

# COAL FATAL

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UNITED STATES  
DEPARTMENT OF COMMERCE  
BUREAU OF MINES  
BY D. HARRINGTON

SUBJECT: Explosion at Dixie Mine, Moffat Coal Company, Moffat Alabama. July 21, 1926.

An explosion occurred at about 3:30 a.m., July 21, 1926, in the Dixie Mine of the Moffat Coal Company at Moffat, Alabama. The night shift of eleven men were ready to leave the mine when the explosion occurred, and nine were killed, one escaped with a few injuries and one escaped uninjured.

The explosion occurred in the upper portion of a steep longwall section of the mine and the accumulation of gas was a result of feeders encountered while cutting the wall and by a probabal interruption of the ventilation; the gas was ignited by an open light. There was only local propagation, due probably to the wet condition of the surrounding region and to the inert dust in gobs behind the walls.

The Bureau of Mines at Birmingham did not receive a report of the explosion until 10:30 a.m. and immediate communication with the mine found that the bodies were being recovered without the use of breathing apparatus. F. V. Meriwether proceeded to the mine, arriving about 1:00 p.m., when the last two bodies were being brought to the surface.

An explosion occurred in this mine November 12, 1923, caused by an ignition of gas from an open light, resulting in the death of two men and the injury of twelve others. (Apparently this company learns but little by experience).

While the mine on a whole is probably not particularly gaseous, considerable gas was being liberated in the longwall working on the night of the explosion. During the early part of the night the cutting machine encountered a heavy feeder of gas which was ignited by a carbide lamp and later extinguished. Later on and further up the pitch another feeder was encountered and ignited, and the flame played up and down the entire 300-ft. face, singeing the hair of one machine man. This inflammation was extinguished with difficulty.

The mine has numerous unsafe practices and conditions including the use of carbide lights, use of non-permissible mining and drilling machines, use of black powder in room and pillar workings, inadequate ventilation, no method used to render coal dust inert. One of the poor ventilating practices in this mine was that an attempt was being made to pull the air down along working faces on a pitch, instead of taking advantage of ascensional ventilation which is much safer and more effective.



UNITED STATES  
DEPARTMENT OF COMMERCE  
BUREAU OF MINES  
WASHINGTON

February 9, 1927.

CONFIDENTIAL MEMORANDUM  
NOT FOR PUBLICATION

To the members of the Safety Service and Mining Research Divisions:

An explosion occurred at about 3:30 A.M., July 21, 1926, in the Dixie Mine of the Moffat Coal Company at Moffat, Alabama. The night shift of eleven men was ready to leave the mine when the explosion occurred, and nine were killed, one escaped with a few injuries and one escaped uninjured.

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While this memorandum is of a confidential nature for the information of Bureau field men, it may be used in connection with Bureau work but should not be published.

*D. Harrington*

D. HARRINGTON.

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3/11/27*



*Mr. Adams*

November 29, 1926 DH/RP

Memorandum: Dixie Mine Explosion, Norris, Bibb County, Alabama,

Moffat Coal Company, July 21, 1926 - Report by F. E. Cash.

The explosion occurred about 3:30 A.M., July 21, 1926 at about the time that the night shift was ready to leave. 11 men were underground, 9 were killed, 1 escaped with a few injuries and 1 escaped wholly uninjured.

The explosion originated in the upper portion of a step longwall experimental section of the mine, the cause being ignition of methane by open light. There was only local propagation, due undoubtedly to the wet condition of the surrounding region and to the inert dust in gobs behind the walls.

The coal thickness is about 42-inch, pitch - 10 to 18 degrees. The roof is hard sandstone, although in places there are 6 to 8 inches of draw slate immediately over the coal. The coal runs fairly high in fixed carbon, around 53 percent, moisture about  $2\frac{1}{2}$  percent and ash about 7 or 8 percent.

The mine works about 200 men underground, producing about 550 tons per day.

Ventilation was of descensional rather than of ascensional nature. Room-pillar mining was done until recently when modified longwall was tried. Coal was undercut by an open type shortwall machine. Cutting was done during the night shift. Along the face is a chain conveyor and coal cuttings, as well as coal, were shoveled into the conveyor. Drilling was done by an electrically driven auger drill. Shooting was done by 1-1/8 x 4 inch Monobel #9 explosive, stemmed with clay and detonated by fuse and #6 detonators. In the room and pillar portions of the mine black powder is used for shooting the room coal and dynamite for roof brushing. The use of fuse, black powder and dynamite are decidedly dangerous, especially in a mine giving off methane.

Haulageways are moist to wet, the longwall faces are watered during the cutting by hose. The cuttings are damp to wet. The main source of dust is from fines from the conveyor and from material thrown into the gob.



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The fan delivers about 50,000 cubic feet of air per minute, which does not seem adequate for a mine which employs 200 men and gives off definite quantities of methane. It is said that from 6,000 to 10,000 cubic feet of air a minute passed the region in which the explosion originated. This does not seem consistent in view of the fact that there very evidently was an accumulation of methane. During the early part of the night shift the cutting machine encountered a heavy feeder of gas which was ignited by carbide lamps and later extinguished. Later on and further up the pitch another feeder was encountered and ignited, and it was said that the flame played up and down the entire 300-foot face, singeing the hair of one machine man. This inflammation was extinguished only with difficulty. The machine man who had encountered these gas feeders had left the mine when the explosion occurred, and there was evidently a pocket of methane which had not been moved by the air or burned out by the previous inflammation. That there was not 6,000 to 10,000 cubic feet of air per minute along the working or longwall faces was indicated in the fact that the rescue parties found a trap door "buttoned open", this door short-circuiting the air away from the working faces.

While the mine is gassy it is not very strongly gassy, since the air samples taken in the main return of 50,000 cubic feet per minute showing .13 percent methane, and undoubtedly the gas accumulation was due to the short-circuiting of the air through the trap door, which had been "buttoned open."

The recommendations as to ascensional ventilation, use of closed lights including permissible flame safety lamps for testing purposes, use of permissible mining and drilling machines and of permissible explosives throughout the mine with electric shooting, and the recommendations for rock dusting of the mine with systematic sampling and analyzing of rock dusted areas and that the cars should be of tight construction, are all along the line of up-to-date safe operation of mines.

*D. Harrington*  
D. Harrington

cc - Mr. Adams ✓  
cc - Mr. Parker, Pittsburgh  
cc - Mr. Cash, Birmingham  
cc - Safety Service  
cc - Mining Research  
cc - W. O. Files  
cc - D. Harrington