

INSURANCE INSTITUTE FOR HIGHWAY SAFETY

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Stephen R. Kratzke
Associate Administrator for Rulemaking
National Highway Traffic Safety Administration
1200 New Jersey Avenue, SE, West Building
Washington, DC 20590

Advance Notice of Proposed Rulemaking; 49 CFR Part 571 Federal Motor Vehicle Safety Standards, Rearview Mirrors; Docket No. NHTSA-2009-0041

Dear Mr. Kratzke:

The Insurance Institute for Highway Safety (IIHS) welcomes the opportunity to comment on the National Highway Traffic Safety Administration's (NHTSA) advance notice of proposed rulemaking (ANPRM) regarding modification of Federal Motor Vehicle Safety Standard 111 Rearview Mirrors to address the problem of backover crashes. IIHS agrees with NHTSA that the magnitude of the problem — 228 deaths and 17,000 injuries caused by passenger vehicle backover crashes every year — justifies an appropriate response from the agency. Although these numbers are a small percentage of the overall problem of motor vehicle crash injuries, they frequently are especially tragic due to familial involvement, and they seem largely preventable by techniques that enhance driver awareness of objects to the rear of a vehicle.

In general, IIHS supports NHTSA's proposed strategy of specifying a minimum blind spot area, including a minimum distance from the rear of a vehicle that must be visible to the driver either directly or with the aid of mirrors or other vision aids. We have the following additional comments addressing specific issues raised in the ANPRM.

Nonvisual Technology

NHTSA has presented evidence suggesting that current nonvisual technologies (e.g., radar and sonar sensors) do not represent an effective solution to the problem of backover crashes. Both the unreliability of current sensors to detect people and drivers' slow responses to audible warnings suggest that requiring or even allowing such systems in lieu of vision-based systems is not advisable at this time. Furthermore, the agency has presented data suggesting that a possible effective countermeasure with existing technology is a combination of vehicle design to maximize directly visible areas as well as mirrors or video technologies to see areas blocked by the vehicle's shape. That said, NHTSA should not preclude the augmentation of visual data with information from other sensing modalities. It is likely that, as these technologies develop, the best future systems will rely on a combination of sensing technologies, perhaps enhanced visual data coupled with nonvisual sensors that alert drivers to access visual data.

Minimum Blind Spot

IIHS's experience with rearview video systems and the data presented by NHTSA suggest that, when these systems are used in combination with better vehicle designs, there is no theoretical reason to accept a blind spot of any size. We strongly urge the agency to seriously consider a requirement that would eliminate entirely a backing driver's rear blind spots.

The data presented in Figures 10 and 11 of the ANPRM indicate there is large overlap of the ranges of both directly visible area and distance from the rear of a vehicle across all passenger vehicle types, except the ranges of these measurements for the largest light trucks do not overlap those for cars.

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Therefore, NHTSA could require that all vehicles meet a minimum area and maximum distance from the back of a vehicle for directly visible area and also require that mirrors or a backing camera cover the area not directly visible. Although rearview video systems seem capable of providing adequate coverage of the areas of concern in backover crashes, it is desirable to preclude vehicle design choices that result in unnecessarily small directly viewable rear areas to account for times when cameras are inoperative due to either malfunction or weather/dirt conditions.

IIHS recognizes that NHTSA's cost-effectiveness estimates suggest it would not be cost effective to require rearview video systems in all vehicles. However, it seems that with vehicle designs that maximize the directly viewable area behind, some vehicles may be able to comply with a no-blind-spot requirement using mirrors instead of video cameras. The agency is requesting information about the efficacy of various mirror designs, and it seems possible this may provide a less expensive option than cameras for some vehicle designs. Furthermore, IIHS expects that any regulation requiring significantly higher levels of rear camera fitment than available in the current market will result in a reduction of systems costs associated with economies of scale. The agency should take these likely cost reductions fully into account in its final analysis. The agency also should consider that avoiding backover crashes is likely a much more valuable outcome than the average value of injuries averted, due to the frequent involvement of family members in the crash.


Performance Requirements for Rearview Video Systems

In its ANPRM, the agency raises several questions about the need for requirements beyond field of view for rear video systems (e.g., display size and location, image resolution and response time, environmental performance). IIHS is not prepared to make specific recommendations about these or other performance requirements, but our experience with various current systems suggests a wide range of performance. For example, some rearview systems appear to be much more immune to weather and road dirt contamination than others. Consequently, we expect that NHTSA will need to specify performance requirements to ensure a minimum level of performance for those systems that are fit to vehicles in order to comply with future regulations.

Summary

The problem of backover crashes deserves NHTSA's attention, and countermeasures that can address the problem are at hand. IIHS urges the agency to establish a no-blind-spot requirement and, failing that, expects NHTSA to specify the smallest practical area and shortest distance behind a vehicle that is blocked from a driver's view. We expect that rearview video systems will be a popular means of meeting such a requirement and therefore urge the agency also to specify performance requirements besides field of view for those systems that vehicle manufacturers fit to comply with NHTSA's future regulation.

Sincerely,



David S. Zuby
Senior Vice President, Vehicle Research

cc: Docket Clerk, Docket No. NHTSA-2009-0041