

Research Results



Snow and Ice Accumulation on Vehicles

The Problem

During the winter months in regions with significant snowfall, snow and ice accumulates on the tops of vehicles, which can then dislodge during travel. These chunks of snow and ice may strike other vehicles, creating a safety issue that results in property damage or injury to other motorists.

Research Goal

The research objectives included quantifying the scope of the problem, identifying potential solutions and developing a recommended action plan for highway safety stakeholders.

Methodology

ATRI conducted a thorough scan of existing literature, products and regulatory actions relating to snow and ice safety issues, and removal of snow and ice from vehicles. Stakeholder interview and surveys were also conducted to better understand the technical and institutional challenges, and to identify potential solution sets. Input from the following groups was solicited:

- Motor carriers and industry-related groups;
- Insurers and equipment manufacturers;
- Law enforcement and safety advocacy groups.

Additionally, ATRI obtained additional trucking industry input through an online survey of motor carriers and from truck drivers through XM Radio's Dave Nemo Show.

Findings

The comprehensive review and synthesis of available research and information yielded little to no data on the scope of snow and ice accumulation on vehicles, making ATRI's study the first ever to address the issue in a comprehensive approach. ATRI's research did identify and develop a compendium of currently available snow removal devices, which includes utilization levels and advantages and disadvantages of each.

The research findings discretely document the myriad safety, financial, technical and institutional challenges associated with effectively addressing or mitigating the

safety concerns associated with snow and ice falling from vehicles. In particular, challenges for the trucking industry include the worker hazards associated with clearing snow and ice from the tops of trailers, the limited availability and efficacy of snow removal devices and the lack of available vehicle-based solutions.

Action Plan

To offer a comprehensive set of solutions, a list of actions for the short-, mid- and long-term are recommended in the research.

Short-term actions include a public outreach and education campaign targeting operators of all vehicle types. This campaign should include groups such as the American Trucking Associations, American Automobile Association, National Industrial Transportation League, Owner-Operator Independent Drivers Association, National Association of Truck Stop Operators, and the Commercial Vehicle Safety Alliance, along with other highway safety stakeholders. In addition to an outreach program, it is recommended that a feasibility study be conducted to better assess the functionality and cost-effectiveness of snow removal devices.

A mid-term action is to further explore the feasibility of locating snow removal devices at public weigh stations and ports of entry. Insurance industry efforts to track the frequency of claims due to falling snow and ice may provide the needed data to justify the expenditure of public funds to build and maintain these devices.

The recommended long-term action plan involves investigation of potential vehicle-based solutions which would prevent or impede snow and ice accumulation on vehicles.

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ATRI's primary mission is to conduct and support research in the transportation field, with an emphasis on the trucking industry's essential role in the U.S. and international marketplace.