

Blasting Safety

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Improving Processes. Instilling Expertise.



Explosives and Blasting Safety

- **Current Events to keep your Safety focus sharp.**
- **Other issues that should not be overlooked.**
- **Resources for Explosives and Blasting Safety Information.**

Explosives Truck Incident - Mexico

Torreon, Mexico - A tractor-trailer carrying **25 tons of ANFO** collided head on with a pick-up truck that was attempting to pass a vehicle in the oncoming lane. The accident caused the fuel tank of the tractor-trailer to rupture and ignite the fuel. A large crowd including drivers of cars blocked by the accident, police, fire and rescue personnel as well as residents of the nearby town gathered. The crew of the tractor-trailer attempted to move the crowd away from the vehicle but were unable to control them. Some 30 to 45 minutes after the tractor-trailer caught fire, the ANFO exploded. Spectators and responders were too close to the burning vehicles when the ANFO exploded. **3 passengers of the pick-up truck died in the collision. 28 people were killed and more than 150 injured some very seriously.** More than 50 vehicles and numerous dwellings and other structures nearby were damaged in the explosion. The blast left a 15m-wide crater in the road.

The event highlights: (a) The outcome of fire in a vehicle carrying explosives is unpredictable and has the potential to be catastrophic; (b) Emergency response actions of all role players and their coordination in a crisis are critical.



Explosives Truck Incident – New York

Saugerties, NY – A truck carrying 10,000 pounds of explosives, blasting caps and blast booster agents hit a guardrail on the Thruway, crossed back over the southbound lanes and rolled down an embankment on the western edge of the Saugerties exit ramp. State troopers set up a 300-yard perimeter and closed the Thruway in both directions. Routes 212 and 32 were also closed, and nearby homes on Saugerties Manor Road were evacuated until representatives from the Explosives Transportation Company, bomb disposal and hazardous materials units could assess the damage. Investigators found that the highly explosive materials in the shipment had not been damaged in the crash, and the shipping company was able to remove the explosives from the site. The materials were bound for a quarry in New Jersey, and all shipping permits were in order, police said. The remaining materials were cleaned up without incident by state Department of Environmental Conservation Spill Response teams. The Thruway was closed for 5 hours.



Electronic Detonator Incident - Indiana

Indiana - Unexpected detonation of 7 blast holes occurred on a loaded blast pattern. The incident occurred at night when no activities were being carried out on the blast pattern or in the immediate area. Thunderstorms moved through the area overnight and initial investigation indicated that a drill on the blast pattern was struck by lightning which had resulted in the unexpected detonations. The collars of the 7 holes that detonated were between 10 feet to 30 feet from the tracks of the drill and were charged with emulsion blend, cast boosters and electronic detonators. No injuries resulted from this incident, however the drill sustained damage when the holes detonated.



This incident highlights the importance of obeying all the MSHA regulations regarding drilling in the proximity of loaded holes and clearing a blast area on the approach of lightning

Explosive Magazine Incident - California

Mojave, CA - An 8' x 8' x 40' Type II explosives storage magazine located at the Mojave, California Airport, detonated. Witnesses in the immediate area had observed smoke and flames coming from the magazine for several minutes before the detonation occurred. Security cameras at the Mojave airport recorded the incident and confirmed that the fire preceded the explosion. The magazine contained a variety of 1.1d explosives with a combined weight of 1,498 pounds. The detonation did destroy the magazine and tore the roof from another 8'x16'x40' magazine located 20 feet away. The second magazine caught on fire and the force of the blast drove this magazine into a third magazine of the same size. Magazine #2 contained 1,500 pounds 1.1d materials which caught fire and burned for several hours. The fire in the second magazine generated enough heat to ignite a third magazine containing 10,000 pounds of nitroglycerin based explosives, all of which burned without detonation. There were no injuries. Damage included the three magazines, the contents and an bulk explosives truck that was parked nearby. Collateral damage included holes from shrapnel in other storage tankers and silos.



Site was considered a crime scene and an arson investigation was undertaken, headed by the FBI. 38 agents from the FBI, 10 from the BATF and 6 officers from the Kern County Arson and Bomb squad were involved.

Flyrock Incident – New York

Termed by many as the Blasting Industry's worst Nightmare!

Albany, New York - A quarry blast sent an 80-pound rock crashing into a chartered bus carrying 52 band and choral students from a Connecticut high school. Three (3) people were injured in the accident, which occurred on the New York Thruway, about 25 miles west of Albany. Two (2) girls on the bus, which was headed westbound to a Toronto music contest, were injured. They were taken to the hospital for minor injuries and released the same day. A Utica man driving on the eastbound side of the Thruway also sustained minor injuries from flying rock.

New York State Police, the New York State Department of Environmental Conservation and the Mine Safety and Health Administration worked together to figure out what happened at the limestone quarry, located in the town of Florida, to cause the incident. Blasting at the quarry was suspended until an investigation of the accident was completed.

Radio Frequency & Electrical Hazards

- **Recent technology developments and increasing popularity in personal communication devices, personal digital assistant devices, portable GPS and portable computers increase the probability of RF hazards entering the blast site.**
 - ✓ **Be aware that such devices can not only be carried-in by personnel but also carried-in or incorporated-in transient vehicles.**
 - ✓ **Whether electric or electronic initiation system RF hazards still must be respected.**
 - Current MSHA language does not differentiate between electric and electronic detonators.
- **Portable devices also can bring sources of electrical current to the blast site. (batteries, charging ports etc.)**

Irregardless of the type of initiation system used, because cell phones distract personnel from their job task, it is best practice to keep them off the blast site!

Homeland Security Preparedness

- **The IME recommends that all manufacturers, distributors and users consider implementation of enhanced security measures based on the varying levels of security threat declared by the Department of Homeland Security (DHS) using its Advisory System.**
- **Quarry operations should develop action plans with enhanced security measures to be enacted in the event of increased threats.**
 - ✓ **DHS Threat Level “Orange” or ‘High” and above.**
- **Recommendations for both general security and enhanced security when security risks have temporarily increased can be found in the IME Safety Library Publication No. 27 “Security in Manufacturing, Transportation, Storage and Use of Commercial Explosives.”**
 - ✓ **Appendix A of SLP-27 presents a template for development of a security plan.**

Availability of Safety Information

- Useful internet websites to visit for explosives and blasting safety information
 - ✓ www.msha.gov
 - ✓ www.atf.treas.gov
 - ✓ www.ime.org
 - ✓ www.isee.org

What questions do you have?



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