INSURANCE INSTITUTE
FOR HIGHWAY SAFETY

March 22, 2006

The Honorable Jacqueline Glassman
Acting Administrator
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

New Car Assessment Program (NCAP); Safety Labeling
Notice of Proposed Rulemaking; Docket No. NHTSA-2005-23216

Dear Ms. Glassman:

The National Highway Traffic Safety Administration (NHTSA) has requested comments on information labels for new vehicles required by the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The Insurance Institute for Highway Safety (IIHS) supports the goal of these labels, which is to increase consumer awareness of the comparative levels of crash protection afforded by vehicles. However, IIHS is concerned that the information the agency proposes to include in the label offers limited differentiation among vehicles; at the same time, the presence of this information on vehicles, with the government's imprimatur, could lead consumers to believe no other information is available. This is not the case. Therefore, IIHS requests that the agency modify the label to alert consumers about other available sources of important vehicle crash test information.

SAFETEA-LU requires new passenger vehicles to be labeled with NHTSA's New Car Assessment Program (NCAP) ratings. When NHTSA began NCAP in 1978, the ratings essentially were the only crash test information available to consumers. NCAP showed that informing consumers about the relative crashworthiness of vehicles can pressure manufacturers to improve the occupant crash protection afforded by their vehicles. Research conducted by NHTSA, IIHS, and the General Accountability Office (GAO) has shown that the improvements NCAP prompted have reduced deaths and injuries in the real world (GAO, 1995; Jones and Whitfield 1988; Kahane et al., 1994).

However, as GAO pointed out in its April 2005 review of NCAP, "the very success of the program has brought it to a point where it is not clear that the program's goals can continue to be met. Because almost all vehicles today receive four- and five-star frontal and side—impact safety ratings, NCAP provides little incentive for manufacturers to

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further improve the safety of their vehicles and does not provide consumers with information that differentiates the safety of one vehicle compared to another" (GAO, 2005).

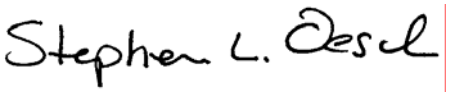
IIHS has introduced several tests using procedures and ratings that differ from NCAP's (see attachment). This motor vehicle safety information complements and expands NCAP ratings. If a vehicle label refers only to the NCAP ratings, consumers will be led to believe that these ratings are the only available information for evaluating and comparing vehicles' relative safety performance. This would be unfortunate because, as GAO and others have pointed out, the NCAP frontal and side tests no longer do much to distinguish crashworthiness differences among vehicles (GAO, 2005; IIHS, 2004). In contrast, the IIHS side test shows marked differences in the relative levels of protection provided by different vehicles. For example, GAO compared results for 27 vehicles rated poor in the IIHS side impact test with NCAP side test ratings. NHTSA gave 21 of the 27 vehicles four- or five-star safety ratings (GAO, 2005). In the case of the IIHS rear impact test, there is no comparable NCAP test. Without access to the IIHS test information, consumers will not have any information about the relative levels of protection provided by seat and head restraint designs in rear impacts. This is why the label on new vehicles needs to alert consumers about additional safety information.

Referring consumers to additional crash test information is consistent with the requirements of SAFETEA-LU. While the primary objective of Section 10307 of the Act is to provide consumers with information about NCAP ratings, the Act directs NHTSA to go beyond the NCAP ratings and the information on NHTSA's safecar website to provide consumers with access to additional resources. Section 10307(g)(3) of the Act specifically requires NHTSA to include on the label information describing the nature and meaning of NCAP data plus "reference to additional vehicle safety resources" beyond what is on the safecar website. NHTSA could meet this legislative requirement by amending section 575.301(9) of the proposed rule to require the footer area of the label to list the web address for the IIHS website (www.iihs.org) and the websites of other organizations the agency finds to offer independent, objective, and comparative safety information. Alternatively, NHTSA could require the IIHS ratings to be posted on the label. Then consumers would have access at the point of purchase to additional vehicle safety resources that show meaningful differences in the safety performances of vehicles.

There is precedent for NHTSA to refer consumers to IIHS information. NHTSA's insurance cost information regulation requires dealers to make available to consumers information on vehicles' insurance collision

loss experience (49 CFR 582). The collision loss data are provided by the Highway Loss Data Institute, which is a nonprofit organization affiliated with IIHS.

Sincerely,



Stephen L. Oesch
Secretary-Treasurer and Senior Vice President
Insurer and Government Relations

cc: Docket Clerk, Docket No. NHTSA-2005-23216

References

Insurance Institute for Highway Safety. 2004. Comment to the National Highway Traffic Safety Administration concerning proposed changes to the frontal New Car Assessment Program, Docket No. NHTSA-2004-18765, December 13, 2004. Arlington, VA.

Jones, I.S. and Whitfield, R.A. 1988. Predicting injury risk with "New Car Assessment Program" crashworthiness ratings. *Accident Analysis and Prevention* 20:411-19.

Kahane, C.J.; Hackney, J.R.; and Berkowitz, A.M. 1994. Correlation of vehicle performance in the New Car Assessment Program with fatality risk in actual head-on collisions. *Proceedings of the 14th International Technical Conference on the Enhanced Safety of Vehicles*, 1388-1404. Washington, DC: National Highway Traffic Safety Administration.

U.S. General Accounting Office. 1995. Highway safety: reliability and validity of DOT crash tests. Report no. GAO/PEMD-95-5. Washington, DC.

U.S. Government Accountability Office. 2005. Vehicle safety: opportunities exist to enhance NHTSA's New Car Assessment Program. Report no. GAO-05-370. Washington, DC.

Attachment

IIHS Frontal Offset Test

Since 1995 IIHS has conducted crash tests to provide consumers with information on the relative performance of vehicles in 40 mi/h (64 km/h) frontal offset tests. This test offers prospective purchasers additional information that complements NCAP. The NCAP frontal full-width barrier test is a good test of restraint system performance but not as good an indicator as IIHS frontal tests of the structural performance of vehicles because the forces of the crash are spread across the full width of the vehicle. This means there is little intrusion into the passenger compartment. In comparison, as shown in Figure 1, in the IIHS frontal offset test the barrier and the vehicle are aligned so that only 40 percent of the vehicle strikes the barrier face. Thus the forces generated during the crash are concentrated on a portion of the front of the vehicle and can potentially cause greater intrusion.

Figure 1
Typical passenger car and IIHS frontal offset barrier

To earn a good rating in the IIHS frontal test, manufacturers must design their vehicles so that the front ends crush in a controlled manner to absorb the energy of the impact and limit the amount of intrusion into the passenger compartment. Each tested vehicle earns an overall rating based on three aspects of performance: structural performance derived from measurements indicating the amount and pattern of intrusion into the driver space, dummy injury risk measures, and how well the restraint system controls dummy movement during the crash. Each of these aspects is rated separately and then combined to produce an overall frontal crash protection rating of good, acceptable, marginal, or poor.

In 2004 IIHS researchers studied the relationships between IIHS frontal crashworthiness ratings and fatal crash risks in real-world head-on crashes. In the real crashes of vehicles rated good and poor, the estimated odds of a driver fatality were approximately 56 percent lower in the good vehicles than in the poor ones. Vehicles rated good also had significantly lower driver fatality rates in frontal crashes

per million registered vehicles than the same vehicles with poor ratings. This was true for cars (43 vs. 53 frontal impact deaths per million), minivans (21 vs. 34), and SUVs (16 vs. 40). For pickup trucks the difference between those with good and poor ratings (45 vs. 63) was not statistically significant (Farmer, 2005; updated with 2003 FARS data).

IIHS Side Impact Test

In 2003 IIHS began a new test series to evaluate the performances of new vehicles in 31 mi/h (50 km/h) side impacts in which vehicles are struck by a moving deformable barrier representing a pickup truck or SUV. In contrast, the NCAP side impact test uses a moving deformable barrier representing the size and weight of a passenger car. As shown in Figure 2, the IIHS test procedure is more demanding than the NCAP test because the barrier is higher off the ground and taller than NHTSA's barrier, so the top of IIHS's barrier is in line with the head of a passenger car occupant. The IIHS barrier face also is contoured like a pickup truck or SUV instead of flat, like NHTSA's barrier.

Figure 2
Typical passenger car and NHTSA and IIHS barriers

NHTSA barrier **IIHS barrier**

In each side-struck vehicle are two instrumented 5th percentile female SID-IIs dummies, one in the driver seat and the other in the rear seat behind the driver. These dummies are used because data from serious real-world side impacts indicate that women are more likely than men to suffer serious head injuries. The other reason is that the head of the small SID-IIs driver dummy is in the window area, where people's heads are more vulnerable to being struck in real crashes.

Three aspects of performance in the test produce a vehicle's overall side crash protection rating: dummy injury risk measures, movements and contacts of the dummies' heads during the crash, and structural performance derived from measurements of intrusion into the occupant compartment around the B-pillar. These aspects are assessed separately and then combined to provide an overall side crash protection rating of good, acceptable, marginal, or poor.

IIHS also rates each vehicle for potential head, chest, and pelvic injuries. While NHTSA collects all three types of injury data, it only uses the chest and pelvic injury measures to rate a vehicle. To provide sufficient protection in the IIHS side impact test, vehicle manufacturers must strengthen the side structures of their vehicles to reduce intrusion. Cars must be equipped with side airbags that protect the head to reduce the frequency and severity of head injuries. An IIHS study of real-world crashes found that such airbags can substantially reduce the frequency of fatal head injuries in side impacts (Braver and Kyrychenko, 2004). As with IIHS's frontal testing, the side test measures additional aspects of crashworthiness performance to provide consumers with important safety information that is not measured in NCAP.

IIHS Rear Test

IIHS has been rating head restraint geometry since 1995, and last year a consortium of insurer-supported research centers including IIHS added dynamic tests to rate the protection afforded by seat/head restraints against whiplash injury in rear-end crashes. The new ratings are based on a two-step evaluation. In the first step a head restraint's geometry is measured relative to the seated height of an average-size man. Each restraint is classified according to its height and backset into one of four geometric zones: good, acceptable, marginal, or poor. Seats with good or acceptable geometric ratings then are subjected to a dynamic test. Head restraints with marginal or poor geometry are not tested because they cannot protect taller people. They are rated poor overall.

Seat/head restraints are tested in a simulated rear impact conducted on a sled with a 50th percentile male BioRID dummy. The test simulates a collision in which a stationary vehicle is struck in the rear by a vehicle of the same weight going 20 mi/h (32 km/h). Each seat/head restraint's dynamic performance is based on two sets of criteria measured on BioRID. The first set includes the two seat design parameters, time to head restraint contact and peak torso acceleration. The second set includes maximum neck shear and tension forces.

A seat that passes at least one of the seat design parameters and has low neck forces earns a dynamic rating of good. Then the geometric and dynamic ratings are combined to produce a seat/head restraint combination's overall evaluation.

References

Braver, E.R. and Kyrychenko, S.Y. 2004. Efficacy of side air bags in reducing driver deaths in driver-side collisions. *American Journal of Epidemiology* 159:556-64.

Farmer, C.M. 2005. Relationships of frontal offset crash test results to real-world driver fatality rates. *Traffic Injury Prevention* 6:31-37.