the highway
loss reduction

STATUS REPORT

INSURANCE INSTITUTE
for Highway Safety

Vol. 6, No. 9 May 10, 1971

# '73 REAR BUMPER RULE EXCEEDED—SINCE '69

The Department of Transportation's recently issued standard for rear bumpers, which won't take effect until the 1973 model year, is "so weak that damage prone cars with their eggshell exteriors have for some years been able not only to meet, but to exceed the requirements," according to the president of the Insurance Institute for Highway Safety.

In a statement prepared for testimony before the U.S. Senate Commerce Committee, Dr. William Haddon, Jr., documented this conclusion with films of 2.5 mile per hour rear-into-barrier crash tests conducted for the Institute on five 1971 model cars and with films of the Institute's earlier rear-into-barrier test crashes at twice that speed.

He also showed the committee results of the Institute's recently completed 10 and 15 mile per hour barrier crash tests on a group of 1971 model cars — tests in which damage was even greater than that produced in the Institute's 1969 and 1970 model tests at the same speeds.

## Inside



The DOT recently issued a standard (FMVSS No. 215) requiring that 1973 models be able to withstand 2.5 mile per hour rear-into-barrier crashes without suffering specified kinds of damage to a limited list of what it terms "safety related" items: tail lights, fuel and exhaust systems and trunk latches. (See Status Report, Vol. 6, No. 8, April 26, 1971.)

In his prepared testimony Haddon said the DOT standard "represents no real advance over current and past cars and at least for some models actually would sanction a large step backward from their present crashworthiness capabilities."

In the Institute's crash tests at 2.5 miles per hour — a speed at which, Haddon said, a one and a half year old toddler walks — four of five 1971 models tested met requirements of the standard. The fifth, an American Motors Ambassador, failed the test because of a "minor break" in the red plastic lens over one tail light. The five models sustained these amounts of estimated damage in the toddler-speed rear end crashes:

| 1971 Models | Estimated Repair Cost |
|---|---|
| Chevrolet Impala | $ 64.00 |
| American Motors Ambassador | 61.35 |
| Mercedes 220 | 26.00 |
| Ford Pinto | 69.40 |
| Dodge Colt | 71.70 |

In his statement, Haddon said that even in 5 mile per hour rear-into-barrier crashes, results of which were given to the committee in Institute testimony on March 10, 1971, these models met the requirements of the standard for 1973 models:

| 1971 Models | Estimated Repair Cost |
|---|---|
| Plymouth Fury I | $266.35 |
| Plymouth Satellite | 256.35 |
| Pontiac Firebird | 262.60 |
| Buick Skylark | 226.85 |
| Mercury Montego | 267.35 |
| Mercedes 220 | 194.50 |

He said that in examining results of 5 mile per hour rear-into-barrier tests conducted on 1970 models a year ago, six of 12 tested models also apparently met the standard's requirements at twice the crash speed specified in the rule:

| 1970 Models | Estimated Repair Cost |
|---|---|
| Toyota Corona | $ 69.30 |
| Ford Maverick | 204.75 |
| AMC Hornet | 193.85 |
| Ford Mustang | 147.05 |
| Plymouth Barracuda | 197.10 |
| AMC Javelin | 132.40 |

Even two of four tested 1969 models similarly met the standard's rear-into-barrier requirements in the Institute's first round of 5 mile per hour crash tests: the 1969 Ford Galaxie, which sustained $173.70 in estimated damage costs, and the 1969 Plymouth Fury, which sustained $134.40 in estimated damage costs.

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# 1971 LOW SPEED CRASH TEST RESULTS
Insurance Institute for Highway Safety

| | | 5 MPH FRONT/ BARRIER | 5 MPH REAR/ BARRIER | 10 MPH FRONT/ BARRIER | 10 MPH FRONT/ REAR* | 10 MPH FRONT/ SIDE** | 15 MPH FRONT/ BARRIER |
|---|---|---|---|---|---|---|---|
| SEDANS | Chevrolet Impala | 367.90 | 447.00 | 828.50 | 280.50<br>221.05 | 328.85<br>375.30 | 1,170.50 |
| | Ford Galaxie | 341.20 | 318.55 | 781.50 | 248.15<br>469.60 | 241.00<br>439.35 | 1,207.45 |
| | Plymouth Fury | 202.25 | 266.35 | 633.50 | 201.85<br>246.80 | 247.10<br>306.55 | 870.65 |
| | AMC Ambassador | 415.40 | 285.20 | 699.25 | 256.30<br>141.35 | 233.25<br>379.65 | 1,206.98 |
| SMALL CARS | Volkswagen | 130.75 | 59.05 | 347.85 | 81.10<br>181.75 | 126.35<br>227.45 | 615.20 |
| | Chevrolet Vega | 181.30 | 228.45 | 439.05 | 276.55<br>244.60 | 191.05<br>195.90 | 785.60 |
| | Ford Pinto | 164.20 | 210.00 | 535.79 | 183.35<br>196.10 | 151.90<br>244.15 | 816.34 |
| | AMC Gremlin | 121.30 | 286.90 | 576.92 | 253.95<br>137.65 | 172.00<br>329.65 | 830.06 |
| INTERMEDIATES | Pontiac Firebird | 229.00 | 262.60 | 915.25 | 77.00<br>385.60 | 55.40<br>458.70 | 1,142.45 |
| | Buick Skylark | 427.10 | 226.85 | 880.80 | 305.75<br>190.70 | 354.00<br>174.50 | 1,025.80 |
| | Mercury Montego | 402.11 | 267.35 | 752.49 | 171.50<br>469.13 | 98.85<br>729.50 | 821.90 |
| | Plymouth Satellite | 98.45 | 256.35 | 289.10 | 161.35<br>241.65 | 120.95<br>523.25 | 729.45 |

*In the front-to-rear crashes, the price listed first for each car model is the estimated repair cost for the striking car (front-end damage); listed second is the estimated repair cost for the struck car (rear-end damage).

**In the front-to-side crashes, the price listed first for each model is the estimated repair cost for the striking car (front-end damage); listed second is the estimated repair cost for the struck car (side damage).

## 10, 15 MPH CRASH TEST RESULTS:

Haddon linked his testimony on the newly issued DOT standard to release of results of the Institute's latest two series of low speed crash tests in its regular test program — front-into-barrier tests at 10 and 15 miles per hour. "The damage done to these 1971 models far surpasses, on the whole, that which we grew accustomed to seeing in our 1969 and 1970 model tests at these jogging and sprinting speeds," Haddon said.

He pointed out that in previous years' tests the repair estimates were based on a labor rate of $7.00 per hour while the 1971 estimates reflect increased labor costs by using a rate of $8.00 per hour — "still far below the rate charged in many parts of the country today."

Haddon said in his prepared text that the increased repair estimates following the 1971 barrier crash tests at 10 and 15 miles per hour "cannot be accounted for by the increase in the cost of labor" alone but are "directly attributable to the increased costs of crash replacement parts and, more significantly, to the increased delicateness designed and built into the cars we have tested — a delicateness which has the potential for generating even larger crash parts sales than did the tested 1970 models."

He pointed out that only one of 12 models tested in 1970 — the Chevrolet Camaro "pony car" — sustained more than $1,000 in estimated damage in its 15 mile per hour front-into-barrier test, but that in the 1971 tests:

- Five of the 12 models registered more than $1,000 in repair cost estimates in the 15 mile per hour tests; and,

- Of these, two of the four family sedans exceeded $1,200 in estimated repair costs.

Even after adjusting labor costs of 1970 models to reflect the $8.00 rate used in the 1971 estimates, he said, the average repair costs following crash tests of the four sedans tested each year compared this way:

| | 1970 (Unadjusted) | 1970 (Labor Adjusted) | 1971 | Increase 1970-1971 (Adjusted) |
|---|---|---|---|---|
| Sedans, Front-into-Barrier, 10 mph | $541.56 | $564.84 | $ 735.69 | 30% |
| Sedans, ~~Rear~~ Front-into-Barrier, ~~10~~ 15 mph | $728.83 | $753.33 | $1,113.89 | 48% |

## DETROIT CONTINUES PASSIVE RESTRAINT FIGHT

Auto makers have decided to continue to fight the Department of Transportation's passive restraint rule despite earlier DOT revisions that weakened the rule. (See Status Report, Vol. 6, No. 6, March 29, 1971.)

In addition, they are objecting to aspects of DOT's "interim rule" requiring warning devices that activate when lap belts are not fastened while the ignition is "on" and the vehicle is in any forward or reverse gear — the so-called "forced action" approach.

DOT is considering the manufacturers' latest petitions to further soften the passive restraint and "interim" rule (FMVSS 208).

Meanwhile, American Motors Corporation, Chrysler Corporation and Ford Motor Company have asked the Sixth Circuit U.S. Court of Appeals in Cincinnati, Ohio, to hear their case against the rule.

The requests for judicial review do not enumerate the manufacturers' grievances against the rule. General Motors Corporation is waiting to see what action DOT takes on the company's latest petition before it decides whether to go to court over the rule, according to a GM spokesman.

Under the federal rulemaking process, manufacturers, or any other interested party, may petition DOT for changes once a rule is issued. The passive restraint rule was first issued Nov. 3, 1970. Acting on petitions from auto makers, DOT issued a revised, much softened rule in March.

Because of uncertainties over the deadline by which manufacturers must seek judicial review of a rule, three have chosen to go to court now rather than wait until administrative action is taken by DOT on their current petitions.

In its petition, Chrysler asked DOT, among other things, to limit crash protection requirements to head-on crashes and "withdraw the remainder of the requirements" for passive protection, scheduled to become effective more than four years from now — Aug. 15, 1975, in other types of crashes.

Chrysler claims that "there still remain many complex technical problems which must be resolved before passive restraint systems can realistically be considered for incorporation in vehicles on a mass production basis."

The company says it is "unable to predict when the rapidly changing state of the art will reasonably allow the establishment of an effective date" for a passive restraint standard.

American Motors has gone even further, requesting that "requirements relating to vehicles manufactured on and after Aug. 15, 1973, be withdrawn . . . ."

All four of the major American auto makers are seeking changes in

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## PASSIVE RESTRAINTS DEFINED

The safety administration has defined a passive restraint system as one "that requires no action (by an occupant) other than would be required if the protective system were not present in the vehicle."

This definition, recently published in the Federal Register (Vol. 36, No. 89, page 8296), precludes use of "forced action" devices, such as a seat belt "interlock" system which prevents the vehicle ignition from functioning until seat belts are fastened, to satisfy DOT passive restraint requirements.

The terms "passive" and the opposite, "active," used to indicate whether given approaches to reducing human damage from environmental hazards require the cooperation of those to be protected were first coined and described in a scientific paper presented in 1961. (Haddon, W., Jr., and Goddard, J. L., "An Analysis of Highway Safety Strategies," in Passenger Car Design and Highway Safety, proceedings of a conference, Association for the Aid of Crippled Children and Consumers Union, 1962.)

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"interim" requirements for devices that warn when seat belts (required on 1972-1975 model cars) are not fastened.

GM, American Motors and Chrysler continue to contend that rollover protection should not be required since, they say, they are unaware of any rollover test that gives repeatable results. They are also seeking changes in test dummy and injury criteria specifications.

## CAR SPEED CONTROLS: THE GENERATIONS SPLIT

The younger generation and the older have taken sharply opposing sides on whether the top speed capability of cars should be limited by the federal government — with the younger favoring a limit and the older against it.

For DOT Secretary John Volpe, the generation gap that exists over the important safety issue of built-in speed limits for cars is particularly crucial, since the gap has emerged between two official groups that advise the secretary on safety policy matters.

Representing the older generation is the National Motor Vehicle Safety Advisory Council, a presidentially-appointed body which the Secretary of Transportation is mandated to "consult with . . . on motor vehicle safety standards" under the 1966 Motor Vehicle Safety Act.

At a recent meeting, the 22-member advisory council took a look at DOT's proposal to require that cars be built to go no faster than 95 miles per hour and be equipped with audible and visible warning systems that operate above 85 miles per hour. (See Status Report, Vol. 5, No. 22, Dec. 15, 1970.) After a brief discussion, the council decided it didn't like the idea so it sent Secretary Volpe a resolution condemning it.

The resolution says, among other things, that the "most realistic productive approach to speed control is driver control," the number of "accidents occuring at speeds over 85 miles per hour are insignificant when compared with the total number of accidents," auto speed ceilings are "now being effectively limited by emissions' control development," and built-in speed controls would obstruct "future improvements in engine, suspensions, braking, and aerodynamic design."

The council cited no evidence in support of these statements, nor did it make mention of a well-documented point that DOT has regularly stressed in support of its proposal — namely, that severity of injury increases dramatically in crashes at higher speeds.

Representing the younger generation is YOUTHS, a 15-member advisory group created on Jan. 30, 1971, by Secretary Volpe to, in his words, "be a creative and effective force in combating the slaughter on our highways."

A few days after the elders' advisory council urged DOT to drop its car speed control proposal, YOUTHS conducted a day-long hearing on the issue, during which it took testimony from government and outside experts on both sides of the question. At the conclusion of its meeting, YOUTHS voted to support the DOT proposal. In a letter to NHTSA Acting Administrator Douglas Toms, YOUTHS Chairman Joel Benoliel said the group was "particularly appalled to learn" at the hearing that most cars made today "have speed capabilities well over 100 miles per hour," but despite this the newest portions of the Interstate system are designed for a "maximum crash of 50 miles per hour" and other Federal-aid highways are designed "for only an 11 mile per hour crash." They also found, he said, that even under the latest Federal vehicle safety standard, cars are "designed for only 30 mile per hour crashes and . . . the best that technology can produce in the foreseeable future, the experimental safety vehicle, is limited to crashes below 60 miles per hour."

"Clearly," the letter told Toms, "effective countermeasures are needed. We know that an increase in the traditional speed law enforcement is expensive and is not always effective . . . . Speed-limited vehicles is one promising countermeasure which should not be discarded."

The letter concluded with a resolution "supporting the speed warning and control standard."

**APPROPRIATION HEARINGS OPENED** — The Transportation subcommittee of the House Appropriations Committee has begun hearings on the 1972 fiscal year budget request of the National Highway Traffic Safety Administration.

Comments on the budget (see Status Report, Vol. 6, No. 4, March 1, 1971) should be sent to Rep. John J. McFall, Cahirman, Transportation Appropriations Subcommittee, Room 2346, Rayburn House Office Building, Washington, D. C. 20515, prior to May 25, 1971.

**NOTICE**

A questionnaire was sent recently to all mail list recipients of Status Report as part of a program to computerize the mail list for swifter, more efficient handling. The covering letter stated that the return envelope was pre-stamped. However, through error, the envelopes were not pre-stamped. We regret the error.

To receive future issues of Status Report, the questionnaire must be filled out and returned promptly. If you have not yet received the questionnaire, please contact us and we will forward one immediately.



INSURANCE INSTITUTE for HIGHWAY SAFETY

WATERGATE SIX HUNDRED
600 NEW HAMPSHIRE AVENUE, N.W. • WASHINGTON, D. C. 20037

(AREA CODE 202-333-0770)

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