

Head Restraints' Worth Confirmed

A forthcoming report on the effectiveness of head restraints — anti-whiplash devices mandated by the federal government on new cars since the late 1960's — states they have been associated with significant reductions in claimed neck and back injuries for drivers of forward cars in two-car "rear-enders."

According to the study, these reductions have been achieved despite the observed fact that only very small numbers of drivers are driving with adjustable-type head restraints in the proper position — directly behind the head — to provide protection from whiplash.

Noting that the number of whiplash injuries occurring each year in the United States may be "considerably in excess of 1,000,000," the study concludes that, although the reductions already achieved are "encouraging," the "nationwide epidemic of neck injuries in rear-end collisions has been only partially abated" and "promises to remain of great severity until approached far more vigorously."

The study, scheduled to be presented at the annual meeting of the American Public Health Association in Minneapolis, Minn., Oct. 11-15, was co-authored by Brian O'Neill, senior statistician for the Insurance Institute for Highway Safety; William Haddon, Jr., M.D., Institute president, who was federal highway safety chief when the head restraint rule was issued in 1968; Albert B. Kelley, Institute communications vice president, and Wayne W. Sorenson, assistant vice president, research, State Farm Mutual Insurance Company.

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The principal findings of the study — believed to be the first reported field measurement of head restraint effectiveness — are as follows:

- Surveyed insurance claims showed that in the absence of head restraints almost one out of every three front-into-rear crashes resulted in a whiplash claim. With head

restraints there was an overall 18 per cent reduction in claimed whiplash injuries to drivers. For females in the group the reduction was 22 per cent. Males showed a considerably smaller percentage reduction.

- Of male drivers observed in Los Angeles, 74 per cent had their adjustable head restraints improperly positioned behind their heads. Of female drivers observed there, 57 per cent had the adjustable restraints improperly positioned. For Washington, D. C., the figures for males were 93 per cent improperly positioned; for females, 80 per cent.

- The surveyed insurance claims indicated a higher incidence of whiplash injuries among female drivers than among male drivers, complementing findings of earlier research in this area. Of the various physiological possibilities that might account for such a difference in susceptibility to whiplash, "none . . . has been sufficiently investigated, and most have not been touched scientifically," the study says.

The report's findings of head restraint effectiveness against whiplash are based on 67, 143 insurance claims including 6, 833 cars struck from the rear. Its head restraint positioning conclusions are based on observations of 4, 983 drivers in Los Angeles and Washington, D. C.

The federal standard (FMVSS 202) requiring head restraints was issued in 1968 by the U. S. Department of Transportation to take effect on vehicles manufactured after Dec. 31, 1968, for sale in the United States. The study notes that, although head restraints had been subject to human-volunteer simulated crash testing prior to issuance of the standard, "this injury-reduction countermeasure had been subjected to no field testing of the sort prerequisite in public health work; i. e., the kind conducted for poliomyelitis vaccine prior to its universal introduction. Nor since that time have any field tests been reported by government, automobile manufacturers or others."

Noting that the bulk of adjustable head restraints seen during the Los Angeles-Washington observations were improperly positioned, the study warns that "an adjustable head restraint if left in its lowest position actually may increase the chances of severe whiplash injuries by acting as a fulcrum for the head, especially for taller people

"And, unless designed properly, adjustable head restraints above their lowest positions may produce injury to both front and rear vehicle occupants who in crashes strike metal supports that have been left exposed by inept design. Examples of this design error — one not precluded by the federal standard issued in 1968 — are commonplace among cars produced in recent years."

Since "substantial numbers of vehicles with adjustable rather than fixed-type head restraints will remain on the road for a period lasting more than a decade," the study concludes that there will continue to be a public need "not only for information about the protective function that head restraints are intended to serve, but — particularly urgent in light of the possibilities for injury production by improperly positioned restraints — their correct adjustment."

Finally, the study says, much more needs to be learned about "virtually all aspects both of whiplash injury production and, especially, of the efficacy of various classes of injury-reduction approaches," including restraints that deploy when needed and techniques to accommodate out-of-position occupants and those in vehicles hit other than directly from the rear.

Single copies of the report, in preliminary form, are available on request from: "Head Restraints," Insurance Institute for Highway Safety, Suite 300, Watergate Six Hundred, Washington, D. C. 20037.

Nader Hits Small Car Effort, Raps VW...

Attorney Ralph Nader has called upon the National Highway Traffic Safety Administration to review its motor vehicle safety standards "to determine if they provide sufficient protection to passengers of small cars."

In a recently released report critical of the Volkswagen Beetle and Microbus Nader specifically urged upgrading of performance standards governing seat anchorages (FMVSS 207), door hinges and latches (FMVSS 206) and fuel systems (FMVSS 301).

The report claims that the safety administration's rulemaking efforts "went into limbo" after "initially progressive forays" during the 1968 and 1969 model years required safety belts, energy absorbing steering assemblies, laminated windshields and head restraints.

"Usually the manufacturers of small foreign cars are in the forefront of the resistance to incorporation of safety features . . .," the report claims. NHTSA has yielded to such pressure by writing "safety standards which cater to the lowest common denominator in the automotive industry," the report charges.

The report brands the Volkswagen Beetle "the most hazardous car currently in use in significant numbers in the United States" and demands that all Beetles be recalled in a \$184 million campaign to correct safety deficiencies.

The 200-page report lists six alleged safety defects on the German-made compact which, it says, VW has an "obligation" to correct, including deficiencies in seat tracks, seat backs, door latches, the fuel system, wheel rims and handling characteristics. Nader also insists that VW retrofit seat belts and shoulder harnesses "free of charge" in all Beetles manufactured before the devices were required by federal standard.

The report notes that, in addition to specific problems in the VW Beetle, "All known studies relating car size to crash injury conclude that occupants of smaller cars run a higher risk of serious or fatal injury than occupants of larger cars."

VW should also "recall all Type II (Microbus) vehicles and reimburse each owner for the present retail value of his bus," the report says, claiming that the box-like vehicle's lack of crush distance, high center of gravity, lack of stability in crosswinds and lack of adequate accelerating ability would cost more to correct than the value of the vehicle.

During a press conference Nader said that all of the alleged defects on the Beetle could have been avoided in production had VW employed technology that "has been well known for some time." He claimed that would have cost VW about \$20 extra per car, compared to an average of about \$60 per car that would now be required to correct the deficiencies on the 3 million or more Beetles now on U.S. roads.

Further information on the report may be obtained from the Center for Auto Safety, Box 7250, Ben Franklin Station, Washington, D.C. 20004.

...Sees Defects in Defect Probing

Nader also has threatened to take the NHTSA to court if the agency continues what Nader described as withholding "factual information about vehicle safety defects" from the consuming public.

Nader's threat came in a 25-page letter to Safety Administrator Douglas Toms, in which he itemized 13 safety defect investigations he said are not being sufficiently pursued (see box). The letter stressed basic policy questions Nader said a team of his investigators discovered during a three-month study of automobile defects and the federal government's role in investigating them. He specifically charged that:

- Some of the information gathered by his investigators was not made available until the NHTSA was challenged under the Freedom of Information Act and that even then it was discovered that the agency was avoiding disclosure of some of its defect investigations through "a new scheme" of classifying them as "candidate" investigations.

- When files of completed investigations were opened under the Freedom of Information Act they were found to be "in disarray" and lacked "information that should have been included" such as indices of contents and staff memoranda.

Nader said in his letter that "a major written request" for adding "obviously pertinent but missing material to the files, along with more than a dozen other requests . . . on procedural issues, have gone without formal reply."

- In "virtually none" of the files of concluded investigations was there "any explanation as to why they were closed nor any supporting material for this decision. In the overwhelming majority of cases, the files were closed without there being a recommendation for a defect notification."

- When an investigation is closed, a press release is issued only if a defect is found to exist: "When the agency concludes that there is no defect, it avoids the

Nader Alleges 13 Safety Defects

Nader's criticism of the safety administration's defect investigation policies accompanied a list of 13 auto defects which, he said, "are potentially affecting millions of American cars." Only one of those 13 is currently the subject of an NHTSA investigation. The list of alleged defects includes:

1. Chevrolet -- Engine Mounts, 1966-69 models, (1969 models are currently under NHTSA investigation)
2. Chevrolet Corvair -- Clutch Cable, 1965-66 models
3. Pontiac, Chevrolet, Buick and Oldsmobile -- Rochester Quadrajel Carburetors, 1966 models
4. Chevrolet Vega -- Dash Panel Flammability, 1971 model
5. GM Full Size Model Cars -- Power Braking Systems, 1967-70 models
6. Mercury Capri -- Engine Fires, 1971 model
7. Full Size Ford -- Hood Latch, 1970 model
8. Plymouth, Dodge and Chrysler -- Brake Drum, 1967-71 models
9. Fireball Industries, "Castaway 18.5 Motorhome" -- Spare wheels' size does not correspond with size of "running" wheels

The remaining four on his list were more general in nature: that many late model cars should be investigated for side windows that "explode"; that wheel failures were occurring on "a cross section of cars and trucks"; that energy-absorbing steering columns were failing in many 1969 and 1970 models, and that fuel tanks were allowing gasoline to leak or spill in "a number of different makes and models."

responsibility of conveying any rationale for its action. Thus the owners of these possibly defective vehicles are left not knowing whether the defect was found but not considered safety-related, or whether no defect was found. They may even be under the impression that the investigation is continuing. "

- Manufacturers of the vehicles being investigated, however, are kept abreast of investigations since they are "routinely required to provide the information to the NHTSA for these ongoing investigations. "

Additionally, "Closed defect investigation files which we inspected were virtually one-dimensional in that they seemed to rely almost solely on the unchallenged statements and tests of the manufacturer of the supposedly defective car. "

- Defect investigations "frequently drag on for many months or even years" so that in many cases "it seems probable that most of the defective cars will self-destruct before the NHTSA reaches a conclusion of its investigation. "

Pre-Arrest Testing Now Allowed in Seven States

Seven states now have laws that permit — to one degree or another — police to administer tests for blood-alcohol content of motorists before deciding whether or not to arrest them for drunken driving.

The seven states are Indiana, Maine, Minnesota, Nebraska, New York, North Dakota and Virginia. In most cases the laws are designed to strengthen a policeman's case for making an arrest under drunk driving laws and are not designed to produce evidence usable in court against the accused driver.

While pre-arrest testing provisions in most cases were enacted as amendments to "implied consent" laws, the two govern separate and distinct aspects.

Pre-arrest tests permit police to gather test results before arrest in order to provide the arresting officer with "probable cause" for making the arrest. The results of such tests, however, are not normally usable as evidence in court to prosecute drunk driving charges.

Results of an "implied consent" test (in most states permitted only after an arrest on a drunk driving charge) can be used as courtroom evidence. "Implied consent" laws are based on the theory that persons who hold driving licenses thereby "imply" their "consent" to testing of their blood, breath and urine for blood-alcohol content.

In the seven states where pre-arrest testing is now permitted the provisions vary in the conditions under which it is permitted, the uses to which test results can be put and the penalties provided for refusal to submit to such testing.

NEW YORK: In 1969 New York became the first state to enact a pre-arrest testing statute, but it was not widely applied because of constitutional questions. It has now been amended. The law permits pre-arrest testing of drivers involved in traffic violations or crashes. Those who refuse the pre-arrest test are subject to fines of up to \$50 and/or up to 15 days in prison.

Results of this pre-arrest test cannot be used to prosecute a drunk driving charge but can be used to subject a driver to another pre-arrest test under the state's "implied consent" law. Results of the "implied consent" test — even though administered before arrest — are usable as evidence in court.

MAINE: This law was patterned after New York's and is almost identical in wording. Evidence collected in a pre-arrest test cannot be used for a drunk driving conviction in court but can only be used to provide a policeman "probable cause" — in other words, sufficient grounds to make an arrest. A driver involved in a crash or traffic violation who refuses the pre-arrest test is subject to a fine of from \$10 to \$100 and a sentence of up to 90 days.

Maine's "implied consent" law, however, varies widely from New York's in that it does not permit "implied consent" testing (for evidence usable in drunk driving prosecutions) until after a driver is placed under arrest.

NORTH DAKOTA: Police are permitted to administer pre-arrest tests on any driver suspected of being intoxicated and involved in a crash that results in a death or an injury requiring hospitalization. Refusal to take the test can result in up to six months' revocation of the driver's license. Results of the pre-arrest test cannot be used as evidence for prosecution of a drunk driving charge but only as evidence of "probable cause" to place the driver under arrest. (For additional details see Status Report, Vol. 6, No. 6, March 29, 1971.)

INDIANA and NEBRASKA: In both states a pre-arrest test may be administered only if the officer has probable cause to believe the driver is under the influence of intoxicants — the same grounds that permit the officer to place the driver under arrest. Additionally, Nebraska's law permits an officer to request a pre-arrest breath test of any driver he has probable cause to believe has been involved in a crash or traffic violation, whether or not he has similar cause to believe the driver is intoxicated.

Maximum penalty for refusing the pre-arrest test in Indiana is a one-year license suspension, and in Nebraska a fine of from \$50 to \$100. In both states the results of the pre-arrest tests may be used as evidence in prosecuting a drunk driving charge.

MINNESOTA: Statutes governing pre-arrest testing for alcohol come in two parts. One permits pre-arrest breath testing upon reasonable suspicion that a driver is under the influence of intoxicants. Refusal to take this test can result in license revocation of six months. As in most states, results of the test cannot be used in court as evidence for drunk driving prosecution; they can only be used to provide grounds for an arrest — or to bring the driver under the provisions of Minnesota's "implied consent" statute.

As in New York, police in Minnesota may administer an "implied consent" test before placing the driver under arrest but must first have the same grounds they would have to have to arrest the driver — for instance, the results of a non-evidentiary pre-arrest test. Moreover, the pre-arrest "implied consent" test can only be administered if the driver also has been in a crash resulting in death, injury or property damage.

Minnesota permits yet another variation: A driver who has refused a non-evidence pre-arrest test and thereby subjected himself to a possible six months' license revocation may then be requested to take an "implied consent" test, the results of which can be used against him in court on a drunk driving charge. If he also refuses this "implied consent" test he may lose his license for yet a second six-month period.

VIRGINIA: In Virginia, pre-arrest testing provisions are weakest of all. They provide only that a driver may request a test and that, if he does, the results

can be used to provide grounds for arrest but not as evidence in a drunk driving prosecution. Since an officer cannot request that a driver submit to a pre-arrest test the law provides no penalties for drivers who refuse the test.

Rosenstein Joins IIHS

Dr. Laurence S. Rosenstein, a biophysicist, has joined the research staff of the Insurance Institute for Highway Safety.

Rosenstein holds degrees in bio- and mechanical engineering from Drexel University, and a doctorate in bioengineering from the University of Cincinnati. Prior to joining the Institute he headed the bioengineering unit in the Toxicologic Studies Section of the U. S. Environmental Protection Agency.

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