## Forensic Files



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## **MGM Grand Hotel Fire Disaster**

Tragedy struck on the morning of November 21, 1980, when a fire engulfed the world's largest gambling hall in smoke and flames. 85 people died and 679 were injured as a result of a fire at the MGM Grand Hotel in Las Vegas, Nevada. This was the second largest loss of life in a hotel fire in United States history.

The fire at the MGM Grand Hotel started from an improperly grounded electrical wire in the hotel deli. The fire smoldered for hours before igniting, once ignited it quickly traveled into the ceiling and into the giant air return system above the casino. A huge ball of fire raged from the deli restaurant, whooshing along the combustible casino ceiling, consuming everything in its way.

The fire incapacitated the alarm system, preventing people in the tower from getting a timely warning. The fire zone enclosures were inadequate, or burned, allowing thick black smoke to enter the hotel air ducts, elevator shafts, and escape stairwells in the 21-story guest tower. The HVAC system provided fresh air from the outside instead of depriving the fire of oxygen. Only a small fraction of the hotel had been fitted with a sprinkler system, which was not legally required for buildings constructed before 1979. The building egress system proved to be the deadliest factor.... the only guest exit paths were from rooms down stairwells to the street. Once guests entered the stairwells, self-locking doors trapped them in smoke-filled stairwells, preventing them from returning to the hallways. The thick black smoke caused panic and was the major cause of death in this fire. Within 6 minutes of the time of discovery, the total casino area was involved in fire, at a burning rate of approximately 15 to 19 feet per second.

As a result of the MGM Grand Hotel Fire, fire codes were revised nationwide and Nevada enacted the toughest fire sprinkler laws in the world.

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