

# Work Zone Safety - A New Solution For A Serious Problem

*One work zone safety situation that has troubled highway agencies for years involves a disproportionate number of accidents occurring during slow-moving winter maintenance activities like salt spreading. Through research being conducted by the Strategic Highway Research Program (SHRP), an innovative product is now available to address this concern:*

## *The Salt Spreader Truck-Mounted Attenuator (TMA)*

The newly available Salt Spreader TMAs solve several problems simultaneously. Damage caused by rear-end collisions to salt trucks will be lessened considerably and dramatic savings in equipment and labor can be achieved.

### **Improved Safety:**

Winter-related accidents account for the largest number of accidents in the maintenance work zone. These accidents primarily involve rear-end collisions with slow-moving, salt-spreading and snow-removal trucks. On-road moving activities represent 35% of maintenance work zone accidents, but only 14% of the maintenance hours are spent on these activities. This illustrates that there is a disproportionately high number of serious accidents related to slow-moving maintenance activities. A new TMA Interface Structure, which allows increased use of TMAs during salt-spreading operations, can greatly reduce injuries and damage caused during such collisions.

### **Reduced Costs:**

The new TMAs also have a big impact on costs. Until now a separate "shadow vehicle" frequently had to be employed to carry the TMA. The new TMA permits the use of both a TMA and a salt spreader on the rear of the same truck. The support structure is a steel frame serving as an adapter between a salt truck with a center discharge-type spreader and commercially available TMAs. All TMA support and hydraulic members are placed on either side of a center opening through which the salt spreader/spinner passes. When not in use, the TMA may be tilted up to a vertical position. The

90 degree tilt-up capability makes it more maneuverable around yards and loading facilities. As the TMA interface structure is adaptable to several different TMAs, existing TMAs owned by a highway department can be used, avoiding an investment in additional equipment.

The TMA Interface Structure has undergone rigorous testing during development. Tests were carried out following the guidelines set forth in NCHRP Report No. 230, "Recommended Procedures for the Safety Performance Evaluation of Highway Appurtenances." The "worst case scenario" test consisted of crashing a 4500-pound vehicle into the TMA and support structure at 45 mph at an angle of 15 degrees. In addition, extensive vibrations tests were done on the support structure at a frequency of 5-8 hertz and an amplitude of 0.6 inches. The TMA Interface Structure passed all tests and is now ready for application.

Informed maintenance managers recognize safety devices in terms of potential savings rather than just costs. The injuries prevented and the lives of maintenance workers and the motoring public saved by

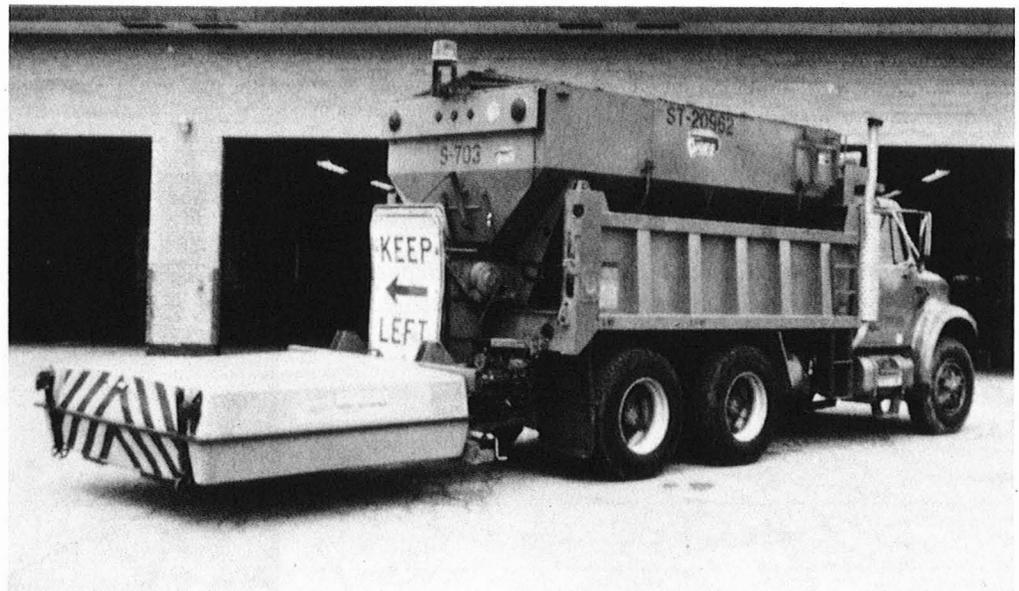
using TMAs provides strong justification for the product. The savings in equipment and manpower resulting from eliminating the shadow vehicle is also clear. There is no doubt that the cost of this equipment is minimal compared to the savings it provides!

The Salt Spreader TMA is now commercially available. Five units have been field tested in the states of Illinois, New York, and Missouri.

For more information call the New Hampshire Technology transfer Center at 1-800-423-0060 or write or phone SHRP:

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