

1975 Cars: 'Substantial Increase' In Losses

Confirming the findings of an earlier, preliminary report, the Highway Loss Data Institute's second, more detailed report on the collision claims experience of 1975-model automobiles during their first year of operation has shown "substantial increases" in the average loss payments for the 1975 models "over the corresponding 1974 model first year results" — increases ranging "as high as 29 percent for sub compacts and 26 percent for the luxury market class."

The second report on the 1975 models was issued along with other HLDI reports covering:

- The collision claims performance of 1973 model automobiles in their first three years of operation, and 1974 models in their first two years (described below);
- Differences between the collision claims experience of two-door and four-door models of the same series (see following story);
- Increases in collision claims frequency associated with increased vehicle density — a report that found relationships between vehicle density of registered vehicles per square mile and losses for 1974 and 1975 models similar to those found in an earlier report for 1972 and 1973 models. (See *Status Report*, Vol. 9, No. 18, Oct. 11, 1974.)

The results for 1975 models were consistent with the earlier, preliminary results. (See *Status Report*, Vol. 10, No. 14, Aug. 14, 1975.) According to the report:

Inside

- | | |
|---|--|
| ● Study Terms Defined . . . Page 2 | ● Official Explains Vote Against
Mandatory Belt Use . . . Page 10 |
| ● Two-Door Autos Experience
Greater Losses . . . Page 5 | |
| ● Longer Stopping Distances
Proposed For Trucks . . . Page 7 | ● Update: Neck Studies,
Belt Law . . . Page 11 |

“Increases in average loss payment amounts were to be expected for the 1975 models, since automobile crash parts prices have been increasing at a rate far greater than that of the consumer price index and other economic indicators. The increases in the claim frequencies are, at least in part, probably also due to this rapid inflation in charges for automobile crash parts, because these collision coverage insurance results are based on insurance coverages sold with \$50 and \$100 deductible – amounts which must be exceeded before claims can be made. Thus, when the cost to repair the same automobile crash damage increases, the number of claims exceeding the deductibles will increase even if the total number of vehicles damaged remains unchanged.”

FINDINGS CONSISTENT

The three reports on collision claims performance for vehicles of the 1973, 1974 and 1975 model years show consistency in their findings – particularly noteworthy since the 1973 and 1974 models have now accumulated much greater exposure, in terms of insured vehicle years, than the 1975 models. They also show consistency with the results developed for the 1973 and 1974 models during their initial years of operation. (See *Status Report*, Vol. 8, No. 18, Oct. 5, 1973; Vol. 9, No. 6, March 26, 1974; Vol. 9, No. 10, May 15, 1974; Vol. 10, No. 4, Feb. 14, 1975.)

Whether in the initial reports or in the subsequent reports based on greater exposure, large and quite stable variations continue to show up between market classes as a whole, and also among individual vehicle series in each market class. For example; over the model years covered in the three reports:

- The sub compact market class has consistently had higher average loss payments per insured vehicle year than the compact, intermediate or full-size vehicle classes. The full-size market class has consistently had the lowest. Luxury, specialty and “expensive specialty” market classes are, as groups, far more costly in their average loss payments per insured vehicle year than other groups.
- Among the 1973 model two-door intermediates, exposure for individual models during three years of operation ranged from 11,937 to 117,266 insured vehicle years. But even with such large exposures,

‘Exposure’ Defined

“Exposure,” as used in HLDI reports, means the amount of time during which the vehicles studied have been covered by insurance. Ten thousand vehicles, each having been in operation for six months and covered by collision insurance during that time, would produce 5,000 “insured vehicle years of exposure.”

HLDI results described in this issue for the 1975 model year are based on almost 400,000 insured vehicle years of exposure, those for the 1974 model year are based on more than 2,000,000 years of exposure, and those for the 1973 model year are based on almost 4,000,000 years of exposure.

In general, the greater the exposure of a vehicle series, the more confidence can be placed in the results presented for it – although, as the HLDI reports described in this issue demonstrate, HLDI data based on the smaller amounts of exposure produced during a vehicle model’s earliest period of operation are generally consistent with those based on the much larger exposures that accumulate as the vehicles are in use for longer periods.

**LOSS PAYMENT SUMMARY BY YEAR OF AVAILABILITY – TWO DOOR COMPACTS
1973 MODELS – COLLISION COVERAGES***

Make	Series	Exposure (Insured Vehicle Years)			Average Loss Payment Per Insured Vehicle Year		
		1st Year	2nd Year	3rd Year	1st Year	2nd Year	3rd Year
Dodge	Dart Swinger	7,756	22,836	20,977	\$34	\$35	\$39
Plymouth	Valiant Scamp	3,164	9,294	8,536	\$36	\$40	\$43
Oldsmobile	Omega	2,547	7,222	6,361	\$41	\$42	\$51
Pontiac	Ventura	4,185	10,851	9,657	\$50	\$42	\$46
Chevrolet	Nova	19,277	48,790	43,002	\$51	\$45	\$51
Plymouth	Valiant Duster	15,339	45,081	40,355	\$49	\$49	\$54
Dodge	Dart Sport	4,142	11,956	10,931	\$51	\$49	\$54
American	Hornet	4,271	11,956	9,858	\$58	\$46	\$55
Ford	Maverick	12,060	34,112	29,867	\$63	\$55	\$57
Mercury	Comet	2,966	8,574	7,465	\$63	\$53	\$61
Exposure Total		75,707	209,741	187,009			

*Excerpted from *Automobile Insurance Losses, Collision Coverages; Variations by Make and Series, 1973 Models During Their First Three Years* (HLDI R73-4).

the average loss payments per insured vehicle year for individual models ranged from \$45 to \$81 – a range similar to that found for the same vehicles during their first year of operation, when exposure was much smaller.

- In the compact class, the two-door models with the highest and lowest average loss payments per insured vehicle year have remained virtually the same from the 1973 through the 1975 model years. Of the two-door compacts, the models with the two lowest average loss payments per insured vehicle year for each of the model years in which they were reported included the Dodge Dart Swinger and Plymouth Valiant Scamp, while the models with the two highest average loss payments per insured vehicle year included the Ford Maverick and Mercury Comet.

These findings were consistent for the second and third years of operation for the 1973 models and the second year of operation for the 1974 models. In these subsequent years, exposure increased substantially. (See table above.)

It should be kept in mind, that, in general, the greater the exposure of a vehicle series the more confidence can be placed in the results presented for it.

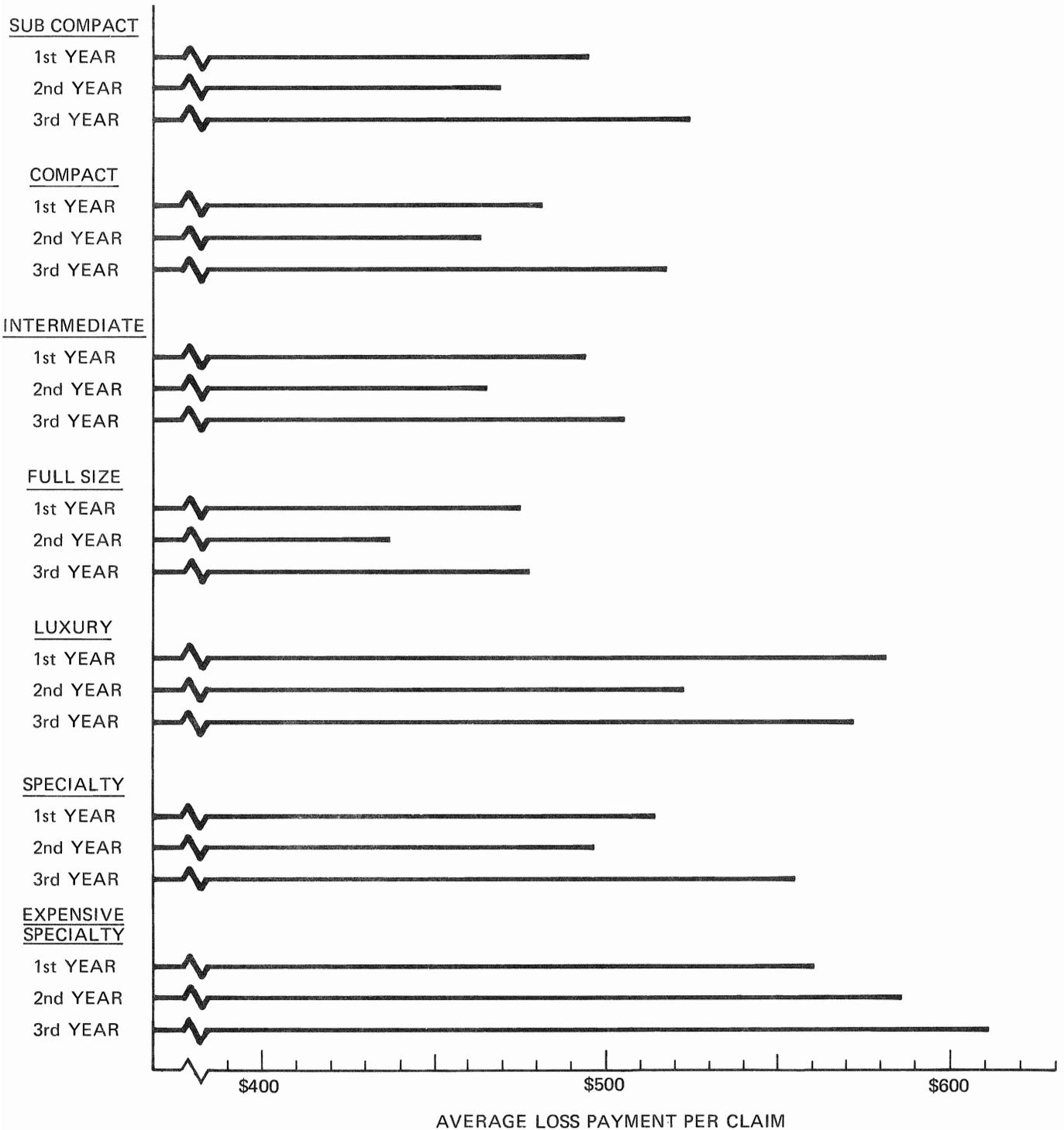
OLDER CARS

The reports on the 1973 and 1974 models in their first and subsequent years indicate the probable influence of parts price increases on the size of the average loss payment per claim for these cars.

For instance, although most market classes had slight decreases in the average loss payment per claim for the 1973 models in their second year of operation, most showed substantial increases in the third

year of operation – so substantial that for six of the eight market classes, the third year of operation resulted in higher average loss payments per claim than even the first year. (See graph below.)

AVERAGE LOSS PAYMENT PER CLAIM BY YEAR – 1973 MODELS – COLLISION COVERAGES



HLDI was formed in December, 1972, as an outgrowth of a special data project initiated earlier by the Insurance Institute for Highway Safety. (See *Status Report*, Vol. 8, No. 1, Jan. 3, 1973.) It is a nonprofit organization that gathers, processes and provides the public with insurance data concerned with human and economic losses resulting from highway crashes.

Members of HLDI are: Allstate Insurance Co., The Hartford Insurance Group, The Home Insurance Co., Kemper Insurance Group, Liberty Mutual Insurance Co., Nationwide Mutual Insurance Co., Prudential Property and Casualty Insurance Co., State Farm Mutual Automobile Insurance Co. and The Travelers Insurance Co.

Copies of the following reports are available from the Highway Loss Data Institute, Watergate Six Hundred, Washington, D.C. 20037:

- *Automobile Insurance Losses, Collision Coverages; Variations by Make and Series, 1975 Models During Their First Year* (HLDI R75-2);
- *Automobile Insurance Losses, Collision Coverages; Variations by Make and Series, 1974 Models During Their First Two Years* (HLDI R74-3);
- *Automobile Insurance Losses, Collision Coverages; Variations by Make and Series, 1973 Models During Their First Three Years* (HLDI R73-4);
- *Automobile Insurance Losses, Collision Coverages; Relationships Between Losses and Vehicle Density, 1974 and 1975 Models* (HLDI A-4);
- *Automobile Insurance Losses, Collision Coverages; Relationships Between Losses and Vehicle Body Style, 1974 and 1975 Models* (HLDI A-5).

Two-Door Autos Experience Greater Losses

Two-door model cars experience consistently higher losses than corresponding four-door models, regardless of wheelbase differences, according to insurance claim data analyzed in a report from the Highway Loss Data Institute.

“In almost every case for all three categories of loss – claim frequency per 100 insured vehicle years, average loss payment per claim, and average loss payment per insured vehicle year – two-door models exceeded the loss experience of the corresponding four-door models,” the report concludes.

These findings confirm indications from earlier HLDI reports that two-door models tend to have a higher loss experience than corresponding four-door models of the same car line. In those reports, however, two- and four-door models in the same car line were reported separately only if they had different wheelbases. The most striking finding of the present study, therefore, is that the difference in loss experience consistently occurs whether or not there are wheelbase differences.

The report compares loss results for three different body styles – two-door models, four-door models and station wagons – within the same car line for “1974 and 1975 model year vehicles from car lines within four market classes – compact, intermediate, full-size and luxury.”

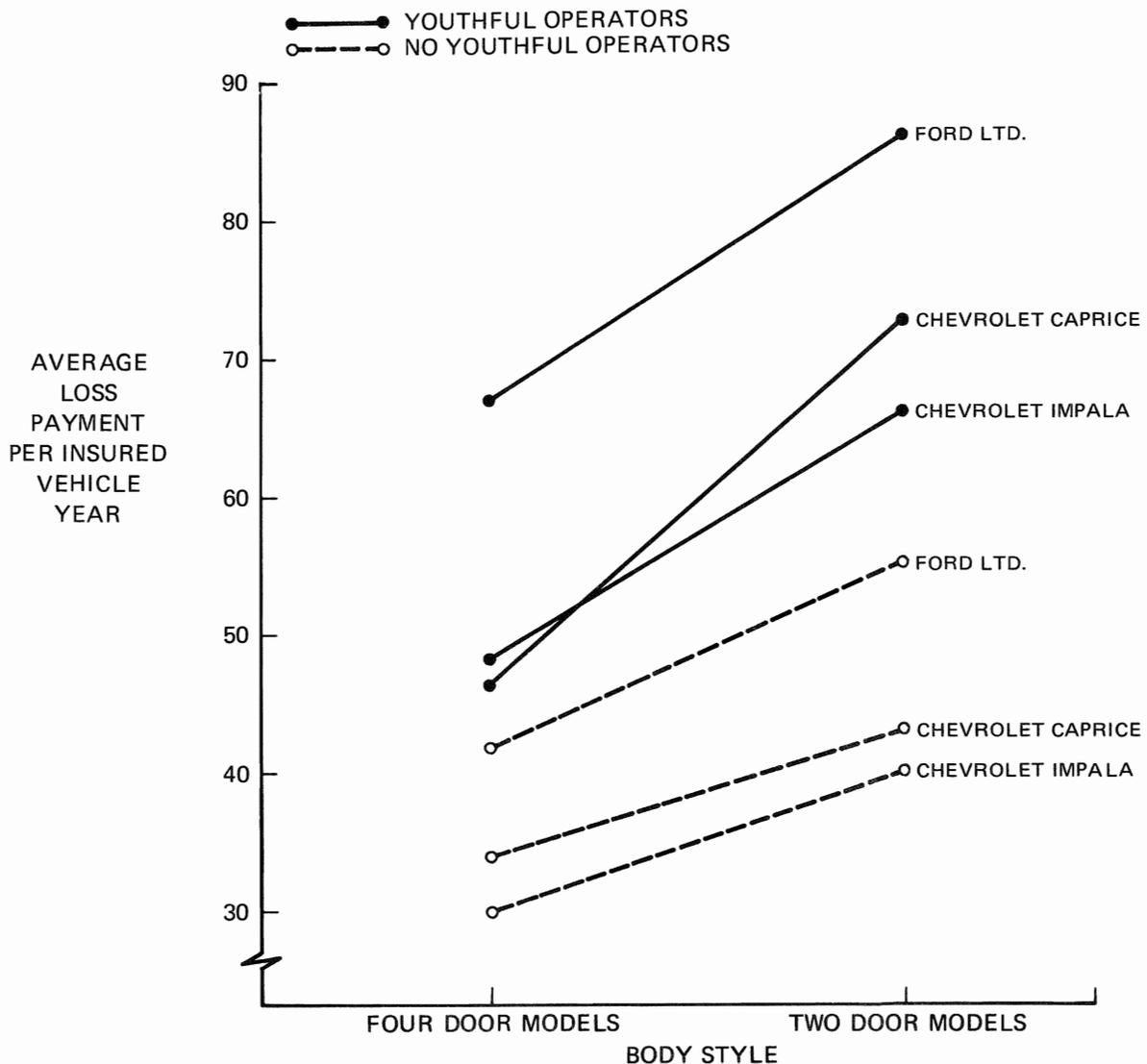
“These market classes were selected for study,” the report says, “because most car lines from these market classes had models with differing body styles, whereas vehicles in the other market classes tended to

be either predominantly two-door models or four-door models” (e.g. in the intermediate class, the Oldsmobile Cutlass is available in two-door, four-door and station wagon models).

Results for 1974 and 1975 model year car lines with a common wheelbase for both two-door and four-door models show that the two-door models almost always have higher losses than the corresponding four-door models. (See graph below.) For example, the claim frequency per 100 insured vehicle years found for the two-door Ford LTD is 10.4 and for the four-door model 8.8.

The study cautions that, although a threshold of 1,000 insured vehicle years was selected for the detailed reporting of results by vehicle body style, “it should be kept in mind that, in general, the greater the exposure of a vehicle series the more confidence can be placed in the results presented for it.”

**COMPARISONS BETWEEN BODY STYLES – 1974 FULL SIZE MODELS
AVERAGE LOSS PAYMENT PER INSURED VEHICLE YEAR
COLLISION COVERAGES**



RESULTS WITH YOUTHFUL OPERATORS

The study compares results for the 1974 car lines with more than 1,000 insured years of exposure of coverage for vehicles with both youthful operators and no youthful operators in both two- and four-door models. The results show that the increases associated with two-door models are more pronounced for the "youthful operators" group than for the "no youthful operators" group, but in virtually every comparison the two-door models had higher loss results than the corresponding four-door models within both operator age groups.

For example, in the "no youthful operators" group, claim frequency per 100 insured vehicle years for the 1974 Ford LTD two-door is 9.5 and for the four-door 8.0. In the "youthful operators" group, the corresponding figures are 14.0 for the two-door and 12.3 for the four-door.

Similar results are not presented for the 1975 models because of "the much smaller amounts of exposure for which experience was available at the time of preparation of this report."

1974 AND 1975 RESULTS

The 1974 model results show that, out of the 38 comparisons possible, "claim frequency was higher for two-door models than for corresponding four-door models in 36 instances, average loss payment per claim was higher in 29 instances and average loss payment per insured vehicle year was higher in 36 instances."

For 1975 models, out of the 21 comparisons possible, "claim frequency was higher for two-door models than for corresponding four-door models in 19 instances, average loss payment per claim was higher in 13 instances, and average loss payment per insured vehicle year was higher in 16 instances," the report says.

The study finds that the loss experience of the station wagons was "less consistent." Within the intermediate market class, results for station wagons tend to be closer to those for four-door models than to those for two-door models, while within the full size market class this relationship is reversed.

Longer Stopping Distances Proposed For Trucks

Stopping distances for heavy trucks would be increased under a new proposal by the National Highway Traffic Safety Administration. The proposal does not, however, eliminate the requirement that vehicles stop with no wheel lockup, a change sought by some vehicle manufacturers and users.

The proposal is an additional response to the October public meeting held by NHTSA to hear comments on its standard (FVMSS 121) that specifies minimum performance requirements for vehicle air brake systems. Following that meeting, the agency proposed that the standard be suspended for buses. (See *Status Report*, Vol. 10, No. 19, Nov. 24, 1975.)

On January 6, the agency announced that the standard would be suspended for one year because it “found that a pattern of erratic behavior exists in bus antilock equipment used in most transit and intercity operation that warrants disconnection while a correction is fully developed.” NHTSA also “found it inappropriate for purchasers of new buses to be required to pay for antilock systems that are deactivated while improvements are developed.”

The first stage of the standard went into effect for trailers on Jan. 1, 1975, and for trucks and buses on March 1, 1975. The second stage of the standard – upgrading the braking capability of trucks and buses – was scheduled to go into effect on Sept. 1, 1975. That measure, however, was delayed by NHTSA until Jan. 1, 1978, at manufacturer and user request. (See *Status Report*, Vol. 10, No. 15, Sept. 15, 1975.)

Under NHTSA’s new proposal, the second stage’s upgraded stopping distance requirements would be eliminated and the current stopping distances would be increased. NHTSA said that in the future it “intends to reduce the disparity between heavy and light vehicle braking performance levels, but the new performance levels established on the basis” of its current proposal “will not be modified without further notice and opportunity to comment by interested persons.”

According to NHTSA, the average loaded passenger car can currently stop from 60 miles per hour on a dry surface in approximately 200 feet. Under NHTSA’s new proposal, air brake-equipped loaded trucks would have 293 feet in which to stop under equivalent conditions.

(A study, sponsored by the Insurance Institute for Highway Safety and the Maryland Medical-Legal Foundation, of 150 fatal crashes involving tractor-trailers found that in 31 rear-end collisions not known to have occurred on an uphill grade, the tractor-trailer was the rear – striking – vehicle in 23 cases. “The mass of tractor-trailers, relative to passenger cars, makes their ability to stop especially important Other researchers have shown that in rear-end turnpike collisions, trucks are involved as the striking vehicle more than twice as often as expected,” the study reported. See *Status Report*, Vol. 10, No. 13, July 30, 1975.)

ANTILOCK

A principal source of controversy surrounding the air brake standard concerns its performance requirement that a vehicle’s wheels not lockup during braking, in order to preserve directional steering control and prevent the vehicle from skidding out of its lane of traffic. By statute, NHTSA can only set performance requirements in its safety standards, but cannot require the use of specific designs. To meet the no wheel lockup performance requirement, manufacturers made the design decision to install antilock or antiskid systems on their vehicles. At the recent NHTSA public meeting, the use of antilock devices was assailed by some manufacturers and vehicle users and supported by others.

An NHTSA evaluation of the reliability of current antilock design found that “the durability problems stem from design deficiencies of certain systems that are being isolated and changed with introduction of the systems into service.” Based on its evaluation, NHTSA concluded that “antilock systems are sufficiently reliable and will become more so, justifying their continued installation on air brake vehicles” The agency added, however, that because of its proposed increases in stopping distances, truck “braking forces will be reduced sufficiently to obviate the need for antilock systems on the front axle of many vehicles.”

LONGER STOPPING DISTANCES

Citing its testing of one current production truck complying with the standard, NHTSA said that the standard’s present requirement of a 60 mile per hour stopping distance of 277 feet for a loaded truck on a dry surface is “not an unreasonable demand” and can be met “easily without adverse handling

consequences.” But, because of the design decisions of several manufacturers to use oversize front axle brakes, NHTSA said that some vehicles complying with the standard “exhibit unsatisfactory characteristics during braking.” Because of those design decisions and with “a view to the economic problem being experienced by heavy truck manufacturers,” the agency decided to propose a reduction in “the performance levels of the standard somewhat to permit the ‘depowering’ of the steering axle brake sufficiently to improve handling characteristics while these design problems are being resolved by manufacturers.”

Under the NHTSA proposal, the stopping distances would be increased for loaded trucks, such as from 277 to 293 feet for 60 mile per hour stops, but the current stopping distances would be retained for unloaded vehicles.

The following table compares the current and proposed dry surface stopping distances in feet for trucks:

<u>Miles Per Hour</u>	<u>Current Requirements</u>		<u>Requirements</u>	<u>Proposed Requirements</u>
	<u>Unloaded</u>	<u>Loaded*</u>	<u>Effective Jan. 1, 1978*</u> <u>(Loaded and Unloaded)</u>	<u>(Loaded)</u>
20	35	35	33	35
30	72	73	68	75
40	121	127	115	131
50	183	194	174	203
60	258	277	245	293

* Would be replaced by proposed requirements.

COST

At the recent public meeting, and in petitions filed with the agency, several vehicle manufacturers and users argued that the standard should be substantially changed or eliminated for cost reasons. In its latest proposal NHTSA responded to those requests, saying that a “broad-scale modification of the standard for cost reasons at this time would be inappropriate.” Additional “time is needed for equipment ‘debugging,’ personnel training, and the development of competitive market pressures before equilibrium costs of the standard may be firmly established,” the agency said.

Comments on NHTSA’s proposal, which appeared in the *Federal Register* of Dec. 22, 1975, should be submitted to Docket 75-16, Notice 5, Docket Section, National Highway Traffic Safety Administration, Room 5108, 400 Seventh St., S.W., Washington, D.C. 20590. Comments are due by Feb. 2, 1976; the agency requests, but does not require, that 10 copies of each comment be submitted.

Official Explains Vote Against Mandatory Belt Use

A member of the National Committee on Uniform Traffic Laws and Ordinances has written *Status Report* to explain one of the reasons that he believes the committee rejected a model law on mandatory safety belt use. (See *Status Report*, Vol. 10, No. 16, Sept. 30, 1975.)

Paul L. Streb, director of traffic engineering, Nassau County, New York, said some of the votes against the proposal were cast because there was "a feeling that mandatory installation of air bags would be far more effective than the use of seat belts, considering the expected low percentage of seat belt use even under a mandatory law.

"All of a sudden the auto manufacturers' representatives [on the committee] were urging mandatory seat belt use when in past years they venomously opposed equipping new vehicles with seat belts.

"It was felt by some members that if the mandatory use of seat belt model law was passed, it would only serve to give further reason" for auto manufacturers not to equip new vehicles with air bags.

Streb concluded that equipping vehicles with air bags "would be the most effective and practical way to reduce injuries and fatalities."

Highway Safety Construction Funding: Correction

In a story on the House and Senate versions of the Federal-aid Highway Act of 1975, it was incorrectly reported that neither bill made large scale provision for funding highway safety construction projects off the federal-aid road system. (See *Status Report*, Vol. 10, No. 21, Dec. 23, 1975.)

According to the Senate bill, highway safety construction funds *would* be available to the states for use "on *all* public roads . . . including projects to eliminate roadside obstacles, to correct high-hazard locations, to eliminate hazards at railroad-highway crossings, and to improve highway marking and signing," (emphasis added).

The House bill would, as reported, limit use of safety construction funds to the federal-aid system, with the exception of funds earmarked for eliminating rail-highway crossings off the system. In addition, at the discretion of the Secretary of Transportation, funds for the improvement of highway pavement markings could be used by the states on roads off the federal-aid system.

According to the congressional sources, these and other differences between the two bills should be resolved in the Senate-House conference committee at the end of January.

UPDATE . . .

NECK INJURY SUSCEPTIBILITY: The final report on a series of studies of the basic physical characteristics of the neck that may influence a person's susceptibility to "whiplash" injury during rear-end collisions has been published by the Highway Safety Research Institute at the University of Michigan. According to the authors, the research suggests that various population groups have varying susceptibility. "Aging and sexual differences in cervical mobility, reflex time, and muscle strength were all found to be important factors in injury susceptibility," they said.

This report is a compilation of results and data published in earlier studies. (See *Status Report*, Vol. 10, No. 10, May 12, 1975.) The studies were sponsored by the Insurance Institute for Highway Safety. The 333-page final report, "Bioengineering Study of Basic Physical Measurements Related to Susceptibility to Cervical Hyperextension-Hyperflexion Injury," was written by Richard G. Snyder, Don B. Chaffin and David R. Foust. Single copies from a limited supply are available to *qualified researchers* from the Insurance Institute for Highway Safety, Watergate Six Hundred, Washington, D.C. 20037. Copies can also be obtained for \$9.75 by requesting report PB 247763 from the National Technical Information Service, 5285 Port Royal Road, Springfield, Va. 22151.

ONTARIO MANDATORY BELT USE LAW: The mandatory safety belt use law that went into effect in Ontario on Jan. 1, 1976, has a "phase-in" period during which fines are not issued for failure to wear belts, according to a Canadian Ministry of Transport official. The official told *Status Report* that during January, persons stopped for violation of the law are being "advised that there is such a law and advised that . . . beginning in February, fines will be issued" for failure to wear belts. The government "will be carrying out an intensive program of commercials on seat belt use and the new law" during January, the official said.

The official also said that during final passage of the belt use law, it was amended to permit the use of government "approved child restraints" instead of belts to restrain children. Under the new law, drivers are responsible for restraint use by passengers between the ages of 2 and 16. (See *Status Report*, Vol. 10, No. 20, Dec. 10, 1975.)

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Editor: Tim Ayers

Writers: Ralph Hoar, Stephen Oesch, Lloyd Slater,
Christine Whittaker

Production: Diane Everitt, Hazel Zuchelli

INSURANCE INSTITUTE for HIGHWAY SAFETY
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