to call the police, but decided not to at this time and instead the two men volunteered to accompany the son to the mine. The group walked up the trail by flashlight and arrived at the mine at daybreak. They entered the mine and found the three bodies. The group then went back to the truck and called the local Sheriff's office by radio. At approximately 5:55 a.m. two deputy sheriffs arrived and accompanied Dave Aho, son, back to the mine. Aid and assistance was radioed by the deputy to his office and to the mortuary.

**DESCRIPTION OF ACCIDENT**

At an undetermined time on Saturday morning June 12, 1976, the three brothers hiked up to the mine and went about their general activities of completing a round of 7 blast holes in the drift.

SKETCH  
OF  
MULTIPLE FATAL (BLASTING) ACCIDENT  
SILVER RIDGE MINE  
AHO BROTHERS, PARTNERS  
QUARTZVILLE, LINN COUNTY, OREGON  
June 15, 1976



Plan view - Not to Scale

After completing the drilling, the drill was taken outside and strapped to a pack board for removal from the mine area. Electric cord was wound up and secured in the drift back, above the timbered area of the mine. The gasoline-powered electric generator was then taken to the "T" storage area of the mine and covered with plastic. All of this cleanup preparation indicated the men were in no hurry. The round was then loaded and blasted.

Although there were no eye-witnesses to the accident, the investigation indicated that William, the eldest brother was lighting the fuses with a carbide light and the two younger brothers were either starting out of the mine or were waiting for William a short distance from the face. The carbide light used to spit the round had no flint and presumably was blown out when spitting a fuse. It was assumed that the two younger brothers were then summoned back to the face to help light the remaining fuses, when the first holes fired. All three were presumably killed instantly by the blast.

Short fuses were used in the blast holes which was indicated by several pre-cut fuses (32 inches in length) and one undetonated hole in the face which was primed with a 46-inch long fuse. It was this undetonated fuse that William was going to spit when his light went out.

#### CAUSE OF ACCIDENT

The direct cause of this accident was lighting blast holes in an unsafe manner, by (1) using fuse too short to provide safe evacuation time and (2) lighting fuse with an unreliable means (carbide light), and without a back-up lighter. Contributing to the severity of this accident was having additional persons in the area when performing the unsafe act.

#### RECOMMENDATIONS

Because the mine was closed and blocked from entry by the surviving son following the accident investigation, notices or orders were not issued; however, as a matter of record the following discussions and recommendations are made for future reference at this and or associated mines.

Because the explosives used were purchased in the town of Sweet Home, Oregon, it seems evident that several unsafe practices were followed in the transportation of explosives to the mine site as the pickup truck was apparently used. Reference should be made to the Metal and Nonmetal Mine Health and Safety Standards and Regulations (Part 57.6) published by the Mining Enforcement and Safety Administration for the Federal violations committed in the transportation of explosives.

Safety fuse shall never be cut shorter than 36 inches in length and a minimum of 3 1/3 minutes burning time shall be allowed for the shortest fuse in a 7-hole blast round (Reference: Mandatory Standard 57.6-113).

At least two men shall be present when lighting fuses. (Reference: Mandatory Standard 57.6-114). Compliance with this standard alone may have prevented this accident. However, the returning of the other two brothers to assist only added to the severity of the accident by returning too late.

Fuse shall be ignited with hot-wire lighters, lead spitters, igniter cord, or other such devices designed for this purpose. Carbide lights shall not be used to light fuses. (Reference: Mandatory Standard 57. 6-116). Again, a reliable lighter could have possibly prevented this accident.

The owner, operator, or person in charge of any metal and nonmetal mine shall notify the nearest Mining Enforcement and Safety Administration, Metal and Nonmetal Mine Health and Safety subdistrict office before starting operations, of the approximate or actual date mine operation will commence. The notification shall include the mine name, location, the company name, mailing address, person in charge and whether operations will be continuous or intermittent.

When any mine is closed, the person in charge shall notify the nearest sub-district office and indicate whether the closure is temporary or permanent. The Bellevue Subdistrict office address is:

117 - 107th Avenue N. E.  
Bellevue, Washington 98004  
(Reference Mandatory Standard 57.26-1).

Compliance with part 57.26-1 probably would have prevented this accident as well.

#### ACKNOWLEDGMENT

The cooperation, aid and assistance received from family members, The Linn County Sheriff's Department and the County Medical Examiner was greatly appreciated.

/s/ E. V. Adams

E. V. Adams  
Supervisory Mine Inspector

Approved:

  
K. U. Russell  
Subdistrict Manager

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