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EXPLOSION
at the
LAYMAN-CALLOWAY COAL COMPANY'S MINE,
LAYMAN, HARLAN COUNTY,
KENTUCKY.

Report by C. A. Herbert,
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On January 30, 1922, an explosion occurred at the mine of the Layman-Galloway Coal Company, resulting in the death of six men and the serious injury of two others.

The Layman-Galloway Mine is located in Harlan County, on the Harlan Branch of the L. & N. Railroad, about twenty miles from Pineville, Kentucky, the nearest flag stop being Felder.

The main office of the Company is at Pineville, Kentucky. Mr. Estell A. Smothers is President; Mr. J. J. Watson, Secretary and Treasurer, and Mr. J. A. Stewart, Mine Foreman.

The mine is working what is known as the Mason Seam, which at this point is about 33 inches thick and lies at approximately 100 feet above the railroad.

The coal is a hard bright coal, without distinct cleavage.

The roof is a hard, dark shale, requiring little or no timbering. The bottom is a hard dry fire clay. The mine makes no water, the working places being dry and dusty.

The mine is small, only working a total of thirty-seven men underground, and producing about 200 tons per day. Cars of the lift

and gate type are used, and on account of the low coal and the fact that the roof in the rooms is not brushed, their capacity is only about $1\frac{1}{2}$ tons. The haulage is all done by mules, the miners pushing the cars to and from the entry. The haulage roads are brushed to about $5\frac{1}{2}$ feet in height.

The mine is worked on the double entry, room and pillar method, the room entries being turned to left and right of the main entries. On account of the dip of the coal to the east, the left hand entries are driven at an angle to lessen the grade against the loaded cars.

The lighting is by means of open carbide lamps. No gas has ever been observed in this mine and none was found at the time of the investigation.

The ventilating current is induced by means of a furnace, and at the time of the investigation appeared to be ample; about ten thousand cubic feet of air per minute was being circulated through the mine.

At the time of the investigation the entries were in a fairly moist condition and were reasonably free from coal dust. The writer was informed by the mine foreman that the entries were in much worse condition at the time of the explosion; that he had since cleaned up the entries, and sprinkled them, and had also sprinkled salt along the entries, which appears to assist in holding the moisture.

The coal is all shot from the solid by means of black powder and fuse.

This mine, like the balance of the mines in this field, is operated by non-union labor, and little restriction is placed on the men as to the number of hours they work. On the night of the explosion, eight men including a driver, had gone back to get coal ready and fix up their places for the next day. Two of these men had been hired by the miners working in the main entries to brush and load rock at the face of the entry.

Immediately after the explosion, a rescue crew composed of the mine foreman and other employees, hurried to the mine and found four of the bodies and the two injured men just a short distance in by the drift mouth. These men, including the driver with a car and mule, were on their way out, and had evidently just gotten to the turn of the entry, about 100 feet in by the entrance, when the explosion occurred. The men, as well as the mule, were evidently killed by violence. One man, who was found under the car, was living when found, but died shortly afterwards. The fact that the men were just at the turn and were hurled against the rib no doubt accounted for the number of fatalities at this point.

The other two bodies were found at the entrance to the 2nd right entries. These were the two men that the miners in the main entries had hired to brush rock.

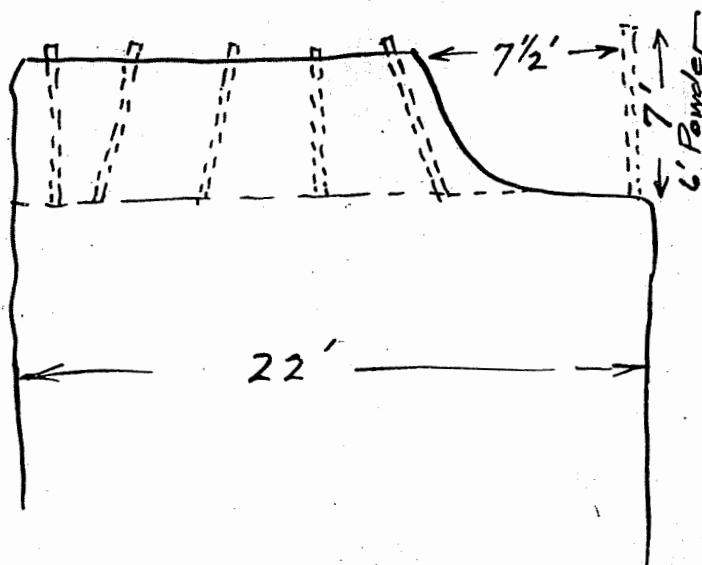
The explosion evidently had its origin at the face of the No. 4 Room off the 2nd left entries. Coked coal dust could be observed along the room entry and in the breakthroughs between the

1st, 2nd and 3rd rooms. The stopping opposite the 2nd left room entry, between the two main entries had been blown out, also the first one in the 3rd entries. The flame and heat evidently traveled along the path, indicated on the accompanying sketch, as evidence of coke could be found as far as the 5th room off the inby 2nd right entry.

The trip door in the breakthrough between the main entries, and leading to the furnace, although rather a flimsy affair, was only partly demolished and blown inby. The two men found at the 2nd right entries had also doubtless been killed by violence, though the exposed portions of their bodies were badly burned.

At the time the writer visited the mine, the rooms off the 2nd left had been working several days, so that all evidence as to the blown out shots said to have caused the explosion had been destroyed. However, he was informed by Mr. J. A. Stewart, the mine foreman, that the two men in the No. 4 Room had just started to work after having been idle for a long period, and were overly anxious to make a good showing for the next day, as they were badly in need of money, and had put in six shots across the face of the 22-foot room, using nearly a keg and a half of black powder. Just how these shots had been placed could not be ascertained, except that the one on the right rib had been drilled directly on the solid parallel to the rib and had done no work at

all. This latter hole had been charged with about 6 feet of powder with practically no stemming. The other five shots had all done effective work, as the coal to the left of the triangular piece in the right hand corner had all been brought down.



CONCLUSIONS AND RECOMMENDATIONS

It would appear that the explosion had its origin in the No. 4 Room off the 2nd left entries, due to a series of badly placed and overloaded shots, and that owing to the dry and dusty condition of the mine, the explosion was propagated by coal dust. It does not appear that gas entered into the propagation in any way. Prior to this explosion, it had been the habit of the miners to use fine coal dust as stemming. Since this time, however, clay for this purpose is being dug on the outside and sent into the mine.

1. Shooting the coal off the solid is a practice that cannot be recommended and should be discontinued. If it is not possible to require the miners to undercut the coal by hand, electric cutting machines should be installed and permissible powder used in place of the black powder at present in use.

2. The roads should be thoroughly cleaned up, and the roof and ribs washed down. This can best be done by the installation of pipe lines up the entries, with hose connections at frequent intervals, so that with a 50-foot length of garden hose, all parts of the entries may be reached. Hose connections should also be put in at the room necks and the rooms kept in a moistened condition as well. The expense of this water line installation would not be prohibitive, and would go a long way towards rendering the mine safe from coal dust explosions.

3. The present practice of furnishing clay stemming is commendable, and should be continued.

4. A closer supervision of the placing and firing of shots should be maintained. If the foreman does not have time for this, a shot inspector should be employed.

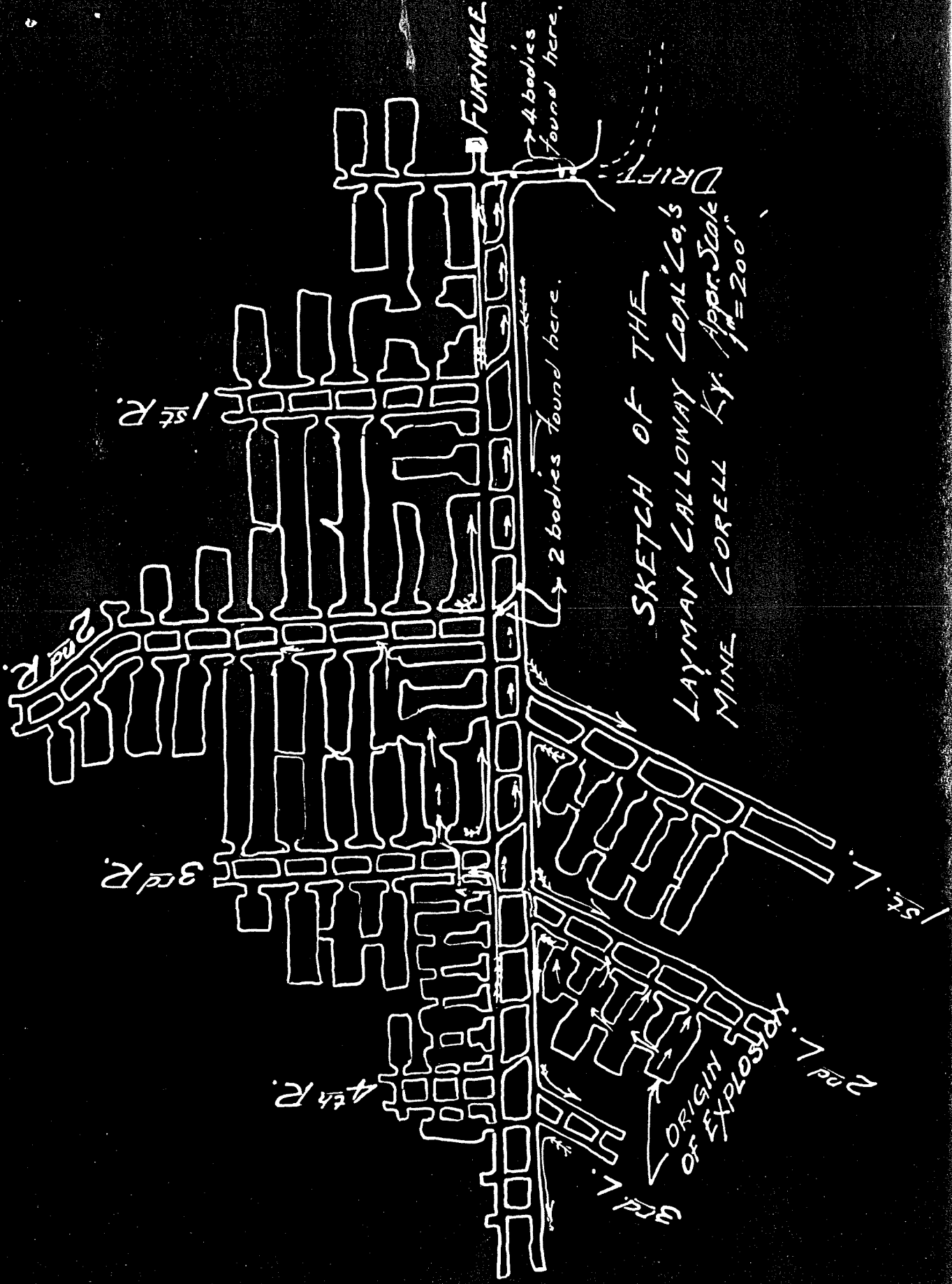
5. The present practice of ventilating the mine by furnace is unsatisfactory and dangerous, and should be discontinued in favor of a power driven fan. There is considerable danger from the furnace as now installed. It was noted that the fire was in

close proximity to the coal on the sides of the entry.

6. A closer check should be kept on the men entering and leaving the mine. The practice of allowing the miners to go back into the mine at night to prepare coal for the next day without proper supervision, is certainly dangerous and should be discontinued.

Respectfully submitted,


B. A. Herbert
District Mining Engineer.



SKETCH OF THE
 LAYMAN CALLOWAY COAL CO.'S
 MINE CORELL KY. Appr. Seal
 1/4" = 200'