

COAL FATALITY
RAVENSDALE, WASHINGTON
NORTHWESTERN IMPROVEMENT COMPANY
RAVENSDALE MINE
NOVEMBER 16, 1915

THE RAVENSDALE EXPLOSION

On November 16 at 1:35 p.m. an explosion in which thirty-one men were killed occurred at the Ravensdale mine, operated by the Northwestern Improvement Company, at Ravensdale, Washington. I was notified of the accident at about 2:30 p.m. while at the Renton mine, and immediately proceeded by automobile to Ravensdale, arriving there at 4:15 p.m.

The Ravensdale mine was opened about twenty years ago. The present company taking over the property some years later. The beds worked in this mine were the No. 3, No. 4, No. 5, and No. 9. The coal is sub-bituminous in character. The mine was opened on the No. 5 bed by two slopes. The coal dips at an angle of from forty-seven degrees at the top of the main slope and flattens to thirty degrees at the bottom. The main slope was used as the hoisting slope. The auxiliary slope, which is 100 feet west of the main slope, was used for taking supplies into the mine. The mine was ventilated by a ten-foot Capell fan which was placed on the return airway on the west side of the auxiliary slope. Both slopes were used as intakes for the air.

At the time of the explosion thirty-four men were in the mine, twenty-eight of whom worked on the third level and six on the second level. On account of a breakdown in the power plant most of the men that worked on the second level were sent home at 11 a.m. on the day of the explosion, only six company men remaining to do repair work. When the explosion occurred, smoke poured from the entrances of both slopes. The fan was not damaged by the explosion and was speeded up to capacity. Superintendent Scott organized a rescue party which entered the mine as soon as possible after the explosion, going down the auxiliary slope. After clearing some obstructions at the first level, the rescue party reached the second level, where four men, Martin Metzner, John Errington, Mike Demoshak and Mike Ferlich, were found in the rock tunnel to No. 9 seam on west side of the slope. All but Ferlich were overcome by the afterdamp. Demoshak and Metzner were revived when they reached the outside, but Errington died on the way out. The other men on this level were found at the entrance to the rock tunnel to No. 4 seam on the east side of the slope, where they had been killed instantly by the force of the explosion.

On my arrival at the mine I joined the rescue party which was then in the mine. The main slope was badly wrecked by the explosion, which made it impassable. The auxiliary slope was badly caved at the second level. A hole was made through this cave and at 5 p.m. a party of miners in charge of Superintendent Scott and State Mine Inspector Bagley reached the third level. This party found the bodies of C. B. Davis, pumpman, and L. DesMartino, cager, about thirty feet east of the main slope. Mine Foreman Kane was next found in the foreman's office about 200 feet farther in on the east side. This party continued to advance on this side until the overcast which conducted the return air across the gangway was reached, or about 400 feet from the main slope. This overcast was

found to have been destroyed and gas was encountered a few feet inside of this point. Superintendent Scott returned to the second level to take charge of the work of clearing the slope so that cars could be taken down to remove the bodies that had been found. The others in the party then explored the west side as far as No. 3 chute. The gangway on this side showed much evidence of the violence of the explosion. Gangway sets were blown out and many falls encountered.

After being satisfied that no one on the third level had survived the explosion, the party returned to the second level, where all efforts were concentrated in clearing the cave on the slope, as it was considered unsafe to allow any work beyond this point until this danger had been removed. This work was temporarily completed by 9 a.m. on the morning of the 17th, and the work of removing bodies from the third level was started.

On that date a rescue party explored the west side and recovered the bodies of three men who were on this side of the mine. The west side was then sealed off temporarily and all efforts were directed in recovering the bodies on the east side. Overcasts and stoppings were found to have been either blown out or damaged, and temporary repairs were made and ventilation established as the work advanced. The rescue men equipped with rescue apparatus investigated conditions ahead of the brattice crews.

On the 18th at 11 a.m. ventilation was established as far as chute No. 37, and on that date the bodies of six men were found on the gangway between No. 37 and No. 43 chutes. The work of clearing the chutes No. 37 and No. 43 was then started, the sixteen bodies remaining in the mine being in this section. This proved to be the most difficult part of the recovery work. The air was carried up No. 37 chute, where two bodies were found on the morning of the 19th. The ventilation was established and the chutes cleared in order, from No. 37 to the inside. On the night of the 19th and the morning of the 20th the twelve bodies were recovered. The task of clearing the last two chutes was a difficult one. The last two bodies were recovered late on the evening of Sunday, November 21.

In the rescue and recovery work the mine officials and other employees of the Ravensdale mine, who were not in the mine at the time of the explosion, did all in their power in the work of rescue. When notified of the explosion, the state mine inspector made a request for the assistance of the trained men of the Pacific Coast Coal Company. A team of trained men from Black Diamond reached Ravensdale shortly after the explosion, followed later by teams from the Coal Creek and Burnett mines of that company, each in charge of a mine foreman. Additional help also responded from the Roslyn and Cle Elum, mines. Offers of assistance were received from all sides, and nothing was spared to expedite the recovery work. Officials from other coal companies in the state came to Ravensdale and gave every assistance possible. It was conclusively shown that the work of organizing and maintaining trained rescue teams at the different mines in the state helped materially in the recovery work.

Conditions on Third Level Where Explosion Originated.

It was agreed by everyone who made an investigation that the explosion originated somewhere in the battery from No. 37 to No. 43 chute on the east side of the third level, No. 5 seam. No. 5 seam ranges from twenty to twenty-five feet in thickness and was the only seam worked on the third level. No mining was being done on the west side on this level at the time of the explosion. Three company men doing repair work were the only ones on that side.

No. 5 seam on the east side was worked on the double entry system, the upper gangway used as the main haulage and intake airway, the lower gangway as the return. The air was conducted to No. 43 chute, up No. 43 chute and across the top crosscuts to No. 37 chute, down No. 37 chute to first crosscut, where it was carried over the gangway through an overcast driven on the top coal to the lower gangway, or return airway.

No. 5 seam was worked on the chute and pillar system, chutes six feet wide being driven on the bottom coal to the required distance. The coal was shot from the solid, and Monobel No. 2 powder was used for blasting. When the chute was up the required distance the pillar was cut through to the inside or outside, as the case might be, and the pillar drawn back by working out the bottom coal first, the caving the top coal and loading it out.

Owing to the trouble from spontaneous combustion when the old workings were not sealed off, a battery of from eight to twelve chutes were worked together. A solid pillar of from eighty to one hundred feet was left in between batteries and the battery sealed off when finished.

Motor haulage was used on the gangway. Those on the gangway used open lights. All on the pitch used Wolf safety lamps or electric lamps. Twelve miners, three timber packers and one chute starter were working in the chutes on the pitch at the time of the explosion. Each shift was in charge of a fireboss whose duty was to have general charge of the work and fire all shots. The shots were fired three times each shift. The day shift shooting time was 9 a.m., 12 m., and 3 p.m.

A careful examination was made of all working places from No. 37 to No. 43 chute by the State Mine Inspector, accompanied by a committee appointed by him to determine, if possible, the cause and origin of the explosion. The committee appointed for this purpose was composed of J. F. Menzies, manager, Carbon Hill Coal Company, Carbonado; E. S. Brooks, general superintendent, Washington Union Coal Company, Tono; Martion J. Flyzik, president, and Ernest Newshum, vice president, District No. 10, United Mine Workers of America. After a careful examination of the mine and hearing the testimony of twenty-six witnesses, who worked in the mine, Mr. Menzies, MR. Flyzik, and Inspector Bagley, of the committee, were called a witnesses by the coroner. It was impossible to definitely give the cause of the explosion. It seemed to be the conclusion of the investigation committee that it originated at the face of the chutes from No. 41 to No. 43, possibly in No. 41 chute. The evidence pointed to No. 41 chute for the following reasons: No work had been done at the face of No. 41 chute since the regular shooting time, which was one and one-half hours before the explosion; one man was working in No. 41 on this day, and it was thought that he was probably moving some gas out of his place, which they sometimes had after shots were fired. This would account for no work being done at the face. In some way this gas was ignited, causing a gas explosion which in turn ignited the dust and carried the explosion throughout the mine. The men in No. 41, No. 42, and No. 43 chutes were badly burned, showing that there was more flame at the face of the above chutes than in the others. All on the pitch outside of No. 41 were not burned except the three timber packers in No. 40, who were found in front of the top crosscut from No. 41.

The testimony also showed that the dusty condition of the battery where the explosion was thought to have originated was a recent condition and that the operating company had installed the water system a short time before the accident. They had sprinkled the chutes where the accident occurred on Sunday, two days before the accident occurred, and were taking other precautions to take care of the dust. The fact that most of the chutes were working three shifts

accounts to some extent for the amount of dust made.

After thirty-three witnesses had been examined the coroner's jury returned the following verdict:

L. Thibaut came to his death by reason of an explosion of firedamp and coal dust which occurred somewhere between chutes No. 37 and No. 43, on the east side of the main slope to No. 3 level. Thirty other miners also lost their lives.

After a thorough investigation of the Ravensdale mine by a tedious and careful examination, we have been unable to determine definitely the original cause or the exact location of the recent disaster. From the condition of the mine as observed by us and the testimony of the surviving miners who were affected by the concussion, the explosion must have been very violent. The regular current of fresh air supplied to those working in the mine was suddenly stopped by the falling rock and coal and timbers in the passages through which the bodies of the entombed miners could be reached by immediate relief.

From the best information obtainable, a sufficiency of fresh air was circulated throughout the sections of the mine where the men were at work at the time immediately preceding the explosion and no laxity on the part of those conducting the operation was shown by the testimony given before us, but aside from diligent inspection and capable management a rigid enforcement of safer and more skillful methods should be exacted of every person employed in this mine.

In a gaseous mine where the dust is dry and "blasting from the solid" is permitted a chamber six feet in width is entirely too narrow. It is hardly possible to drill a hole at the correct angle to assist a charge of powder in making an effective break in the solid body of coal. Extreme caution should be exercised by the "starters" who are obliged to use safety lamps when working near the bottom of the chutes, and we deem it unsafe for an open light to be used on the level by men who lead and move the cars to and from these chutes.

In the pockets of some of the dead miners, who worked at the faces of the chutes where "safety lamps" were used, were found matches and match boxes and a smoking pipe, in direct violation of offenses defined in our state mining laws.

In conclusion, we do recommend that legislation to further safeguard the lives of men working in the coal mines of the State of Washington be enacted to the end that the recurrence of a similar disaster may be minimized, and thus a more hopeful feeling of security against such deplorable accidents find lodgment among all of our people.

Dr. J. Tate Mason, Coroner.

John Sullivan, foreman

John Marlow

Thomas Dobson

James Carson, Jr.

E. F. Lawson

Dennis Driscoll

The conclusion to be derived from this explosion is that more precautions must be taken in dusty mines, those that generate explosive gas. Where sprinkling is used to keep down the dust no half-way measures will do, but all parts of the mine must be thoroughly wet down, especially near the working faces where shots are fired. No mixed lights should be used in any gaseous mine, for when safety lamps and open lights are used in the same mine it breeds carelessness among both miners and mine officials. In all mines on safety lamps mine officials are not doing their full duty when an inspection for matches is not made. The safety of the mine depends not only on the mine officials

for the rigid enforcement of all rules and regulations for safety, but on the miners themselves to observe and demand that all rules and regulations for their safety are complied with.