

**M/NM FATAL**

REPORT OF A FIRE AT MAGMA MINE, MAGMA COPPER CO.  
SUPERIOR, ARIZONA  
NOVEMBER 24, 1927 - 7 KILLED

A fire in the No. 2 shaft caused the death of 7 men. There were 49 in the mine at the time of the fire. The mine was developed by 5 shafts, of which the No. 2 was 2,700 feet in depth and Nos. 3 and 5 were 2,550 feet. Shafts 2, 3, and 5 are connected on the 2,550-foot and other levels. The No. 2 shaft had three compartments, two for hoisting and one used as a manway; it also contained electric power and light lines.

Ventilation of the Magma mine at the time of the fire was directed by three surface and three underground fans and various small blowers. A fan that ordinarily exhausted about 95,000 cubic feet per minute from No. 4 shaft had been shut down a few minutes before the fire. Another exhaust fan at No. 1 shaft induced ventilation in the upper levels of the mine. Shafts 2, 3, and 5 were intakes.

About 3:30 a.m. the fire in No. 2 shaft was discovered by the shift boss, who was investigating the continued steady ringing of the electric bells in both hoisting compartments of the shaft. He found smoke at the 1,200-foot level and, by signaling with the pull bell, was returned to the 500 level. The shift boss carried the cage tender, who had been overcome by gas, through the ventilation doors on the 500 level and reported the fire. Shortly afterward, a cage with one man on it was lowered; he died, presumably from burns and suffocation, and the hoisting cable was burned off. The men in the mine smelled smoke, and most of them proceeded to No. 3 shaft, where they were quickly hoisted. Some men came to the 2,200 station and saw the fire roaring up the shaft, but no smoke was coming out into the station. They were unable to attach a hose to the fire connection, because it was at the shaft and in the fire zone.

The fire in the No. 2 shaft was controlled and eventually extinguished by streams of water turned down the shaft from two upper levels.

The No. 2 shaft had been gunited and concreted in part, but from the 1,600 level to the bottom it was timbered without fire protection, except at stations, which were gunited to the 2,000 level. Guniting had been discontinued, because it was thought to promote and conceal timber decay. Gunited station timbering was ignited during the shaft conflagration and continued to burn for days within the concrete shell after the main fire had been extinguished. It was determined that the gunite definitely acted as a fire retardant. It appeared that, even when the fire burned the gunited timbered regions, the process of burning was retarded to such an extent that there was a minimum of caving as compared with the large amount in the ungunited timbered regions.

The fire evidently originated at or near the shaft at the 2,250 station, which was dry and timbered; the shaft timber also was dry. Oily waste at the car-repair station near the shaft ignited by a carbide lamp or a cigarette butt was considered as the probable origin of the fire. Other possible origins of the fire were a transformer, a motor-driven fan, and light and power wiring, all at the 2,250 station.

Three days after the fire in No. 2 shaft started, and when it was virtually under control, NO. 1 shaft caught fire; however, there was no possibility of fire being transmitted from the No. 2 shaft to the No. 1 shaft. The second fire apparently started from embers dropping down No. 1 shaft from a surface fire built near the shaft by a watchman. It was possible to turn water into the shaft from a surface tank and from the fifth level, so that the second fire was controlled in a few hours.