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present time, employed by the company, we were unable to fix the responsibility for the inaccurate map.

However, as a cautionary measure for the prevention of accidents of this nature in the future, the Legislature in 1947 provided that no working place shall approach nearer than one hundred feet (100') to any inaccessible workings until after the mine inspector, the mining engineer and the mine superintendent shall have examined the situation and granted permission.

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May 9, 1947

Honorable Richard Maize
Secretary of Mines
Harrisburg, Pennsylvania

Dear Sir:

The commission of inspectors appointed by you to investigate the cause of the explosion which occurred in Schooley Shaft, Schooley Colliery of the Knox Coal Company, Exeter, Pennsylvania, on April 10, 1947, in which ten men were killed and seven injured, has completed its work and hereby submit to you their report.

Yours very truly,

Daniel H. Connelly, Chairman
Mine Inspector, Eighth District

Andrew Wilson
Mine Inspector, Seventh District

Thomas M. Beaney
Mine Inspector, Ninth District

John D. Edwards
Mine Inspector, Thirteenth District

EXPLOSIONSCHOOLEY COLLIERY, KNOX COAL COMPANY

Exeter, Pennsylvania

At 7:00 A. M., April 10, 1947, an explosion of gas occurred in the Marcy seam, Schooley Shaft, Knox Coal Company, resulting in the death of ten (10) workmen and the injury of seven (7) others.

The section in which the explosion occurred, and in which seventeen workmen were employed, is ventilated by means of an

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exhaust fan located on the surface. An air measurement taken at the fan revealed an air volume of 136,485 cubic feet per minute.

The ventilating current enters the Schooley Shaft, and then travels through the section in which the explosion occurred. After ventilating the working places, the current flows through abandoned workings in the Marcy seam, thence through an air shaft from the Marcy to the Pittston seam, and finally to the fan shaft leading to the surface.

Crosscuts and other openings requiring stoppings were closed by means of concrete blocks laid in cement. Two doors were in use on the main gangway and a third door was in the course of construction. Board stoppings were used where needed to close the crosscuts between chambers.

The workmen at the time of the explosion were equipped with permissible electric and flame safety lamps. Jackhammers, operated by compressed air, were used for drilling purposes, and permissible explosives were used for blasting.

The shaker chute conveyors were driven by explosion-proof motors, and the switches controlling the power to these motors were of the open-type and located in a neutral zone on the main road between two ventilating doors, which neutral zone is ventilated by fresh air leakage through the doors.

An examination of the record book revealed that gas had not been found in the Marcy seam during a period of five and one-half months immediately preceding the explosion. No record, however, of an examination had been entered for April 10, the day of the explosion. The mine foreman who customarily made the morning examination prior to the entrance of the workmen did not make such an examination on the morning of the accident. He did, however, enter the mine before the explosion occurred, and in the course of his travel passed the point of accumulation and the point of ignition on the main gangway.

The gangway in question was isolated from the abandoned workings which it paralleled, by the erection of concrete block stoppings in all openings. It was in these abandoned workings that the gas first accumulated, and finally percolated through these stoppings to the main gangway, where it was ignited, we believe, by an electric switch, and the flame so caused, in some manner, ignited the explosive mixture in the abandoned workings behind the walls. After the explosion it was found that all of the walls separating the main gangway from the abandoned workings were blown in the direction of the gangway and away from the said abandoned workings.

The electric switch, which it is presumed ignited the gas, controls a small electric hoist located on the main gangway and used for haulage purposes. The hoist and the switch are open-type and were located at a point on the main gangway outside the first ventilating door, which point is practically in the intake air current.

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To determine the source of the gas and the cause of its accumulation, the walls, doors, and brattices were reconstructed in the section of the mine in which the explosion occurred. The section was then ventilated by a fan other than the fan which the coal company declared furnished the ventilation on the morning of the accident. While so ventilated, gas was not detected in any of the live workings or in the abandoned workings. A change was now made to the extent that the affected section depended upon the Schooley Shaft fan for its ventilation. This is the fan, according to the officials, that ventilated the section where the explosion occurred, on the morning of the accident.

The change heretofore described was made at 10:25 P. M. on April 22. After the lapse of about one hour a small percentage of methane was found in the abandoned workings. As time went on, seven hours to be exact, an explosive mixture was found percolating through the crevices in the concrete walls between the main gangway and the adjoining abandoned workings. It was further found that the gas entered the abandoned Marcy seam through crevices in the bottom rock from an underlying seam.

As heretofore described, the return air from the affected section, in order to get to the Schooley Shaft fan, traveled through the abandoned workings in which the gas accumulated, thence through a shaft to the overlying Pittston seam. This shaft, according to statements made by the officials of the Knox Coal Company, was partially blocked with timber and other material. This blockage, they declared, was not sufficient, on the day before the accident and on several days prior thereto, to prevent the passage of a volume of air sufficient to ventilate the affected workings and the abandoned workings connected therewith.

They account for the gas accumulation on the day of the accident, and on several days subsequent thereto, by declaring that during the night preceding the morning of the accident the material which partially blocked the shaft heretofore referred to, moved or settled sufficiently to prevent the flow of sufficient air to ventilate the explosion section and the abandoned workings.

It is our opinion that the mine officials who had knowledge of the conditions in the partly blocked shaft should have exercised greater caution. In fact, ordinary precaution could have prevented this accident. It might also be noted that the person chiefly responsible for the safety of the workmen, and who was killed in the explosion, showed laxness in the performance of his legal duties.

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