

Adequacy Of Inertia Belt Reels Questioned

Two recent studies have raised serious questions about the performance of "inertia reels" – the automatic adjusting and locking mechanisms used on safety belts. In one study, researchers from England's University of Birmingham conducted in-depth investigations of 108 front seat occupants who were wearing shoulder belts during crashes. The other consisted of laboratory tests conducted by the U.S. Department of Transportation.

Inertia reels are designed to allow freedom of upper torso movement for vehicle occupants under noncrash conditions, but should lock to restrain belt users under potentially hazardous deceleration forces. Inertia reels also have a retracting feature that eliminates belt slack.

Three types of inertia reel systems are in general use. The first is "webbing sensitive," which is activated when the safety belt webbing moves out of the mechanism at a set rate of speed. The second is "vehicle sensitive," which is activated by the vehicle coming to an abrupt stop. The third type is a combination of the first two. Most U.S. cars with inertia reels are equipped with vehicle sensitive devices. Upper torso belts not using inertia systems must be manually adjusted. (Some manually adjusted belt systems have incorporated non-inertia reel locking retractors for the lap belt portion of the system. These lap belts adjust automatically to the wearer but do not allow freedom of movement.)

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The 108 occupants studied by the British researchers included 80 cases in which manually adjusted belts were used. Of these 80, there were five cases in which the belt broke and four cases in which there was serious injury due to excessive slack in the belt. However, in the cases studied in which occupants were restrained with inertia reel belts, the researchers found a higher percentage of injuries due to excessive movement of the upper torso. Of 28 cases in which inertia reels were used, there were nine cases of excessive forward movement. This demonstrated, according to the researchers, that this forward movement "is very dominantly a characteristic of inertia reel belts."

CONTACT WITH STEERING WHEEL

They also found that for the drivers studied, "face contact with the wheel is the rule, and there is a need for injury criteria to be developed to cope with this situation."

The authors maintain that their study indicates that inertia reel belts are allowing at least as much, if not more, forward movement as is observed with manually adjusted belts as presently worn. "As for those cases where the inertia reels have either locked up late or failed to lock at all it would seem that urgent consideration should be given to the adequacy of current standards and designs."

The study's authors pointed out that one of the reasons given for the use of inertia reels is that manually adjusted belts "are supposedly worn with excessive amounts of slack." They pointed out, however, that "although this may be the case," excessive slack only resulted in serious injury to four of the occupants they studied. Although inertia reels may eliminate the problem of slack, the data "suggest that in reality, inertia reels are in fact introducing more problems than they solve," they said.

Vehicle occupants are "particularly vulnerable if pre-impact braking takes place at a deceleration level below the vehicle sensitivity of the reel," they said. (For example: an occupant may be propelled forward in a vehicle compartment because the emergency braking may not be abrupt enough to activate the locking mechanisms.)

FEDERAL STANDARDS

Currently, automobiles with safety belts manufactured for sale in the United States must be equipped with inertia reel systems complying with federal motor vehicle safety standards (FMVSS 208 and 209). In May 1975, the National Highway Traffic Safety Administration held a round of hearings on its proposal that occupants be protected by passive (i.e. automatic) systems rather than the current active systems. (See *Status Report*, Vol. 10, No. 11, June 18, 1975.) One point made at these hearings is that while injury criteria (the prevention of serious injury in a variety of crash situations) are being proposed for the passive system, there are no comparable requirements for present belt systems.

Despite the negative findings, the researchers stressed "that although the field evidence appears to raise serious questions concerning the degree of protection" offered by inertia reel belt systems, the use of belts "is clearly indicated to be beneficial. The discussion is simply whether inertia reel belts, as currently designed," offer as much restraint as manually adjusted systems, and also "how the performance of belts, as a whole, can be improved."

FAA TESTS

The second recent study of inertia reels was conducted by DOT's Federal Aviation Administration for a presentation to the Society of Automotive Engineers. (Inertia reel safety belts are used in some airplanes as well as motor vehicles.)

Laboratory tests conducted by FAA tended to validate the British study. The FAA stated that "current sensing reels do not provide instantaneous restraint when the locking acceleration is reached under
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low onset conditions." The report also stated that "current test devices for inertia reels do not produce a representative acceleration onset."

This acceleration onset problem is the same as discussed in the British study. In a crash situation, an occupant may be moving at a rate that does not engage the reel locking mechanism but does displace the occupant. The FAA recommended that more research be conducted on this subject.

The British study, *Serious Trauma to Car Occupants Wearing Seat Belts*, was prepared by G.M. Mackay, P.F. Gloyns, H.R.M. Hayes, D.K. Griffiths and S.J. Rattenbury of the Accident Research Unit, Department of Transportation, University of Birmingham, England.

The FAA study, *Concepts in Safety Belt Testing*, is FAA Technical Report No. FS 75-782-120A and can be purchased from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Va., 22151.

For California Residents

Automakers Preparing Catalytic Converter Warnings

Automakers are preparing printed warnings that will alert California motorists to conditions that could lead to potentially hazardous heat build-ups in 1976 model catalytic converter equipped cars.

The warnings are being prepared at the urging of the California Air Resources Board (CARB) and will be placed on catalytic converter equipped vehicles sold in that state.

Contacted by *Status Report*, spokesmen for General Motors and American Motors said their companies have no plans to put the warnings on catalytic converter equipped vehicles sold elsewhere. A spokesman for Chrysler said that his company is still not certain whether it will even put a warning on vehicles sold in California. Although Ford plans to put warnings on the vehicles it sells in California, a Ford spokesman said his company has not decided whether to put warnings on cars sold elsewhere.

Officials at the Environmental Protection Agency and the National Highway Traffic Safety Administration say they have no plans to require or recommend the warnings nationwide.

To date, the California Air Resources Board, an agency that establishes air quality standards for the state, has approved warnings prepared by GM and Ford Motor Co.

GM's warning reads: "If engine malfunction should occur, particularly involving engine misfire or other noticeable loss of performance, do not continue to operate your vehicle in that condition but have it serviced promptly. Continued operation of your vehicle with a severe malfunction could cause the converter to overheat, with possible damage to the converter and to the vehicle." Ford's warns: "Do not continue operation of your vehicle under improper operating conditions. Exhaust system overheating could result in damage to the catalyst and vehicle. Improper operating conditions include: (1) a noticeable engine malfunction such as misfire, (2) extended idling, particularly at high engine speed." Both Ford and GM caution against parking or operating the vehicle near combustible materials.

CONDITIONAL APPROVAL

Earlier this year, CARB gave automakers conditional approval until Jan. 1, 1976, to sell catalytic converter equipped vehicles in the state with the stipulation that by the end of the year they submit "a list of all operating conditions which may lead to catalyst overheating" and provide all purchasers of vehicle

built and sold under this conditional approval with any information which may be required to be given to purchasers of similar 1976 model-year vehicles.

According to an air resources board official, the latter stipulation led to a "verbal agreement" with automakers that they would provide all purchasers of converter equipped cars with CARB-approved warnings on their sun visors.

A CARB official told *Status Report* that the board wanted to reserve final approval of the catalytic converter equipped vehicles to "allow more time to evaluate the safety problems associated with them." Tests conducted by the board's research staff have been completed and are now being evaluated, he said.

Automakers will put the warnings on sun visors of every catalytic converter equipped vehicle to be sold after Dec. 31, 1975, in the state. Those warnings will be affixed to the sun visor in such a way that they can't be removed without damaging the visor, the CARB official said.

The Insurance Institute for Highway Safety has given CARB details of two cases in which catalytic converter equipped cars used in IIHS low speed crash tests subsequently experienced overheated catalytic converters. The Institute earlier reported those cases to EPA and NHTSA. Both cases involved new 1975 GM cars — a Chevrolet Malibu and a Chevrolet Impala. (For details of Malibu incident, see *Status Report*, Vol. 10, No. 14, Aug. 14, 1975.)

In a letter to NHTSA, the Institute described the more recent incident involving a 1975 Chevrolet Impala. The car was being moved within a storage area of a contractor when it "experienced a catalytic converter overheating situation that distorted the outer shell of the converter and scorched the floor insulation of the vehicle."

GM Reveals 'Unique' Warning System

General Motors Corp. believes that a special signaling device in new cars, suggested by the Environmental Protection Agency, to warn when a catalytic converter overheats, is unnecessary because GM cars already have a built-in "unique warning system."

A submission to the National Highway Traffic Safety Administration's catalytic converter docket (75-13) explains that GM's built-in warning, "unlike other types of warning systems . . . could not be overlooked by the operator of the vehicle." GM's "unique warning to the driver" begins with "poor driveability," followed by "odor, light smoke and, subsequently, heavy smoke," it says.

GM assures the safety agency that "the warning becomes successively more obvious the further the sequence is allowed to progress by the driver. These inherent signals give adequate advance warning to occupants of any such vehicle. Any other warning system, such as a warning light, would be redundant to these inherent signals and therefore could not result in a favorable safety benefit-cost ratio."

GM did not specify what repair costs might result from reliance on its "unique" warning system. GM's submission was signed by the company's Director of Automotive Safety Engineering, David Martin.

Defect Reported In Some Plymouth Furys

The following article contains information on a reported automobile safety defect. Any person having information on situations similar to those described below is asked to notify Andrew G. Detrick, Office of Defects Investigation, National Highway Traffic Safety Administration, 400 Seventh St., S.W., Washington, D.C. 20590 and the Insurance Institute for Highway Safety, Watergate Six Hundred, Washington, D.C. 20037.

The Insurance Institute for Highway Safety has notified the federal government of a possible defect that may lead to engine compartment fires in some 1975 Plymouth Fury automobiles. The defect was brought to the Institute's attention by the Maryland State Police, which has identified or received reports of 13 such failures.

According to a letter from the Institute to James B. Gregory, head of the National Highway Traffic Safety Administration, "A hazardous condition may exist with some 1975 Plymouth Furys in which the failure of the power steering pump return hose leads to fire in the engine compartment." Of the 13 cases reported by the Maryland State Police – which operates a fleet of about 400 of the 1975 Plymouth Furys – "smoke in the engine compartment identified the failure" in seven cases, and "in the other six, fire occurred," the Institute's letter said.

The Institute told Gregory that, according to Maryland State Police information, "the smoke or fire occurred as a result of the leaking of power steering fluid onto the hot exhaust manifold." The cars typically had traveled between 5,000 and 14,000 miles when the reported failures occurred, the Institute said.

"We have not determined whether, and the extent to which, the same suspect part which has been causing problems on the Maryland State Police fleet is also on other Plymouth Furys," the Institute said. It added that according to the Maryland State Police, Chrysler Corp. representatives have provided "approximately 400 replacement hoses" for the fleet of cars.

Court Upholds Safety Act

A federal court has rejected the Ford Motor Co. attack on the constitutionality of the penalty provisions of the National Traffic and Motor Vehicle Safety Act of 1966.

In a two to one decision, a three judge panel of the U.S. District Court for the District of Columbia ruled that the penalty provisions of the vehicle safety act are "not repugnant to the due process clause" of the constitution.

Ford had brought its suit after being ordered by the National Highway Traffic Safety Administration to recall, and remedy at no charge to the owners, defective seat backs on all 1968-1969 Ford Mustangs and Mercury Cougars. NHTSA had brought its own suit seeking to enforce its order and fine Ford for failing to recall the cars.

Although the Ford suit challenged NHTSA's defect determination, the automaker's principal attack was aimed at several provisions of the Motor Vehicle and School Bus Safety Amendments of 1974 that increased NHTSA's civil penalty and defect notification powers under the 1966 vehicle safety act. (See *Status Report*, Vol. 10, No. 15, Sept. 15, 1975.)

The court rejected Ford's claim that the risk of incurring an \$800,000 civil penalty deters manufacturers from going to court to challenge allegedly erroneous NHTSA defect determinations. The court said that the 1974 amendments to the vehicle safety act "sought to deter frivolous litigation by attaching a

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cost to challenges, without substantial merit, maintained for purposes of delaying the implementation of the statutory mandate. We believe that Congress can constitutionally penalize such challenges, particularly where the public interest in safety demands prompt corrective action, as long as manufacturers can obtain an expedited hearing" by the courts on their challenge.

The Ford suit had also challenged NHTSA's authority to order manufacturers to send provisional defect notification letters to owners of the affected vehicles while a court suit attacking NHTSA's defect determination is pending. The court declined to review those provisions, since NHTSA has not ordered such a provisional notification in this case.

The court also declined to overturn the informal public proceeding that the NHTSA uses in allowing interested parties, including the affected manufacturer, to support or challenge the agency's determination of defect. Ford had claimed that manufacturers are denied due process of law since the public proceeding does not include such elements of a "full and fair hearing" as the right to subpoena and cross-examine witnesses.

Judge George L. Hart, Jr., who dissented in the decision, would have found the agency's informal hearing procedures, the provisional notification provisions and the penalty provisions of the act unconstitutional.

According to a Ford official, the automaker is "considering an appeal" of the decision. The government's suit to enforce its defect determination is proceeding as a separate action. That suit is now pending before Judge Hart.

The decision is *Ford Motor Co. v. William T. Coleman*, Civil Action 75-1340, decided Sept. 22, 1975, U.S. District Court for the District of Columbia.

NHTSA Replies To School Bus Critics

The National Highway Traffic Safety Administration has told the Congress that while it is aware of the "priority" that the public gives to safeguarding the lives of children, the agency wants to avoid setting school bus performance requirements that "exceed safety needs."

Such requirements would impose "needless financial burdens on the manufacturer, school districts, taxpayers and the nation as a whole," NHTSA said.

In letters to members of Congress who have been critical of NHTSA's standards-making pace for school buses, the agency explained, "Although cost-benefit analyses are not used as the basis for promulgating school bus regulations, cost factors can reach a point where they are counterproductive. This can result in owners retaining old buses in service or recommissioning even older buses for use that should have long since been retired." NHTSA said, however, that it "will not hesitate to impose more stringent performance requirements if the data show that such action will increase occupant safety."

The NHTSA letters came in response to Congressional criticism of its proposed school bus safety standards. Last year, the Congress, in the Motor Vehicle and School Bus Safety Amendments of 1974, directed NHTSA to issue safety standards covering such areas as interior protection for occupants, crash-worthiness of bus body and frame and fuel system integrity. NHTSA is required to issue the final standards before February 1976. (See *Status Report*, Vol. 9, No. 19, Oct. 29, 1974.)

NTSB: Upgrade Rollover Tests

The National Transportation Safety Board has again urged dynamic rollover testing of school buses by the National Highway Traffic Safety Administration. Such testing could be used to develop a safety standard requiring school buses to maintain their "structural integrity under rollover conditions in order to contain occupants and to assure that they have space to survive," NTSB said.

NTSB's latest recommendation followed its investigation of a May 1975 school bus rollover crash in Ashland, Ore. Nineteen of the bus's 20 occupants were ejected as the roof separated from the body during the crash. Of the 19 persons ejected, 3 were killed and the rest injured. In support of its recommendation, NTSB also cited the September 1971 school bus rollover crash at Monarch Pass, Colo. in which 9 of the 37 ejected bus occupants were killed. (See *Status Report*, Vol. 7, No. 10, May 22, 1972.)

At present, NHTSA has conducted only static school bus roof crush tests.

Concern about the NHTSA proposal had been expressed by Rep. John E. Moss (D-Calif.) and Rep. Les Aspin (D-Wis.) on behalf of themselves and 27 other Congressmen, and by Rep. Dominick V. Daniels (D-N.J.) and Sen. Vance Hartke (D-Ind.).

Rep. Moss, Rep. Aspin and Sen. Hartke had questioned NHTSA about several shortcomings of NHTSA's proposal that were pointed out in *Status Report*. (See *Status Report*, Vol. 10, No. 8, April 11, 1975.) Rep. Daniels had asked NHTSA to review criticism made by Physicians for Automotive Safety (PAS) and Action for Child Transportation Safety (ACTS). PAS and ACTS had issued a "report card" evaluating NHTSA's actions in ten school bus problem areas and given the agency a grade of "fail" in seven of the ten areas.

BUS BODY JOINT STRENGTH

Several Congressmen pointed out that NHTSA's proposal contained a loophole by failing to set a minimum strength requirement for materials used in bus bodies. NHTSA replied that it recognized "that manufacturers could get around this requirement by using weaker panels, however, a minimum strength specification would not solve the problem in that it would restrict design innovation and prohibit the use of materials that could improve occupant safety, such as energy absorbing plastics." The agency did not say what steps it would take to prevent manufacturers from using weaker panels.

The agency said that it was considering a dynamic or a static strength performance test "of the bus body, rather than individual joints." Such a test "may eventually provide a better measure of structural strength," NHTSA said. However, "additional research will be needed before such a performance standard can be developed."

ROLLOVER PROTECTION

The agency's rollover protection proposal "would merely institutionalize a standard now met by virtually the entire school bus manufacturing industry," several of the Congressional critics charged. The Congressmen pointed out that NHTSA ignored the agency's own report recommending a dynamic rather than a static rollover performance test be used in the standard. (The National Transportation Safety Board *Status Report*

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has recently repeated its recommendation that NHTSA establish rollover protection performance requirements, based on dynamic testing of school buses. See story on page 7.)

NHTSA said that it was "unaware of any data" showing that increasing the proposed rollover static test load "would provide any significant increase in the occupant safety level, yet the cost would undoubtedly increase tremendously. It is, no doubt, within the technological capability of our industry to design a school bus that will sustain a much greater roof load, but we do not believe the occupants would necessarily have a more survivable environment," the agency claimed. It did not explain why it decided to use a static rather than a dynamic performance test.

EMERGENCY EXITS

The adequacy of the proposed emergency exit requirement was also questioned. Several Congressmen pointed out that an NHTSA-funded study found that only a few of the six and seven year old children riding on school buses would be able to exert the 40 pound force proposed by NHTSA for operating the emergency exit door handle. Questions were also raised about why NHTSA did not propose roof escape hatches, a recommendation made in another NHTSA-funded study.

NHTSA said the "extremely short lead time" provided by the 1974 amendments "limits the design changes that manufacturers can reasonably be expected to make to meet these initial standards." The use of roof hatches would require a "major design change" and thus such a requirement is "not considered feasible to include in the present action." The proposed effective date of NHTSA's emergency exit proposal is April 1, 1976.

On the issue of the exit force requirements, NHTSA said that "since this is the maximum force permitted for release, it is very likely that manufacturers will design their mechanisms to release at a force considerably less than 40 pounds maximum to assure that they are in compliance" with the standard.

Quoted Without Comment

I read with interest your article concerning the sale of air bags on how poorly they were being received by the consumer.

I am an owner of a 1975 Cadillac which I bought with air bags; however, my local dealer didn't know about air bags, didn't recommend air bags and was very persistent that I not buy the car with air bags. I must say when General Motors doesn't want to sell something, they certainly do know how to minimize sales.

The air bags seemed to be a creditable device and well worth the investment. I thought my situation was unusual, however, a friend of mine was also interested in a new Cadillac and asked me about it. I told him to get the car with the bags. He went to a different showroom and received exactly the same commentary. The salesman in my friend's showroom then called the sales agency where I bought my car and asked them if air bags existed, and if they did, how many had been sold? The agency where I bought my car was rather large, they had sold one car with air bags: Mine.

To my knowledge, in our county with a population of over 300,000, two Cadillacs have been sold with air bags in spite of General Motors keeping this option a secret.

Ivan H. Gordon
Reading, Pennsylvania
Letter to *Motor Trend* Magazine
September 1975

UPDATE: A brief follow-up on earlier *Status Report* articles.

MOTORCYCLE HELMETS

On Sept. 11, 1975, the National Highway Traffic Safety Administration held a highway safety program sanction hearing on California's failure to require the use of motorcycle helmets in accordance with Department of Transportation requirements. (See *Status Report*, Vol. 10, No. 15, Sept. 15, 1975.) Testifying at the hearing were California state officials and several motorcycle groups. A hearing to determine whether or not sanctions should be imposed on Illinois for violation of the same DOT regulation is scheduled for September 30.

SPEED LIMITS

The Department of Transportation has completed implementation of its permanent 55 mile per hour speed limit rule by issuing the procedure that governors must follow to certify their states' compliance with the regulation. The certification procedure was issued as originally proposed when the permanent 55 mph rule went into effect on July 9, 1975. (See *Status Report*, Vol. 10, No. 13, July 30, 1975.)

AIR BRAKES

The National Highway Traffic Safety Administration has announced it will hold a public hearing to gather information on "field experience" of trucks, buses and trailers that meet the requirements of its standard for air brake systems (FMVSS 121). NHTSA has delayed implementation of the second stage of the standard – which requires more stringent stopping requirements – from Sept. 1, 1975 to Jan. 1, 1978. (See *Status Report*, Vol. 10, No. 15, Sept. 15, 1975.) The public meeting, which, according to NHTSA, will also explore the economic aspects of the standard, is scheduled for October 29 and, depending on requests for time, could run through October 31. Details on the meeting are available from Dr. Stephen Sacks, NHTSA, 400 Seventh St., S.W., Washington, D.C. 20590, who should be contacted before October 15.

Center Seeks Action On Steering Assembly Rule

The Center for Auto Safety is pressing for early upgrading of the federal safety standard on energy absorbing steering assemblies (FMVSS 203). In a petition for rulemaking filed with the National Highway Traffic Safety Administration, the center called for "immediate action" to improve the performance of energy absorbing steering assemblies.

In February of this year, NHTSA acknowledged that the current standard contained deficiencies and stated that it planned to correct them in rulemaking to begin "within the next few months." No such rulemaking has been announced, although an NHTSA official said the agency is in the final stages of preparing a new proposal to upgrade the standard. (See *Status Report*, Vol. 10, No. 9, April 28, 1975.)

NHTSA's acknowledgement of the standard's deficiencies was in response to an inquiry by Sen. Vance Hartke (D.-Ind.) concerning a study of the real-world performance of energy absorbing steering assemblies. That study, conducted at the University of Birmingham, England, reported in December 1973,

that the current standard encourages the use of designs that perform poorly in crashes. The study urged that the standard be upgraded. Similar findings were reported in June, 1974, by researchers at the Calspan Corp. who studied the performance of energy absorbing steering assemblies in U.S. cars. The center cited the Birmingham, Calspan and other studies to support its petition to improve the standard. (See story on Birmingham and Calspan studies in *Status Report*, Vol. 9, No. 15, Aug. 16, 1974.)

Energy absorbing steering assemblies are designed to absorb, in a controlled compression, the force of a driver's impact with the steering assembly, to prevent or reduce injuries by limiting the forces exerted on the driver's chest.

In August 1964, the Congress directed the General Services Administration (GSA) to establish safety standards for vehicles purchased by the U.S. government. GSA adopted such standards, including the one requiring energy absorbing steering assemblies, for 1967 model passenger cars.

In September 1966, the Congress, in establishing the National Traffic Safety Agency (one of the predecessors to the NHTSA), mandated the issuance of federal motor vehicle safety standards for all newly manufactured vehicles sold in the U.S. By statute, the "initial" standards were to be based "upon existing standards." The initial standard for energy absorbing steering assemblies was proposed in November 1966, and adopted two months later for passenger cars beginning in January 1968. The method for checking compliance was and still is based on the GSA standard.

Among the changes in the standard sought by the center's petition are provisions for:

- requiring a large padded hub on the steering wheel "to spread the impact load over a larger area" of the driver's chest;
- the testing of the steering assembly under various angular impacts, and
- extending the applicability of the standard, which currently applies only to passenger cars, to multipurpose passenger vehicles, and light trucks.

Under the requirements of the Motor Vehicle and School Bus Safety Amendments of 1974, NHTSA has 120 days to respond to the center's petition.

Automaker Cost Information Rules Proposed

The National Highway Traffic Safety Administration has proposed requirements for detailed cost information reporting requirements for manufacturers who oppose federal vehicle safety actions on cost grounds. NHTSA said such information would enable the agency to "make an informed judgment as to the validity of manufacturer's claims that actions of the agency, such as issuance of safety standards, are not practicable because of increased cost."

The Congress, in the Motor Vehicle and School Bus Safety Amendments of 1974, directed NHTSA to establish such requirements and to provide the public with an evaluation of the cost data submitted by manufacturers. (See *Status Report*, Vol. 9, No. 19, Oct. 29, 1974.)

The cost reporting rules would apply only to NHTSA actions authorized by the National Traffic and Motor Vehicle Safety Act of 1966, and not to activities authorized by the Motor Vehicle Information and Cost Savings Act of 1972. NHTSA has power under the 1972 act to order manufacturers to provide

information needed to carry out property protection bumper rulemaking. At present, however, a manufacturer is not automatically required to provide cost information when it opposes agency actions conducted solely under the 1972 act.

NHTSA proposed that cost information submitted by manufacturers be stated in terms of "incremental costs" which the agency would define as "the increased cost specifically attributable to the NHTSA action in question, adjusted so as to exclude any general increase in the cost of materials, supplied products, utilities, services, real estate, taxes, credit, or the rate of pay of employees." If a manufacturer could not calculate the exact incremental cost, it must provide calculations on the range of expected incremental costs.

A manufacturer would have to indicate whether the design it has chosen to meet the opposed requirement is the "least costly feasible method" and if it is not, the manufacturer would have to indicate the difference in cost between its method and the least costly method.

Insurance Institute for Highway Safety researchers have pointed out that cost-benefit and cost-effectiveness analyses cannot be made of a federal motor vehicle safety performance standard, but only of the particular design alternatives chosen by manufacturers to meet the performance requirements of the federal standard. It is only when it has been demonstrated that the designs chosen are cost-effective (i.e. they minimize societal costs) that cost-benefit studies can be done. (See *Status Report*, Vol. 9, No. 19, Oct. 29, 1974.)

The agency proposes that manufacturers be required to submit more detailed cost information when they oppose federal motor vehicle safety standard rulemaking activities than when they oppose other agency activities such as defect notification orders. If a manufacturer opposes several requirements of a proposed standard, it would have to provide detailed cost information on each requirement, and it would have to present cost information on each technique it is considering to meet the proposed standard.

Manufacturers opposing any NHTSA action, including safety standard rulemaking, on cost grounds would have to supply the following information:

- manufacturer's total annual incremental cost of production, including the production volume that the cost is based on;
- manufacturer's cost per vehicle or item of motor vehicle equipment including "an itemized schedule of amortization for: (i) research and development, (ii) capital and facilities, (iii) tooling, and (iv) material;"
- retail cost per vehicle or item including manufacturer's markup to dealer and dealer's markup on retail list price;
- labor cost;
- reduction in incremental costs that would occur if there were a delay in the effective date of the proposed action.

A manufacturer opposing safety standard rulemaking on cost grounds must provide, in addition to all of the above, the following:

- incremental reserve for warranty cost per vehicle;
- incremental assembly time cost per vehicle;

- incremental labor cost per vehicle;
- direct increase in weight per vehicle, by subsystem, attributable to the proposed standard and the indirect incremental weight and cost of production due to the direct weight increase (e.g. increase in suspension system caused by weight increase);
- lifetime operating cost per vehicle, including lifetime incremental costs of inspection labor, maintenance labor, parts replacement and fuel consumption;
- compliance test procedure costs for each of the alternative methods the manufacturer is considering.

NHTSA EVALUATION

NHTSA proposed that within 60 days after receipt of a manufacturer's cost information report, the agency would prepare a written evaluation of the report which will be made publicly available. However, manufacturers can request that NHTSA withhold confidential information from the public. NHTSA proposed the following definition of confidential information: "a trade secret or information not generally known to competitors which, if known, would be competitively harmful."

Comments on the proposal should be sent by October 25 to: Docket 75-25, Notice 1, Docket Section, National Highway Traffic Safety Administration, Room 5108, 400 Seventh St., S.W., Washington, D.C. 20590. The proposed rule was published in the Sept. 12, 1975, issue of the *Federal Register*.

Committee Rejects Model Belt Law

The National Committee on Uniform Traffic Laws and Ordinances has rejected an effort to include in the Uniform Vehicle Code a model law on mandatory safety belt use.

The 142-member committee consists of state and federal highway and motor vehicle officials, vehicle manufacturers, insurers and others. The purpose of the code is to encourage uniformity in traffic statutes from one jurisdiction to another.

The proposal to "add provisions to the Uniform Vehicle Code requiring most occupants of passenger cars to wear available lap and shoulder belts" failed by only 14 votes. In mail ballots, a majority of the members (72) voted to include the model safety belt law in the code. Changing the code, however, requires approval of 60 per cent (86) of the 142 members. Forty-six members voted against the measure. One member abstained.

Edward F. Kearney, executive director of the committee, said most police officers, automakers and insurers voted in favor of the measure. Most state legislators, traffic engineers, motor vehicle administrators, "user groups" (such as the American Automobile Association) and judges opposed it. Within the federal government, including the Department of Transportation, there were votes both favoring and opposing the model statute. A Defense Department official and several Federal Highway Administration officials voted against the measure. National Highway Traffic Safety Administration officials all voted for it, Kearney said.

Seven Motor Homes Fail Tests; Two Recalled

The National Highway Traffic Safety Administration has notified seven motor home manufacturers that their current models have failed this year's compliance tests for flammability. Two of the manufacturers have responded by recalling the models which failed the tests. In all, NHTSA tested models of 17 manufacturers this year.

Robin Hood Motor Homes and the Travoy Corp. have issued the recall notices. The five other companies which failed the tests are currently in the process of replying to "compliance information requests" issued by NHTSA. The five companies are Commander Motor Homes, F.M.C. Corp., Open Road Industries, Inc., Travco Corp. and Travel Equipment Corp.

In the test procedures, various materials used in the vehicle such as drapes, carpeting and seat cushions, are tested by independent laboratories for burn rates. If a model fails a test, the manufacturer is sent a "compliance information request." The manufacturer can then issue a recall of that model, or submit information to NHTSA questioning the validity of the test results or offering other reasons why the company should not recall its vehicles.

The flammability standard (FMVSS 302) has recently been criticized by both the National Transportation Safety Board and the National Bureau of Standards as inadequate. Criticisms of the standard have included the fact that compliance tests cover only horizontal, not vertical burn rates, and that materials may give off excessive quantities of smoke and toxic fumes, yet still comply with the standard. (See *Status Report*, Vol. 10, No. 12, July 9, 1975.)

This is the third year of the flammability testing program. In the first year, 20 domestic and foreign autos were tested. All passed. In the second year, 7 school buses and 13 motor homes were tested. All of the buses passed; 6 motor homes failed. Two of the motor home manufacturers issued recall notices that year. An NHTSA official said the other four cases were still under investigation. No final decision has yet been reached on what types of vehicles will be tested in 1976.

NHTSA Asks Comments On Electrical System Safety

The National Highway Traffic Safety Administration has published an advance notice of proposed rulemaking on vehicle electrical systems. The major purpose of this proposal is the prevention of vehicle fires.

The notice, published in the September 4 issue of the *Federal Register*, requested information and comments on major aspects of vehicle electrical systems, including how electrical systems are involved in the ignition of fires and suggestions for improving their safety performance. All submissions to NHTSA's docket on this subject (75-23; Notice 1) are due by Nov. 3, 1975.

Although the principal purpose is the prevention of fires, suggestions were also sought on how to ensure "at least partial system operation of critical safety components in the event of short circuits and/or open circuits..." and the "need for driver indicators of tail and brake light outage, and methods of installing such features."

Task Force Studying Vehicle Goals

The Department of Transportation is seeking information on the "trade-offs necessary to achieve certain levels of fuel economy, safety, environmental control and economic control in the 1980-1990 decade."

As one means of gathering such information, DOT recently announced plans for a public hearing on long-range goals for commercial vehicles.

The public hearing is one of a series being held by separate interagency task forces set up at the request of the Energy Resources Council. It asked the Secretary of Transportation "... to lead a joint task force to recommend long-range energy goals to the motor vehicle fleet that will be compatible with environmental, safety and economic objectives." Earlier meetings were held on goals for passenger cars and light trucks.

The commercial vehicle study will complement DOT's program on voluntary truck and bus fuel economy improvement which is "designed to achieve maximum energy conservation and productivity improvement in the motor carrier industry in the near term," DOT said.

The commercial vehicle goals hearing will be held on Oct. 8, 1975, beginning at 10 a.m., in Room 2230-2232, Department of Transportation, 400 Seventh St., S.W., Washington, D.C. 20590.

Persons wishing to make an oral presentation at the hearing should write to Mr. David A. Fay, TST-50, Room 5222, Trans Point Building, U.S. Department of Transportation, Washington, D.C. 20590. Written statements may also be submitted and will become part of the record.

NHTSA Issues Truck-Camper Warning

The National Highway Traffic Safety Administration has warned owners of truck-campers of the danger of carbon monoxide poisoning from the exhaust system.

NHTSA told owners of "slide-in" or "cap-type" (a cover or roof installed over the pickup body) truck-camper vehicles to inspect the exhaust system tail pipes and tail pipe connections of these recreational vehicles. NHTSA advised checking to ensure that the tail pipe length is adequate "to bring the exhaust out from under both truck and camper; and that all exhaust system connections and parts are leak proof."

NHTSA said it acted because of "reports of four deaths from carbon monoxide exhaust poisoning, caused when camper occupants were resting inside their camper units with the vehicle engine running." The cause was probably "the installation of 'slide-in' campers, or the use of 'cap' units . . . without making sure that the vehicle exhaust pipe extended out from under the truck body and its overhanging camper unit," the agency said.

NHTSA has also written letters of inquiry to the four major manufacturers of pick-up trucks — General Motors, Ford, Chrysler and International Harvester — asking for reports of any deaths from carbon monoxide poisoning in truck-campers. An NHTSA official said the recently received replies did not indicate any additional reports of carbon monoxide deaths. The defects investigation branch, however, will "follow normal procedure" and "have counsel look and decide whether NHTSA should open a formal case," he said.

An inadequate exhaust pipe can result, with any leakage in the flooring of camper or truck body, in a "lethal flow of exhaust fumes into the camper compartment," NHTSA said. (Data from a study sponsored in part by the Insurance Institute for Highway Safety showed that lack of a tail pipe, or improper positioning of one, was the "essential problem" in a study of 15 cases of carbon monoxide poisoning in non-moving vehicles. See *Status Report*, Vol. 8, No. 2, Jan. 15, 1973. An earlier study, also partly supported by IIHS, found that more than 500 Americans may die each year from carbon monoxide leakage in vehicles. See *Status Report*, Vol. 7, No. 9, May 8, 1972.)

One of the reports NHTSA received was of a recent court case in which General Motors Corp. was found liable for approximately \$700,000 in damages for the carbon monoxide deaths of three men in a camper unit affixed to a GM pickup truck. The suit charged "defective design" of a tail pipe "that discharged engine exhaust at a point beneath the approximate center of the truck bed and thus directly under the camper." (See *Status Report*, Vol. 10, No. 5, Feb. 21, 1975.)

NHTSA Delays Light-Truck Belt Rule

Responding to petitions by Chrysler and Jeep Corporations, the National Highway Traffic Safety Administration has postponed for 145 days its requirement that combination lap and shoulder safety belt systems be installed in lightweight trucks and multi-purpose vehicles manufactured after Aug. 15, 1975.

According to a new amendment to NHTSA's occupant crash protection rule (FMVSS 208), such vehicles with a gross weight rate of ten thousand pounds or less will not have to be equipped with three-point belts until Jan. 1, 1976. Currently, such vehicles are required to have lap belts only.

According to NHTSA, Chrysler and Jeep claimed that "the current economic situation may cause the continued production of 1975-model vehicles beyond August 15," at which time production on new 1976 models would normally have begun.

"Significant cost in obsolete material and in running changes would be involved in the introduction of the new three-point belt systems in vehicles which are designed to accept lap belts only," NHTSA said.

NHTSA Upgrading Child Restraint Booklet

The National Highway Traffic Safety Administration has agreed to provide up-to-date information in a supplement to its booklet, *What to Buy in Child Restraint Systems*.

Secretary of Transportation Coleman announced the decision in reply to a National Motor Vehicle Safety Advisory Council resolution calling for withdrawal of the booklet. The council said the booklet "is misleading in the light of recent developments . . . and . . . could result in parents using devices, such as folding car beds, that are now known to provide little or no protection."

Coleman said that NHTSA is "presently engaged in the process of revising Motor Vehicle Safety Standard 213, covering child auto restraint systems Upon the adoption of a revised standard, NHTSA plans to replace the current booklet, prepared in December 1971, with fully up-to-date consumer information presented in as useful a format as possible."

In the interim, Coleman said, he preferred to prepare "new information to be inserted as an additional page" rather than withdraw the booklet.

The council had also asked that the booklet be "distributed free of charge." Coleman said NHTSA would continue to "supply to the public free single copies" but the decision to establish a "bulk-order price" was made by the Government Printing Office.

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loss reduction

STATUS REPORT

Editor: Tim Ayers

Writers in this issue: Ralph Hoar, Stephen Oesch,
Lloyd Slater, Christine Whittaker

INSURANCE INSTITUTE for HIGHWAY SAFETY
WATERGATE SIX HUNDRED • WASHINGTON, D.C. 20037
(AREA CODE 202-333-0770)