

# SAFETY BULLETIN

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**Triodyne Inc.**

Consulting Engineers &amp; Scientists - Safety Philosophy &amp; Technology

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## SAFETY PHILOSOPHY

### Tautliner Vans Case Study: Safety Philosophy

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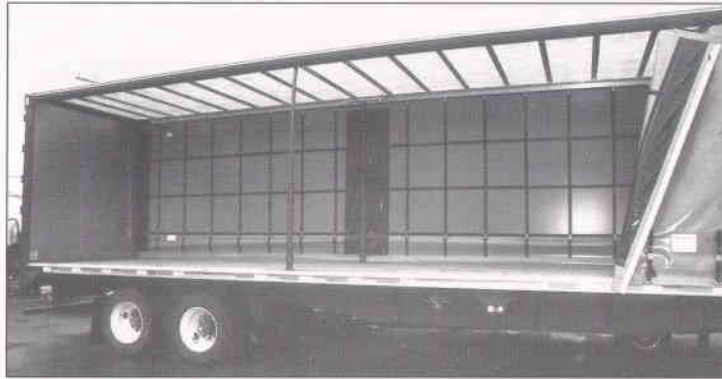


Figure 1 - Tautliner: Loads Like a Flatbed, Protects Like a Van.

## INTRODUCTION

A tautliner is a flatbed truck, such as shown in Fig. 1, whose deck is enclosed by a simple cartesian framework which supports three components: rear cargo doors, a fiberglass roof panel, and flexible load-bearing side curtains. The weather-proof curtains are manually deployed in the manner of shower curtains; typically they may be closed and latched down in less than two minutes. Three sides of this dedicated vehicle may be completely opened to allow simultaneous loading and unloading of palletized lading using ground level forklifts.

Setting aside functional advantages, the safety of the tautliner derives entirely from the property that no operating personnel ever mount the deck. For example, tarping hazards and falling hazards are eliminated. Since loading docks are not used to gain access to the decks, the commonplace dangers associated with dock plates, falling forklifts, and truck/dock crushing are nonexistent.

## PRODUCT LIABILITY ACTION

On September 8, 1997, the driver of a tautliner gained access to its deck by either leaning over the platform and swinging his legs up or by using one of the wheels as a climbing aid. After manipulating non-palletized lading, the driver egressed the truck bed by deliberately jumping to the ground. This fifty-three inch drop gave rise to an injury to his right hand which in turn resulted in a product liability lawsuit.

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Experts for the plaintiff driver took the position that the plaintiff's activities constituted a reasonably foreseeable use of the tautliner and that this use imposes a duty on the manufacturer of the tautliner to incorporate a proper ingress/egress system to the truck bed.

## SAFETY PHILOSOPHY

Each technical work of humankind may be exposed to intended use, extended use, and misuse. In the special case of engineered products, their safety falls within the purview of the First Canon of Engineering Ethics, "Engineers shall hold paramount the safety, health, and welfare of the public in the performance of their professional duties." (Ref. 1) Classically, "professional duties" includes only intended and extended uses, not misuses. Misuse is addressed in product liability doctrine. A manufacturer is required to design for reasonably foreseeable uses which include intended uses, extended uses, and misuses.

Foreseeable uses form a pattern; they are not random. The word reasonable may refer either to the magnitude of the pattern or to the propriety or appropriateness of the foreseeable use (Ref. 2). In the final analysis, the judgment of reasonableness rests with juries who weigh many factors including the nature of the danger.

The various manufacturers of tautliners have produced dozens of brochures and catalogs which clearly establish that only palletized loads are intended for this specialized truck. Consequently, the plaintiff's misuse is easy to demonstrate. Hundreds of photographs are available which depict the loading and unloading activities at many sites and for many industries. None show personnel on the tautliner bed and none illustrate anything other than palletized loads. This evidence is enough to establish that the plaintiff's activities are not foreseeable and are certainly not reasonably foreseeable.

Assume for the sake of argument that the plaintiff's misuse of the tautliner was reasonably foreseeable. The standard approach of the plaintiff's bar would be to embrace an alternate design (Ref. 3) which would incorporate an ingress/egress system to make jumping from the bed unlikely and unattractive. The standard response of the tautliner manufacturer would be to demonstrate that every proposed and existing ingress/egress system introduces new dangers and incompatibilities with the intended loading and unloading protocols. For example, all stair, ramp, and ladder systems that provide "three point contact" for stabilizing climbers, invade the space above the deck that is traversed by pallets and forks. The plaintiff's proposals would be criticized by invoking the Dangerous Safeguard Consensus (Ref. 4) which says in effect that "safeguarding one hazard should not create an additional hazard."

There is an unconventional defense that is also available to the tautliner manufacturer and this one is applicable even when a satisfactory ingress/egress system is obtain-

able. Here, one appeals to the Dependency Hypothesis (Ref. 5) that states, "Every safety system gives rise to a statistically significant pattern of user dependence." This implies that any ingress/egress device placed on the truck will *invite* a foreseeable number of people onto the deck. This will expose them to moving pallets and forks and their associated crushing and impact hazards. Further, deck-top personnel may fall from and onto the truck platform through slip and trip mechanisms that are ungovernable. Once again, the Dangerous Safeguard Consensus has been violated. This defense posture raises the general question, *Is it proper to compromise the safety of an intended design in order to provide protection against reasonably foreseeable misuses?*

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