

285 Road Deaths Averted In Four States With Seat Belt Use Laws

Front seat occupant fatalities in the first four states with seat belt use laws were lowered in 1985.

An Institute analysis of occupant fatalities in 1985 compared with earlier years in New York, New Jersey, Michigan, and Illinois estimated that 285 deaths were prevented during 1985 in these four states.

Most of the lives saved—178—were in New York, which is the most populous of the four states and has the longest experience with a seat belt law.

Using a variety of techniques to analyze the fatality data, Institute researchers found consistent reductions, although only those for New York were statistically

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Canada Proposes New Vehicles Be Equipped With Daytime Running Lights

The Canadian Department of Transport has proposed a final rule requiring new vehicles manufactured after Sept. 1, 1988, to be equipped with automatically activated daytime running lights.

Under the proposed rule change, the lights must be automatically lit whenever the engine is running and the nighttime headlights are not activated. The lights are also expected to operate independently of other vehicle lights, the proposed rule states.

In response to a petition filed by the Insurance Institute for Highway Safety, the National Highway Traffic Safety Administration (NHTSA) is considering making provision to permit the use of daytime running lights, which are currently prohibited in some states in this country. (See *Status Report*, Vol. 21, No. 1, Feb. 1, 1986.)

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Hazardous Materials Regulations: 'Inadequate And Needlessly Confusing'

Current regulations governing highway transport of hazardous materials are "inadequate and needlessly confusing," the Insurance Institute for Highway Safety says.

In a recent hearing before three subcommittees of the U.S. House of Representatives, Ian Jones, director of engineering research for the Institute, called for special driver certification, an annual inspection program that includes a stopping distance requirement, and installation of tachographs on all trucks hauling hazardous materials.

The hearing was held before the three subcommittees to consider trucking legislation sponsored by Rep. Timothy Wirth, Colorado Democrat, who contends not enough is being done to protect the public from hazar-

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285 Road Deaths Averted With Seat Belt Use Laws

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significant. Monthly fatality data for front seat occupants of passenger vehicles covered by the laws in the four states were compared with those from eight states in the same geographic areas without belt use laws. The percentage reductions in the four states varied, with reductions of 16 percent in New York, 10 percent in Michigan, 5 percent in Illinois, and 6 percent in New Jersey.

The researchers report that the pattern of these reductions is consistent with observed changes in belt use since the laws became effective. During the postlaw periods studied, use rates averaged about 52 percent in New York; they were about 12 percent before the law. In New Jersey, Illinois, and Michigan, belt use averaged about 17-20 percent before and 42-50 percent after the laws took effect.

The effectiveness of seat belt laws depends on many factors including motorists' perceptions of the chances of being caught unbuckled. New York's law was the nation's first and has the strongest enforcement provisions—motorists can be stopped and cited solely for a seat belt violation. In the other three states, the law is enforceable only after a motorist has been stopped for another traffic violation.

Estimates based on the known effectiveness of belts coupled with the observed use rates in daily traffic would have predicted somewhat larger drops in fatalities.

“This success is related directly to the level of compliance with the laws, and states should consider methods of enforcing and publicizing their laws to achieve maximum compliance.”

However, the researchers noted that predicted reductions based on observed belt use in traffic indicate the maximum potential reductions and often exceed those actually observed because belt use in crashes is lower than in daily traffic. (See *Status Report*, Vol. 21, No. 4, April 12, 1986.)

The researchers concluded that belt use laws will save lives but that the states differ in their degree of success with the laws: “This success is related directly to the level of compliance with the laws, and states should consider methods of enforcing and publicizing their laws to achieve maximum compliance.”

For copies of the report, “Motor Vehicle Occupant Fatalities in Four States with Seat Belt Use Laws” by Adrian K. Lund, Paul Zador, and Jessica Pollner, write: Publications, Insurance Institute for Highway Safety, Watergate 600, Washington, D.C. 20037.

NHTSA Releases Crash Test Results For Ten 1986 Cars

The Toyota Celica two-door had the best driver and passenger head injury scores among the 1986 subcompact cars tested thus far in the National Highway Traffic Safety Administration's New Car Assessment Program (NCAP). Its score, in fact, was better than any of the seven 1985 model subcompacts tested. (See *Status Report*, Vol. 21, No. 4, April 12, 1986, for a detailed review of NCAP tests.)

Although better than many 1985 subcompacts, results for the 1986 Honda Accord four-door and the Volkswagen Scirocco two-door hatchback indicate relatively high risk of driver head injury.

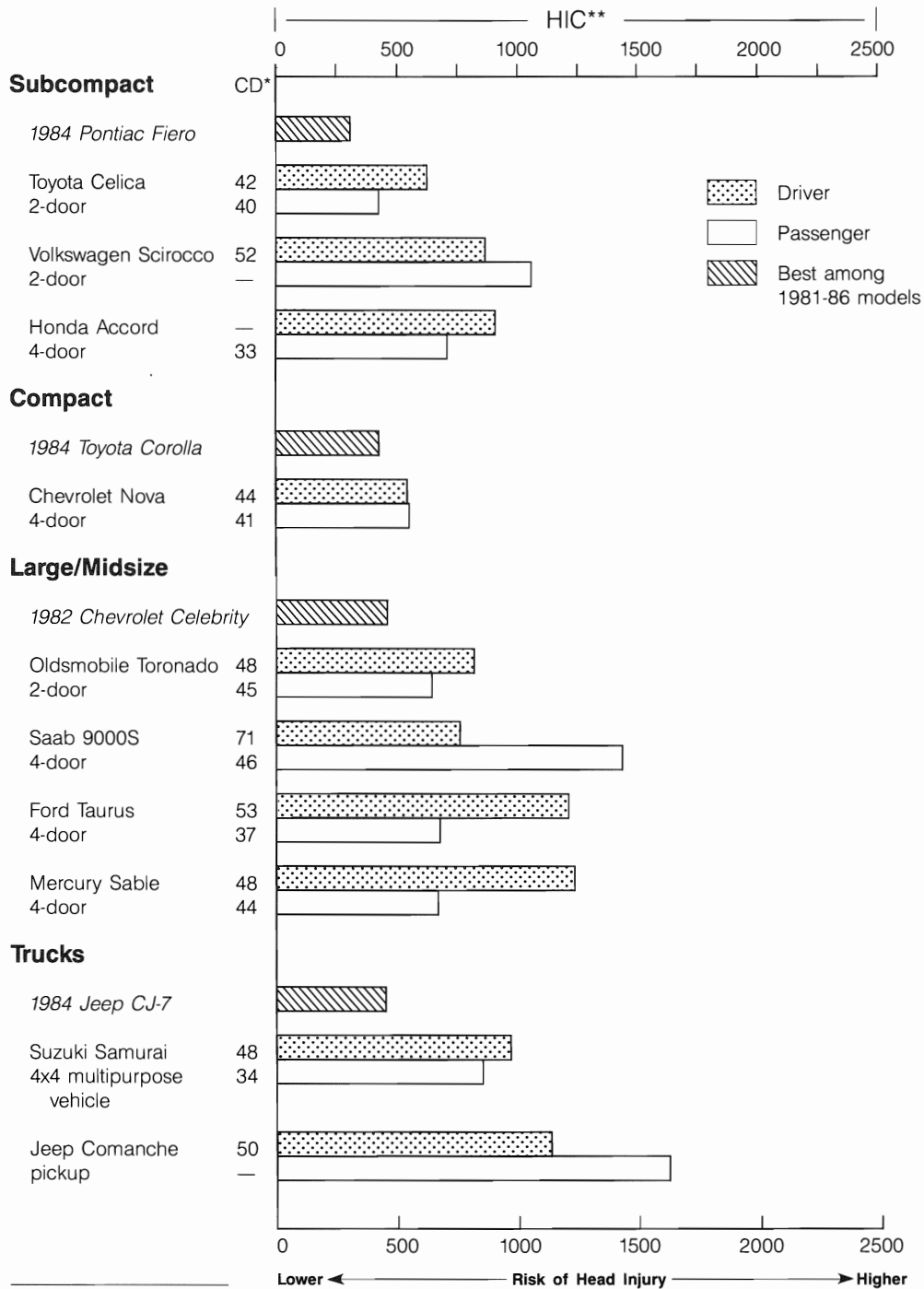
Both driver and passenger scores for the only compact tested in the recent series, the Chevrolet Nova, were among the best achieved by compact cars in any model year.

The large/midsize models in the recent test series, however, did not offer consistently good occupant protection in the NCAP 35 mph crashes. The Saab 9000S four-door hatchback had a driver head injury score that was about average for the previously tested 1986 models in this size class, but the passenger score indicated a relatively high risk of head injury. The opposite was true for the new Ford corporate twins — Ford Taurus and Mercury Sable four-door models. Both had high driver head injury scores, but their passenger scores were much better. The driver head injury score for the Oldsmobile Toronado was also about average, and the passenger score was among the best for large/midsize cars. The Saab's chest deceleration measure also indicated a high risk of chest injury for the driver.

The Jeep Comanche pickup had a very high passenger head injury score. The Suzuki Samurai four-door, four-wheel drive, utility vehicle's driver and passenger scores indicate a relatively high level of risk of head injury. In addition, the Suzuki Samurai is the only 1986 model tested that failed the windshield intrusion requirement under federal standard 219. Analysis of the crash test indicates that the corner of the hood penetrated the windshield by an inch. Of the 18 vehicles tested, all have met fuel system integrity requirements, but the Yugo GV failed to meet the windshield retention standard.

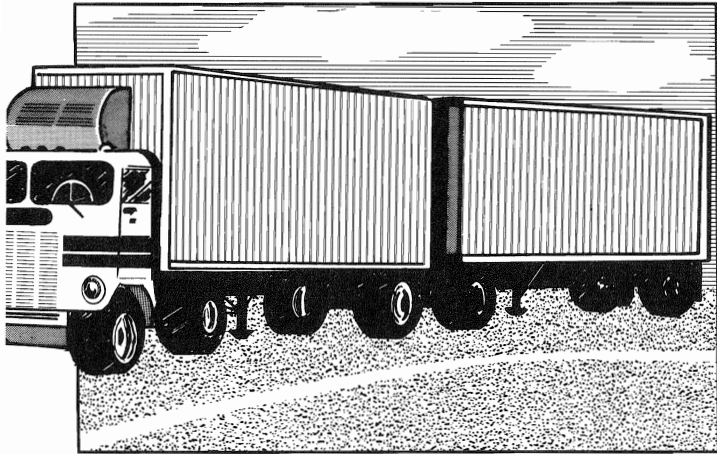
In NCAP tests, the vehicles are crashed at 35 mph into a fixed frontal barrier. Instrumented dummies, protected by the vehicle's standard safety belt system are used in the tests. Results for 12 more models will be released throughout 1986. (See *Status Report*, Vol. 21, No. 4, April 12, 1986, and No. 7, June 7, 1986, for earlier 1986 results.)

1986 Models Head and Chest Injury Levels in NCAP Tests



*CD = chest deceleration
 **HIC = head injury criterion

NOTE: The best driver HIC for 1981-86 models is given for each size class in the hatched bar. Although NCAP tests have been conducted since 1979, only scores for 1981 and later models were considered as "best" because of significant design differences in earlier models. Trucks and station wagons have been tested only since 1983 in the NCAP program.



Despite Crash Evidence, Council Backs Greater Use of Twin Rigs

Despite evidence revealing that trucks hauling two or more trailers are less safe to operate than tractors pulling single trailers, the National Research Council (NRC) says their increased use will have little effect on highway safety.

In a controversial report to Congress and the Department of Transportation, the research council says "although twin trailer trucks appear to have slightly more accidents per mile than the single trailer trucks they replace, this increase is offset by a reduction in the total number of trucks on the road." The report says that twins travel fewer miles because they offer greater flexibility and efficiency to shippers.

By 1990, the report says twins should account for about 11 percent of the miles traveled by combination tractor trailers. It notes that "all large combination trucks, including twins...are at least twice as likely as cars to be involved in fatal accidents."

The Insurance Institute for Highway Safety sharply countered the research council's report. Big trucks hauling two trailers "are considerably less safe than rigs with single trailers," says Ian S. Jones, director of engineering research. "The most complete and appropriate data cited by the Council involve experience with twin rigs in nine midwest states, where there's a big increase in the number of twin rigs as well as a large enough accident sample to be statistically stable. In these states...the increase in accidents involving twins is up to one and a half times the increase in twin-trailer traffic."

The NRC report notes that a survey of 178 truck drivers experienced in handling both twins and singles overwhelmingly indicates that tractor-semitrailers are easier to operate and perform better than twins. Of those who

are more experienced in handling twins, more than 70 percent said they are more difficult to operate when braking or running empty.

Tests show that twins are more prone to rear-trailer rollover and jackknifing than are single trailers. And, at higher speeds, twins tend to encroach on outside lanes and shoulders when rounding curves. However, at low speeds on city streets, they are more maneuverable than larger trucks because the rear wheels track the path of the front wheels more closely.

Because the trailers can be separated, loads can be sent in different directions, possibly saving the trucking industry up to \$500 million a year. However, twins are expected to accelerate pavement wear on the nation's highways because they weigh more than the trucks they replace, with loads that tend to be distributed less evenly over single rather than double axles. The committee estimates that annual road maintenance costs could rise by about \$50 million in 1990.

BMCS to Begin Safety Review of Nation's Interstate Motor Carriers

The Bureau of Motor Carrier Safety (BMCS) says it will begin its safety review of the nation's more than 188,000 interstate motor carriers with a questionnaire.

The carriers will be asked to provide information about the size of their firms, total mileage traveled, states of operation, types of cargoes, and accident and violations histories. Providing false information on the forms could subject violators to criminal prosecution.

"BMCS intends to make a check of its own and of state files...to make an independent determination [of fitness], but there will be cases in which the self-reported information will be the only data available," the notice says. To encourage honest reporting, BMCS says it is considering providing amnesty to carriers who have not complied with regulations requiring them to report certain accidents.

Under the Motor Carrier Safety Act of 1984, BMCS must establish regulations governing the safe operation of registered and unregistered motor carriers.

The new rating requirement means that all commercial motor carriers operating in interstate commerce — even owner-operators — must be registered with the bureau. Persons who own their own tractor but lease their equipment will be listed as drivers. The lessees will be registered in the bureau's files as a motor carrier and will be held responsible for compliance with safety rules. Even operators who stay within a state's borders but haul commodities that have been manufactured in another state

or are destined for delivery across state lines, are considered to be engaged in interstate commerce, a high-ranking bureau official says.

“It’s a monumental task,” says the official. So far, only 32,000 carriers have been rated. The notice of proposed rulemaking in the June 25 *Federal Register* contemplates a three-year staged effort, beginning with carriers hauling hazardous materials and other chemicals, passenger carriers, and others deemed most in need of immediate attention. He speculates it will take five to six years for the agency to complete the job — and even then, some carriers may slip through the net.

“But whether it gets done in seven or nine years,” he says, “it’s a heck of a lot better than we’ve been doing in the past 30 years.”

DOT Says Danforth Bill, Backed by Industry And Labor, Is Not Needed

The Department of Transportation (DOT) and a powerful Senate chairman agree on the need for commercial driver licensing reforms, but disagree over whether Congress should tell the Secretary when and how to do it.

In a recent hearing on commercial driver licensing reform, administration officials told Sen. Jack Danforth, chairman of the Commerce, Science, and Transportation Committee, that his bill isn’t needed. Danforth has won the support of labor, industry, insurers, and consumers for recently revised legislation. (See *Status Report*, Vol. 21, No. 1, Feb. 1, 1986.)

Jenna Dorn, associate deputy secretary of transportation, asked Danforth to withdraw his legislation and let Transportation Secretary Elizabeth Dole handle the matter.

“We are not questioning whether there should be a federal standard [regarding a single classified license for commercial drivers], but how the federal standard should be crafted and enforced,” Dorn told Danforth. She said that DOT already has the legal authority to do what is necessary. Moreover, coming to agreement with the states over reforms could take many years of delicate negotiations, she warned.

Danforth reminded Dorn that the department has always had the authority to more tightly regulate commercial drivers in the interest of safety, yet has failed to do so.

Danforth’s revised bill would put DOT under a tight schedule, requiring the Secretary to establish a national uniform commercial motor vehicle driver’s license by Sept. 1, 1987. Federal standards for licensing, testing, qualifications, and classification of drivers would be set,

Support for Helmet Laws

The American Academy of Physician Assistants (AAPA), representing more than 20,000 members, passed a resolution recently in support of state laws requiring helmets for riders of motorcycles and all-terrain vehicles.

to be adopted and run by the states with federal assistance by 1988.

The Danforth bill also sets aside funding for state inspection of carriers, including random testing of drivers for drug and alcohol use.

Thomas J. Donahue, head of the American Trucking Associations, said his organization is in substantial agreement with the Danforth proposal. Other groups that testified in favor of legislation were the International Brotherhood of Teamsters, the American Bus Association, the Highway Users Federation, the Private Truck Council of America, the National Tank Truck Carriers, the American Automobile Association, the Maryland Independent Truckers and Drivers Association, and the Owner-Operators Independent Drivers Association of America.

Ford to Add Combination Belts in Rear Seats

Ford Motor Company will introduce combination lap and shoulder belts for rear seat passengers “during the next few years,” Robert H. Munson, chief safety officer for the company, says.

The Ford announcement followed disclosures from a seat belt study by the National Transportation Safety Board. The study says rear seat passengers are better off with the combination belts rather than lap belts alone.

“We agree with NHTSA administrator Diane Steed... that the overwhelming majority of rear seat occupants are safer wearing lap belts in an accident than they would be if they were unbelted, and we strongly encourage their use,” says Munson. “There are very limited data on the effectiveness of three point safety belts as compared with two point lap belts for rear seat passengers....However, we now believe there may be some added benefit in three point belts for rear passengers.”

Recently, General Motors announced the company will add lap/shoulder belts to the outboard rear seat positions in some of its 1987 automobiles and plans to make them standard on all 1988 models. (See *Status Report*, Vol. 21, No. 8, June 28, 1986.)

Study Shows Rollover Fatalities Closely Tied To Vehicles' Stability

Utility vehicles designed with a narrow track width and high center of gravity — the Jeep CJ-5, CJ-7, and Ford Broncos built before 1978 — have fatal rollover crash rates far in excess of other vehicles, a new study shows.

In a paper on the role of stability in rollover crashes, researchers Leon S. Robertson, and A. Benjamin Kelley, report that for the years 1981-84, the CJs and pre-1978 Broncos had more than 16 fatal rollover crashes per 100,000 registered vehicles compared with rollover rates ranging from 0.6 to 4.7 for other makes and models.

However, in other fatal crashes in which rollover was not the initial event in the crash sequence, the fatal crash involvement rate of CJs and pre-1978 Broncos was within normal ranges, they report.

“The percent rollover of all fatal crashes among vehicle makes and models is strongly related to the physical stability measurements of those vehicles,” the researchers

NHTSA Approves Use Of Hybrid III Dummy

By Sept. 1, 1991, automobile manufacturers must use a new anthropomorphic test dummy when certifying that their cars meet the crash test requirements for automatic seat belts or air bags.

In the meantime, beginning Oct. 23, 1986, manufacturers may use either the dummy now certified for use in the car crash tests, the Hybrid II, or General Motors' more advanced dummy, Hybrid III, says the National Highway Traffic Safety Administration (NHTSA), in a July 25 *Federal Register* notice on Federal Motor Vehicle Safety Standard 208.

NHTSA said that although the Hybrid III and the current test dummies “do not generate identical impact responses” in tests, “...when both are tested in lap/shoulder belts or with air cushions, the differences between the two test dummies are minimal.” The new generation dummy is superior, however, because it provides more sophisticated capabilities for measuring crash forces on the neck, chest, knee, and lower leg, NHTSA says.

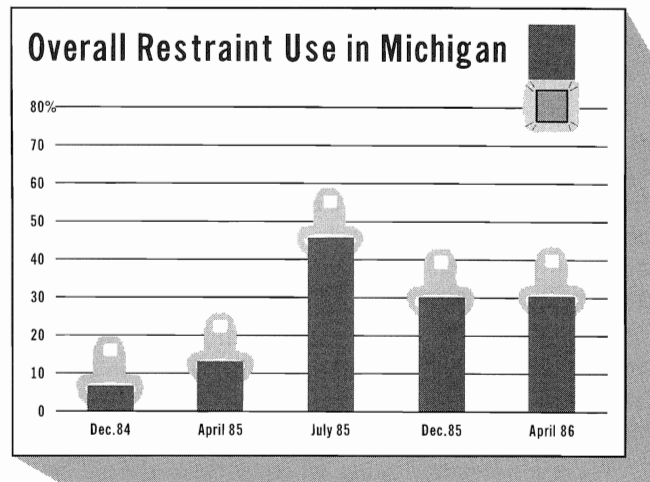
Although there were no changes to the standard's head, chest, and femur crash test limits, NHTSA added an additional chest deflection test requirement for the Hybrid III. The agency says it is still considering possible changes in calculating head injury measurements. (See *Status Report*, Vol. 20, No. 8, July 6, 1985.)

say. “This variable explains about 65 percent of the variation in percent rollover among vehicles” studied.

Even considering such factors as driver age, sex, previous driving record, rural vs. urban environment, interstates vs. other roads, posted speed limit, time of day, road alignment and gradation, the Jeeps and Broncos had far more rollover crashes than other vehicles, they report.

Although some researchers have speculated that the rollover rate for utility vehicles is greater because of mileage accumulated under unusual driving conditions or by atypical drivers, the Robertson, Kelley study found that the CJs and pre-1978 Broncos would have had to have been driven far more miles each year than the average car for the excess mileage to account for the increased rollover rate. For example, they note, “male drivers of CJs would have to have driven an average of about 123,000 miles each year,” if mileage differences were found to account for the excess number of rollovers.

For further information on “The Role of Stability in Rollover-Initiated Fatal Motor Vehicle Crashes Under On-Road Driving Conditions,” by Leon S. Robertson and A. Benjamin Kelley, write: A.B. Kelley, P.O. Box 419, Dunkirk, Md. 20754.



Survey Reveals Michigan Belt Use Is 44 Percent

Nine months after Michigan's seat belt use law became effective, 44 percent of the state's travelers ride buckled or in child restraints, which is “essentially identical” to the 43 percent use rate seen last December, researchers for the University of Michigan's Transportation Research Institute report.

The law, which may be enforced only if a motorist has been stopped for some other reason, went into force in July 1985. During that month belt use rose to 58 percent, up from 20 percent in December 1984 before the law. (See

Status Report, Vol. 21, No. 2, Feb. 22, 1986.) As in many other states though, the initial gains have eroded as publicity about the law dropped off and motorists became aware they are unlikely to be ticketed for noncompliance.

For copies of the report, "Direct Observation of Seat Belt Use In Michigan: April 1986," by Alexander Wagenaar, Karen Businski, and Lisa J. Molnar, write: National Technical Information Service, 5285 Port Royal Rd., Springfield, Va. 22161. Ask for PB-86 210 341/AS, purchase price \$11.95.

New Law Covers Children in Pickups

Rhode Island has a new law requiring that children under 16 be secured when riding in open truck beds.

In 1985, sales of domestic and imported light pickup trucks topped 2.5 million. Although the pickups are designed for hauling light loads, they are frequently used to transport passengers.

Rhode Island Senator Stephen R. Deutsch, chief sponsor of the legislation, says he wrote it after watching a teen driver of a pickup truck full of buddies careering down a road. One of the youths fell out onto the road.

There have been other instances, says Deutsch, where parents of young children in open truck beds have driven off, unaware a child has fallen out of the vehicle.

Only one pickup truck — the Subaru Brat — has provided seats in the truck bed. The Brat's seats also came with lap belts. However, Subaru stopped offering them in the 1986 model year. The new law does not say how children are to be secured, just that no person may transport a child in an open truck or similar vehicle without "securely fastening the same"

In a 1981 study of people killed in falls and jumps from vehicles, the Insurance Institute for Highway Safety reported that 100 of the 345 deaths occurred to people riding in the beds of pickups or single unit trucks.

Daytime Running Lights

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However, the agency has delayed any decision pending Canadian action on the issue.

The Canadian standard can be met with lights that may be combined with any of the existing front lamps or be installed as separate units. An analysis of the expected benefits of the rule change indicates overall fatalities will be reduced from 2 to 4 percent and the total of injury-producing crashes from 4 to 6 percent. Transport Canada expects crashes resulting in property damage only to be lowered 3 to 6 percent as well. Interested parties must submit comments by Oct. 10, 1986.

Hazardous Materials Regulations: 'Inadequate And Needlessly Confusing'

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dous waste spills. Wirth said at the hearing that the Department of Transportation's handling of hazardous materials transportation problems has not only been inconsistent, "the department's enforcement branch has become practically invisible, sending a clear message to disreputable shippers and truckers."

In his testimony, Jones pointed out that the Bureau of Motor Carrier Safety (BMCS), which is charged with overseeing truck transport of hazardous materials, has issued no objective standards for drivers other than a list of convictions for on-duty violations that can result in driver disqualification. Moreover, drivers need not pass BMCS' open book written test that contains only eight superficial questions concerning hazardous materials.

"These obsolete and piecemeal provisions should be replaced by an objective, well-defined test of knowledge and performance skills given by qualified examiners," says Jones. "Drivers certified to handle hazardous materials should be able to demonstrate their ability to handle big rigs under special load and road conditions.... Crashes often occur, because, in emergency situations, drivers are not aware of how their trucks will respond."

Jones told the committees that tachographs record mileage, trip distance, speed, and other information automatically in a tamper-resistant form and should be required for all haulers of hazardous materials. The Du Pont Company, which has an excellent safety record, has used them for more than 20 years.

Poor brakes constitute the major truck equipment safety problem, and hazardous materials haulers are no exception, Jones points out.

In Washington, trucks carrying radioactive materials must be inspected before entering the state. Yet, over 45 percent had unsafe equipment violations, a state study documents. "Overall, 26 percent of these nuclear waste hauling trucks had defective brakes, and these drivers knew their trucks would be inspected," says Jones. He urged that hazardous materials haulers be given highest priority in additional random inspections.

The Wirth measure being considered, H.R. 4612, would move all functions now carried out by the BMCS to the National Highway Traffic Safety Administration (NHTSA). A new associate deputy administrator would be assigned to run the bureau and the office of hazardous materials transportation would also be managed by NHTSA to improve communications on hazardous materials transportation regulations.

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