

The Roseville 6,000 Bombs

What It Means to You

During the Vietnam War, railcars at Roseville, Calif., loaded with bombs exploded. After this explosion, new laws were enacted to prevent another disaster like this. Training in handling bombs was increased. Make sure your training is up-to-date, and that ammo handlers follow ORM procedures.

Without warning, in the morning of April 28, 1973, 18 boxcars loaded with bombs began detonating in the Southern Pacific Railroad yard at Roseville, Calif., about 18 miles east of Sacramento. The yard at Roseville was a classifying yard used to make up trains carrying ammunition.

More than 6,000 Mk-81 bombs loaded with tritonal were involved in the explosion. Their destination was the Naval Weapons Station, Concord, Calif. for further shipment overseas to Southeast Asia.

The train arrived at the Roseville Yard entrance at 0605 and was staged in the westward department yard by 0630. Since the train was too long for the yard, the forward cars (which are the ones that exploded) were placed on a track well separated from the remaining three cars, which were loaded with more than 1,000 bombs. These three cars were saved with only minor damage. The bombs were securely blocked and braced and in perfect condition.

At about 0740, two people saw smoke rising in the vicinity of the ammunition cars. One witness said

the smoke was black at first, then turned white, followed by flames rising from the end of a boxcar. Immediately after seeing the flames, the witness heard a low-order detonation, followed shortly by a massive high-order detonation at 0803.

Major explosions continued from that time to about 1030, with smaller explosions continuing until 1605 the following day.

Approximately 350 people were injured—some seriously by flying glass. About 5,500 buildings were damaged in varying degrees. Heavy damage to buildings and residences occurred as far away as 6,800 feet from the center of the explosions. Even buildings as far away as three miles had slight damage. One hundred sixty-nine freight cars were destroyed. A locomotive and 98 others were damaged.

Although the Roseville disaster was spectacular and caused millions of dollars of damage, no one was killed. This was remarkable, since people have been killed in less spectacular mishaps involving transporting explosives.

We can't even say what caused the Roseville explosion, since most of the evidence was destroyed.

As a direct result of the Roseville explosion, spark shields above railcar wheels and non-sparking brake shoes were required. In 1974, Congress passed the Transportation Safety Act, which brought together numerous regulations by various agencies into one publication. Also, the law placed responsibility for shipping hazardous materials on everyone, be it the shipper, carrier or receiver.

Another result was the increase in better and more effective training to implement the provisions of these new regulations. Rail, truck and air carriers conducted courses and seminars, primarily to train

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their own employees. The trade associations, such as the American Trucking Association and Manufacturers Chemical Association, instituted training courses for all people involved in the movement of hazardous materials. These courses are still on-going.

The Department of Defense also has excellent courses in the area of moving explosives. Here are available courses and information about them:

- Naval Motor Vehicle and Railcar Inspection Course. Refer to Appendix D of the NAVSEA OP5 Series. This course teaches newly assigned inspection personnel the up-to-date requirements, techniques and procedures for inspecting motor vehicles and railcars for ammunition, explosives and other related hazardous materials. It instructs students in identifying Department of Transportation (DOT) hazardous materials, including marking, labeling and requirements for placards, and teaches DOT requirements on loading and unloading, including compatibility. It includes hands-on teaching of inspection procedures for DOT, DoD, and Navy transport equipment. The course also teaches how to use DD Form 626, *Motor Vehicle Inspection (Transporting Hazardous Material)*, and NAVSEA Form 8023/3, *Railcar Inspection Checklist*, which graduates are authorized to sign. Blocking and bracing procedures, Navy transportation safety

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requirements, and security of sensitive conventional arms, ammunition and explosives are also covered. The requirements for Navy ammunition and explosives shipments are emphasized. This course must be taken every two years to maintain certification.

- Material Handling Equipment (MHE) Operator Course. Refer to Appendix D of the NAVSEA OP5 Series. This training course establishes the minimum requirements that Department of Navy personnel must successfully meet before they are issued a

license to operate powered, industrial MHE to handle ammunition and explosives.

- Explosive Safety and Environmental Risk Management. Gives an overview of their explosives safety responsibilities to Navy commanding officers and officers-in-charge (COs and OinCs); executive officers; Marine Corps supply battalion commanders; COS/G-4/G-4-A; FSSG

and MCB; Logistics Directors for MCASs; station COs/OinCs and/or senior civilians.

After reviewing a film about the Roseville explosion, it is obvious that people at that time were not considering the risk of transporting bombs across mountains and through populated towns. If they had used risk-management procedures, they would have identified certain risks that, if reduced, would have prevented this explosion. ■