

ON THIS DAY IN WEST VIRGINIA HISTORY JANUARY 8



On January 8, 1943, a fire in the Pursglove No. 15 coal mine on Scott's Run, Monongalia County, killed 13. Six months earlier, an explosion at the No. 2 mine, pictured above, killed twenty miners.

CSO: SS.8.6, SS.8.9, SS.8.11, SS.8.25, S.6-8. L.7

Investigate the Document: (Coal Mine Fire and Disaster Report, Ar1526s)

1. Approximately, how many men worked in the No. 15 Mine of the Pursglove Coal Mining Company?
2. According to the report, what was the cause of the fire?
3. The disaster report states that *what* was the most pertinent lesson to be learned from the information available about the fire?
4. Was the foreman on-duty familiar with the ventilation system and travel routes? How long had he been employed?
5. The report states that the fire could have been extinguished in its early stage if _____ was readily available?
6. In the report's summary, the investigator believes that the fire was "merely a repetition of those in evidence at previous fires." What procedures would YOU implement to ensure mine safety and to reduce the chances of a fire?

Think Critically: How has coal mining changed since the early-1940s? Has there been an increase in safety procedures? How has mechanization affected the coal industry? What is the importance of the coal industry in West Virginia? Is coal a renewable energy source or fossil fuel?

Bonus: Explain how coal is formed, mined, processed, transported, and burned through the use of a flowchart.

LESSONS LEARNED FROM THE COAL MINING FIRE
PURSGLOVE NO. 15 MINE, PURSGLOVE COAL MINING COMPANY
PURSGLOVE, W. VA. JANUARY 8, 1943.

The No. 15 Mine of the Pursglove Coal Mining Company is at Pursglove in the Scotts River District, Monongalia County, W. Va.

The Mine is opened in the Pittsburgh coal bed, the coal averages 84 inches in thickness, is undulating, and dips gradually to the Northwest. The coal is bituminous, has a high volatile ratio and is readily ignitable.

The present operation consists of two Mines (Nos. 1 and 5) that were joined together in 1939. The mine is opened by 4 shafts, 2 slopes, 2 drifts, and a number of abandoned openings. A block system of Mining is used, and about 14 inches of head coal is retained to support the drawslate. Pillars are recovered, and the present Mining is about $3\frac{1}{2}$ miles from the dumping portal.

The mine is completely mechanized, and the coal is loaded directly into mine cars with mobile loading machines. Because the two sides of the mine were once operated as separate units, the electrical equipment in one portion operates on 250 volts direct current, the other on 550 volts direct current.

The Mine used 8 loading machines, worked three shifts, employed 400 men, and produced about 2,500 tons of coal per day. It is rated gassy by the West Virginia Department of Mines, and liberated about $1\frac{1}{2}$ million cubic feet of Methane in 24 hours. It is operated with electric cap lamps, permissible explosives, and permissible-type cutting and loading equipment.

Ventilation in the mine was induced by two fans. The one fan, circulating about 137,000 cubic feet of air per minute, was used to ventilate the workings on the No. 5 side (the affected area), the other fan, circulating about 100,000 cubic feet of air per minute, ventilated the No. 1 side of the mine. The air intake openings were common to both fans, but the quantity of air was split before reaching the working sections, with a regulated portion going to each fan. A condition that permitted many of the men involved to escape from the mine, and aided materially in the recovery operations.

The fire occurred on the third shift around 2:55 a.m. The evidence collected, before the fire was sealed, indicates that the fire resulted from an electrical short circuit of the 550 volts direct-current trolley wire transmission system. The ignition occurred on the No. 5 side main haulage way, at a point about midway between the working sections and the dumping point. A locomotive, enroute to the main bottom with a trip of 23 loaded cars, is believed to have been involved in the ignition.

At the time the fire occurred, 78 men were in the mine, 65 escaped, 12 were entrapped and died from exposure to the fumes, and one died in an unsuccessful attempt to rescue those entrapped.

Although there are many lessons to be learned from a mine fire, the ones given are considered the most pertinent from the information available.

1- Each foreman should be familiar with the ventilating system of the mine.

The foreman in the section, where the majority of those who died had been working, had been employed about three weeks. Had he been familiar with the ventilation system and travel routes, other than the main haulageway to the outside, he and his men could have reached a safe place, instead of becoming confused and walking directly toward the fire in the fumes and smoke.

2- That when an emergency procedure, similar to fire drills, has not been established and perfected by practice drills, the confusion, during an emergency, may have very serious results, although many avenues of escape may be available.

Confusion among the entrapped men was evidenced by their dividing into two groups after traveling together about 3,000 feet. The foreman and two men were within 200 feet of reaching a split of fresh air when they perished. The remainder of the group continued to follow the haulage entry walking in the smoke directly toward the fire. Confusion, due to the lack of a definite course of emergency procedure, is further evidenced by failure of the foreman to short circuit the air and out the power off the working sections immediately upon the detection of smoke in the air current. Also, the failure of a messenger to attempt to reach a section, after being sent there to bring out the men, indicates confusion or despair, because he, in company with another man, made the trip sometime later after the crew of men had left the section.

3- This disaster again indicates the necessity for periodic instructions to keep men, who carry self-rescuers, familiar with their use and care, and the need for frequently testing the canisters for leaks.

The majority of the men who perished from the fumes of this fire might have been able to attain a place of refuge in fresh air with the aid of self-rescuers, in good condition and properly used. At least their chances to do so would have been greatly improved. An unopened self-rescuer was found on the body of one man who had traveled a considerable distance in fumes and smoke. Self-rescuers were used by some men in the first attempts to extinguish the mine fire. During the recovery operations, many of the workmen were seeking information regarding the use and care of self-rescuers, the effect of leaking canisters, and the method of testing to insure their keeping in a safe condition.

4- An adequate fire fighting organization should be trained and maintained at the mine.

The first attempts to extinguish the fire during the incipient stage were rather feeble, and were made by two or four men. A concerted effort to approach the fire and put it out was not made for some hours after it had started, because the crews had to be assembled, organized, and directed in the procedure to be followed in complete detail. Respiratory protective equipment for those engaged in fighting the fire was almost completely lacking.

5- Fire-fighting equipment and facilities must be readily available, and accessible, if incipient fires are to be extinguished promptly, or the danger of their spreading is to be minimized.

The opinion of many persons who helped fight the fire was, that it could have been readily extinguished in the incipient stage, by direct attack with suitable and adequate fire-fighting equipment. This opinion is supported by the fact that during one period of the attack, members of the crew were able to place bags of rock-dust on the fire. A delay in obtaining the mine rock dusting machine permitted the fire to gain in intensity, and a later attack with water proved futile.

6- Ample material for fighting fires should be readily available at all times.

The scarcity of brattice cloth, lumber, saws, hammers, nails, etc. underground was very noticeable for some hours after the fire fighting had commenced, and resulted in slowing down the work considerably.

7- Electrical potential of different values can be hazardous and may result in confusion, when used in different parts of the same mine.

The sections in the affected area, and in some other parts of the mine, continued to operate for quite sometime after the electrical failure, accompanying the fire, had caused a power failure on one of the circuits. The men at the face were oblivious of trouble, until they were advised by messenger or warned by the approaching smoke, because their machines were operated on another power circuit of lower potential.

Prior to the time of the fire locomotives were being operated on a potential lower than that for which they were designed. If, during the confusion of the emergency, an attempt had been made (and it could easily have been made) to reverse this procedure, the results could have been serious.

8- A ventilation map should be provided indicating the coursing of the air, the location of overcasts, stoppings, doors, and regulators. These should be kept up to date and available for guidance, in case of emergency.

During the recovery work, many delays occurred, and a considerable amount of futile work was done, before accurate information was obtained on the coursing of the air. Also, when it became necessary to change the coursing of the air, considerable difficulty was encountered because stoppings, doors, and regulators had been abandoned intact and forgotten.

9- When an accident occurs, such as a mine fire, that could involve the safety of any or all under-ground employees, all the employees should be immediately notified of the danger and directed to a safe place of refuge.

From statements made by employees, and other evidence, it is obvious that some of the officials had been aware of the fire for sometime prior to the dispatching a messenger to the different sections, to advise them of the danger and the course of travel to be followed to a place of safety. This delay may have been the cause of the failure of the majority of those who died from reaching a place of safety.

The lessons to be learned from this mine fire are in some cases merely a repetition of those in evidence at previous fires. Moreover, I believe you will agree that, unless more people in the coal industry accept these lessons at face value and become "fire-hazard-conscious", it is merely a matter of time until another disastrous fire will take its place in the record.

Paper prepared by
Peter McLindon
Inspector at Large
W. Va. Dept. of Mines