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16 December 1996

Office of the Chief Counsel
Federal Highway Administration
Room 4232
HCC-10
400 Seventh Street, S.W.
Washington, D.C. 20590

ADMINISTRATION
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LEGS./REGS. DIV.

RE: FHWA Docket No. MC-96-41
Advanced Notice of Proposed Rulemaking
49 CFR Part 393

FHWA-97-2289-8

This letter contains comments in response to an Advanced Notice of Proposed Rulemaking (ANPRM) published by the Federal Highway Administration (FHWA). The ANPRM appeared in the Federal Register on 17 October 1996 (Vol. 61, No. 202) and corresponds to Part 393 of the 49 Code of Federal Regulations (CFR) - Parts and Accessories Necessary for Safe Operation; Development of a North American Standard for the Protection Against Shifting or Falling Cargo. The ANPRM was issued by FHWA to solicit comments about (1) a decision by the FHWA to consider a rulemaking to overhaul its cargo securement regulations, and (2) explain the process that would be used to develop a North American Cargo Securement Standard.

It is understood that a notice will be published by the FHWA to summarize comments and identify any issues that warrant consideration of the standard development process. This includes considering (and filing in the docket) comments such as this one that are received after the comment closing date of 16 December 1996.

1. **Consideration to Overhaul Cargo Securement Regulations**

1.1 **General Comment**

The FHWA is to be applauded for its decision to overhaul its cargo securement regulations, and develop a Uniform North American Cargo Securement Standard. While

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the testing of friction between cargo and the vehicle was included in the multi-year comprehensive research program, there was no specific comment about the securement of "unrestrained" cargo transported in closed (van-type) trailers. Given that the research program is intended to form the basis for adopting new cargo securement guidelines, there is concern that the issue with respect to the securement of "unrestrained" cargo transported in closed (van-type) trailers has yet to be, and may not be, addressed.

1.2 Unrestrained Cargo Loaded in Closed (Van-Type) Trailers

The Insurance Corporation of British Columbia (ICBC) is a provincial Crown corporation and provides universal vehicle-related insurance to more than 2 million motorists. As an advocate of loss prevention, ICBC sponsors and delivers Road Sense initiatives to reduce the frequency and severity of preventable motor vehicle crashes. This includes assisting commercial vehicle fleets develop loss prevention strategies and studying causal factors associated with crashes that involving heavy trucks. The Research Services Department has been conducting an ongoing review of rollover-type events that involve the lateral displacement of "unrestrained" cargo loaded in closed (van-type) trailers. Cargo is generally regarded as being "unrestrained" if the presence of void space between the cargo and inner vertical side structures of a laden closed (van-type) trailer provides an opportunity for cargo to shift along the interior trailer floor surface. This may occur as a function of shipment vibration or dynamic forces generated as the vehicle negotiates a curve. A review of several rollover-type events suggests that the lateral displacement of cargo may have occurred before the rollover threshold of the heavy truck was exceeded.

Two discussion papers have been prepared by the Research Services Department to comment on the securement of "unrestrained" cargo transported in closed (van-type) trailers. The first paper (prepared 20 July 1995) was titled "Lateral Displacement of Unrestrained Cargo Loaded in Closed (Van-Type) Trailers and Subsequent Rollover of Heavy Trucks: A Call for Action - the second (prepared June 1996) "Causal Factors

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Associated with Rollover Crashes of Heavy Trucks Arising from Weight Offset and Manner in which Unrestrained Cargo is Transported in Closed (Van-Type) Trailers". Copies of the discussion papers have been sent to representatives with the Ontario Ministry of Transportation and Transport Canada. A copy of the first paper was, reportedly, provided to members of a joint USA-Canadian committee that met in Washington, D.C. on 24 July 1995.

1.3 Multi-Year Comprehensive Research Program

Written comments were sent 12 November 1993 to the Ontario Ministry of Transportation following the review of a report titled "A Proposal for Research to Provide a Technical Basis for a Revised National Standard on Load Security for Heavy Trucks". Although the report was thorough and well-presented, 2 important issues appeared to be overlooked to develop a National Standard on load security. This included the need to resolve questions about whether (1) national standards on load security can be developed without including research / standards for the securement of "unrestrained" cargo transported in closed (van-type) trailers? and (2) should North American Standards on load security be developed as opposed to national (Canadian-specific) standards? While the second issue appears to have been addressed with the proposal to develop a North American Cargo Securement Standard, there does not seem to be any indication to suggest that the issue of transporting "unrestrained" cargo in closed (van-type) trailers was considered in the comprehensive multi-year research program scheduled for completion at the end of 1996.

1.4 Existing Cargo Securement Regulations

There is a wide range of Federal, State and Provincial cargo securement regulations that have been developed. While there are standards that specifically describe how some commodities must be secured to the open decks of (platform-type) trailers, there appears to be limited information that describes how even the same type of cargo must be secured when transported within closed (van-type) trailers. This may explain why

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there is minimal enforcement with regard to the securement of cargo loaded in closed (van-type) trailers. This was apparent while in attendance at roadside inspections in November 1996 that focused on the securement of cargo transported in closed (van-type) trailers, when not one, but several "seasoned" heavy trucks operators indicated that this was the first time that they had ever been asked to open the rear doors of the trailer so that the securement of the cargo could be inspected.

The United States Federal Motor Carrier Safety Regulations (FMCSR) are published in the Federal Register and used to regulate the safe movement of goods transported by road. Part 393 of the FMCSR contains information about the Parts and Accessories Necessary for Safe Operation. This includes Subpart I of Part 393 which lists general rules for the protection of shifting or falling cargo (Sec. 393.100), securement systems (Sec. 393.102), blocking and bracing (Sec. 393.104), and front-end structures (Sec. 393.106).

Regulations often require that members of law enforcement agencies make subjective determinations at roadside inspection sites about whether "unrestrained" cargo loaded in closed (van-type) trailers has the potential to "shift" or "sway" when the vehicle is operated. Section 393.104 (Blocking and Bracing) requires cargo if not firmly braced against a front end structure to be secure so that when the vehicle decelerates at a deceleration rate of 20 feet per second per second (0.625G) that the *cargo remains on the vehicle and does not penetrate the front-end structure*. Unlike the longitudinal movement of cargo, an acceleration value has not been established for the protection of lateral movement of cargo. A provision requires that cargo must be blocked or braced against the *side, sideboards or stakes of a vehicle or secured by devices* if it can shift sideways in transit.

Although information contained in sections 393.100 through 393.106 of the FMCSR for the protection against shifting or falling cargo applies to trucks, truck tractors, semi-trailers, full trailers and pole trailers that transport cargo the information / illustrations appear to be more directed toward the securement of cargo transported on the open

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decks of (platform-type) trailers as opposed to cargo transported within closed (van-type) trailers.

2. **Process to Develop North American Cargo Securement Standard**

2.1 **General Comments**

The process to develop the North American Cargo Securement Standard provides the opportunity for all interested parties to participate in the development of such guidelines. This includes providing information on the INTERNET to individuals and organizations with INTERNET electronic mail addresses. The FHWA is to be congratulated for providing several avenues for those with an interest to either provide input or receive information on the development of the standard.

2.2 **Involvement**

A drafting group is currently managing the development of the North American Cargo Securement Standard. Membership of the drafting group consists of representatives from the Federal Highway Administration, Commercial Vehicle Safety Alliance (CVSA), Transport Canada, Canadian Council of Motor Transport Administrators (CCMTA), the Ontario Ministry of Transportation and Quebec Ministry of Transportation.

It is understood that the membership of the drafting group is limited. This was done because of the difficulties associated with the drafting of a technical document with a large number of participants. Although this is true and understood, is there an opportunity for an individual to apply to participate and contribute as active "working" member of the drafting group?

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3. **Questions**

Several questions remain unanswered with respect to the securement of "unrestrained" cargo transported in closed (van-type) trailers. The following is a sample list of such questions:

- o Is there reason to be concerned about the presence of void space that exists between cargo and the interior vertical side structures of laden closed (van-type) trailers?
- o How widespread is it for void space to be present within laden closed (van-type) trailers?

NOTE: Arrangements have been made in 1996 with police agencies in British Columbia and the State of Washington to collect data associated with the transportation of cargo in closed (van-type) trailers. The collection of similar data is scheduled in 1997.

- o What type of manufactured goods and commodities bring about a condition of void space between the left and right vertical side structures of laden closed (van-type) trailers?
- o Can alternative measures be taken by those that load cargo in closed (van-type) trailers to reduce the creation of void space that develops between cargo and the interior vertical side structures of closed (van-type) trailers?
- o Is there an undesirable effect (and to what degree) to the transient behaviour of heavy trucks because of a change in the centre of mass arising from the lateral displacement of "unrestrained" cargo?
- o Should specific performance-based standards be developed to secure "unrestrained" cargo transported in closed (van-type) trailers?

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- o Can reasonable measures be taken to develop performance-based standard/s that establish minimum deceleration rate values to which "unrestrained" cargo transported in closed (van-type) trailers must be secured?

NOTE: Acceleration values (in G's) are listed in Sec. 393.100 (e) to restrain intermodal containers to the chassis of motor vehicles.

- o Can performance-based standards for the securement of "unrestrained" cargo transported in closed (van-type) trailers be developed without imposing an unreasonable hardship on the trucking industry?
- o Will performance-based standards that clearly define and illustrate the manner in which "unrestrained" cargo should be secure when transported in closed (van-type) trailers be incorporated in the North American Cargo Securement Standard?

4. **Summary**

The decision by FHWA to replace existing cargo securement regulations with a North American Cargo Securement Standard provides an opportunity to develop standards that clearly describe / illustrate the requirements to secure "unrestrained" cargo transported in closed (van-type) trailers.

The Research Services Department at ICBC has studied the lateral displacement of cargo and often subsequent rollover of heavy trucks. Two discussion papers have been prepared and submitted for discussion to representatives from agencies that are members of the drafting group.

Existing cargo securement regulations from Part 393 of the FMCSR appear to be more directed at the securement of cargo loaded on the open decks of (platform-type) trailers than cargo that is loaded within closed (van-type) trailers.

Several questions remain unanswered with respect to the manner in which "unrestrained" cargo is transported in closed (van-type) trailers.

The FHWA is encouraged to consider developing in the Notice of Proposed Rulemaking which is expected to be issued at the end of 1997 with standards that clearly describe and illustrate the manner in which "unrestrained" cargo must be secured when transported in closed (van-type) trailers

Please indicate how information on the development of the standard can be accessed on the INTERNET. A self-addressed stamped postcard is enclosed to obtain notification that comments were received in response to Docket No. MC-96-41.

Respectfully submitted,

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