

# M/NM FATAL

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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF MINES  
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SUBJECT: Premature explosion of dynamite, Funkhouser Company Quarry, Delta, PA., November 30, 1936; Seven fatalities.

This explosion occurred at the mouth of an underground slate quarry and while the employees were capping fuses preparatory to loading the round which had been drilled in the face. The explosion was of 200 pounds of Gelamite No. 2 and killed the quarry superintendent, four laborers, and two employees of a local garage.

The quarry is about 1 mile east of the town of Delta, York County, Pa., a short distance from the Pennsylvania-Maryland line. In 1935 this quarry produced 30,000 tons of granular slate, used as a surfacer for fabricated roofing, paint filler, etc. The quarry and plant employed about 90 men, of whom 35 worked in the quarry and mine.

On the day of the accident the quarry superintendent received four 50-pound cases of Hercules Gelamite No. 2 from the distributing magazine, together with 25 Hercules No. 6 blasting caps and a roll of fuse. The explosives were piled near the mouth of the tunnel, but were not opened.

At the time of the accident the five employees were sitting or standing in the vicinity of the explosives, capping the fuse preparatory to loading the round. Two garage employees, who were killed, had come to the mine that morning to get an automobile belonging to one of the men to take it to the garage to be painted. At the time of the accident these two men were sitting or standing with five employees, apparently discussing the job of painting this car. An open fire in a salamander was burning approximately 10 feet from the four cases of explosives and the seven men. Open carbide lamps are used by the employees, and parts of two lamps were found in the debris after the explosion. It is not known definitely whether or not these two lamps were being worn at the time of the explosion.

Smoking is permitted anywhere on the job, but the superintendent says it is not customary for their employees to smoke while handling explosives. It is known however, that these men or the visitors were not smoking at the time of the accident. All of the bodies of the victims were badly mutilated, and all but the quarry superintendent died immediately. He lived about one hour but was conscious during this time.

Gelamite No. 2 is a special type of ammonia gelatin, in which

it is believed that considerable quantities of ammonium nitrate are used. It may be substituted for instead of 30, 40, or 50 percent gelatin dynamite, which means that it is very strong. The high percentage of ammonium nitrate should make it, among dynamites, rather insensitive. Mr. R. D. Currie, who investigated this accident, recommended:

1. That electric blasting caps and delay electric blasting caps be used exclusively in the underground work in this quarry.

2. That the use of fuse and "caps" be discontinued.

3. That the electric firing line be equipped with a safety switch to be locked out while men are engaged in loading or preparing the round.

4. That a special explosives car or box be constructed for handling the explosive from the time it leaves the distributing magazine until it is ready to be loaded in the holes.

5. That smoking be prohibited while handling explosives.

6. That carbide or any other open lamps be removed a considerable distance while handling explosives.

In reviewing this accident to the need for delineating "danger zones" during the preparation for, charging, connecting up, and firing blasts, and conducting these operations with the fewest number of employees and prohibiting others within this "danger zone"; and also to suggest that the capping of fuses and the making of primers should not be done near <sup>the</sup> explosive which is to be used in the main charge. Very serious quarry explosives accidents occur far too frequently; evidently explosives practice at quarries is anything but well safeguarded.