

# Status Report

Vol. 14, No. 2

January 25, 1979

## FHWA Urged To Drop R-R-R Proposal

Two key transportation safety groups have urged the Federal Highway Administration (FHWA) to halt its proposed rulemaking on the controversial R-R-R issue.

The National Highway Safety Advisory Committee and the National Transportation Safety Board (NTSB) sharply criticized an FHWA proposal to lower design standards for highway restoration projects, saying that rulemaking should not continue until the agency can show, "in terms of injuries and fatalities, the different safety levels achieved by applying different levels of standards."

Under the proposed rules, standards for "resurfacing, restoration, and rehabilitation" (R-R-R) projects, expected to constitute much of the nation's highway expenditures in future years, would be set at levels significantly lower than those standards utilized on new construction and reconstruction projects. The lowered standards would permit highway officials to "stretch" recent Congressional authorizations to help states repave more miles on the nation's rapidly deteriorating primary and secondary roads, while setting "minimum" standards for safety.

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## NHTSA Opens Campaign For Motorcycle Helmet Laws

A press conference and letters to governors by the National Highway Traffic Safety Administration (NHTSA) have opened a campaign to convince states to retain or readopt motorcycle helmet laws.

Joan Claybrook, NHTSA administrator, keyed the new initiative to the announcement of the results of five new NHTSA-sponsored motorcycle helmet studies. "Motorcycling has always been a dangerous way to travel," Claybrook said. "Lately it has been made even more dangerous by the repeal in many states of laws which require motorcyclists to wear helmets. Motorcycle deaths in 1977 were up 24 percent over 1976, and one important element of this increase was a decline in helmet use."

She said her agency would present Congress with a report it has requested on the effect of helmet law repeals, and that this report may lead to serious reconsideration of the stripping of the Department of Transportation's power to require states to maintain helmet laws. An agency spokesman said the report should be completed within six months. (See *Status Report*, Vol. 13, No. 16, Nov. 17, 1978.)

In the meantime, Claybrook indicated her agency would work diligently for action at the state level. She wrote each governor a strong endorsement of helmet laws. To the

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## ***NHTSA Opens Campaign For Motorcycle Helmet Laws (Cont'd from page 1)***

executives of states that have repealed the laws, she urged quick consideration of re-enacting the legislation. To governors of states where helmet-use laws are still on the books, she wrote a recommendation that the laws be retained and defended.

“During 1977, motorcycle fatalities increased 24 percent to a record high of 4,103,” Claybrook wrote the governors. “Most of those persons killed were young men under 30. Motorcycle deaths have increased again last year by some 5 percent . . . We want you to have this report so you can judge for yourself the lifesaving importance of the helmet and the impact that helmet usage laws have on wearing rates. We believe that a helmet law is one of the most important elements of a state’s highway safety program.”

### **FIVE STUDIES PROVIDE DATA**

The NHTSA-sponsored studies on which Claybrook based her recommendation relied on data from Colorado, South Dakota, Kansas, Oklahoma, and Los Angeles County. They indicated two important points about helmet use before and after the repeal of mandatory helmet laws.

First, the pre-repeal data for Colorado, South Dakota, and Kansas showed an extremely high level of compliance with helmet laws — 99.7, 99.5, and 94.4 percent respectively. (See chart.) Helmet wearing among crash-involved riders was slightly less.

The agency believes these statistics indicate that helmet laws can be successfully enforced. The agency also noted that, whereas the requirement for all riders to wear helmets is easily enforced, since violators are immediately recognizable, the requirement that only those under age 18 be helmeted can be enforced only by stopping helmetless cyclists and requiring proof of age.

Second, the data showed that after helmet law repeal, helmet use dropped dramatically. For example, in Colorado helmet use fell from 99.7 percent to 57.7 percent in one year. The Fatal Accident Reporting System (FARS) maintained by NHTSA contains information on helmet use for riders in fatal crashes throughout the U.S., and these data corroborate the finding of these studies that, where a helmet law exists, use rates are high, and where such laws are repealed, use rates nosedive. (See *Status Report*, Vol. 13, No. 12, Aug. 21, 1978.)

### **81 PERCENT OF RIDERS BENEFITED**

The Los Angeles County study found that 81 percent of the helmeted riders involved in 899 crashes were benefited in that their helmets prevented or lessened the severity of injuries. The more head area covered by the helmet, the better off the rider was. In the investigated crashes, those cyclists wearing full-facial helmets were reported to have the lowest incidence of head injury.

This study found the safety helmet to be neither a cause nor a contributing factor in any of the crashes investigated. Hearing was shown to be almost irrelevant in crash avoidance, and, in any case, nothing indicated that helmets interfered significantly with hearing.

The 3 percent reduction in the field of vision caused by helmets was also shown by the study to be unimportant in crash avoidance. Most safety hazards were found to be either in the direct line of sight of the cyclist or slightly to the side.

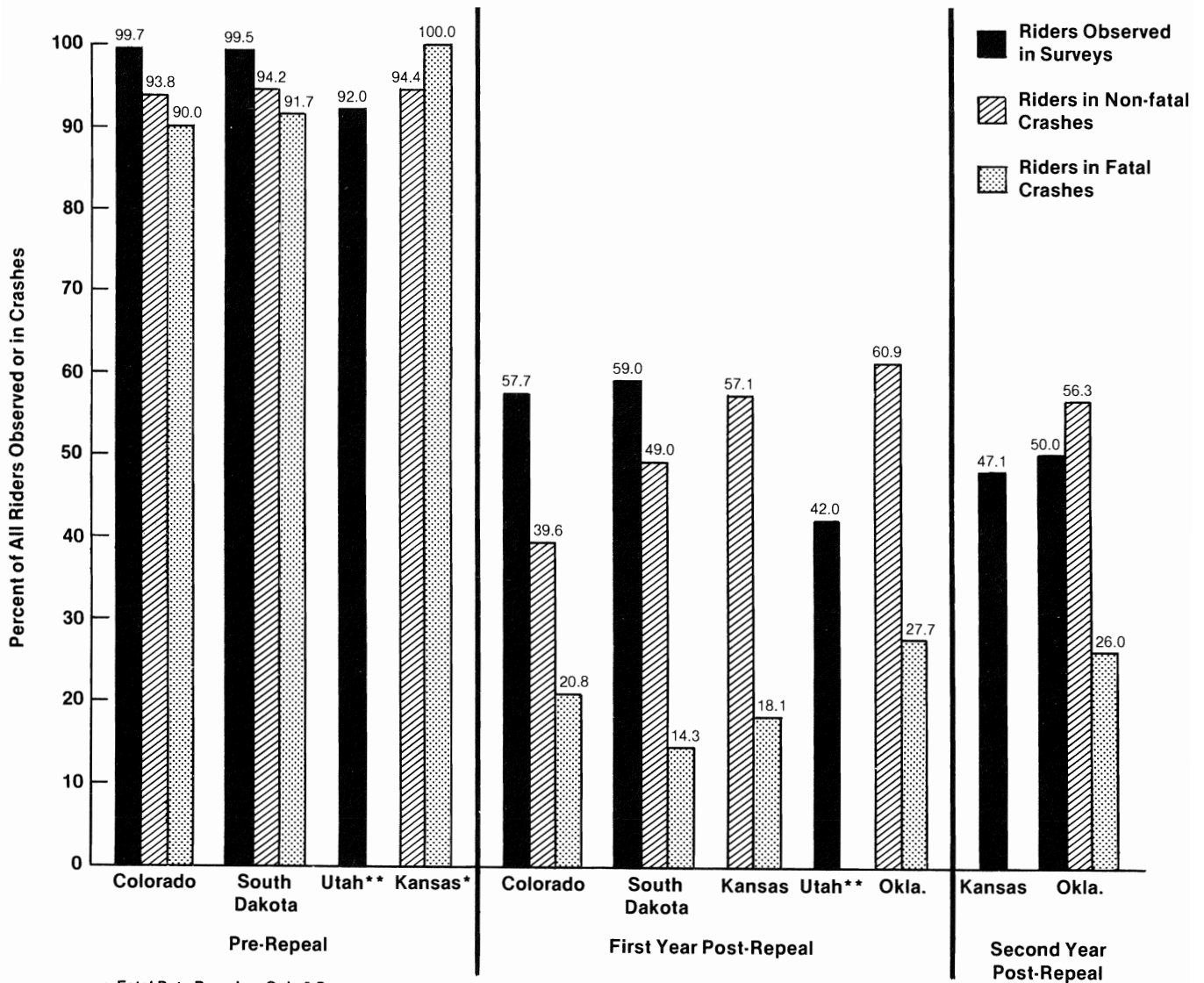
The violation of the motorcyclist’s right-of-way by another vehicle was identified by the Los Angeles research team as the most frequent cause of cycle crashes. Their finding was that often a collision occurred after an oncoming vehicle turned left into the path of a motorcycle. (See *Status Report*, Vol. 13, No. 16,

Nov. 17, 1978.) Interviews with crash-involved, motor-vehicle drivers indicated that these motorists failed to see the cyclist until it was too late to avoid hitting him.

According to the study, such “invisibility” on the part of cyclists underscored the need for one of the recommended preventive measures: increased conspicuity or the heightening of the cyclist’s ability to be seen by other drivers. One way to combat motorcyclist invisibility, the study pointed out, is for the cycle rider to wear brightly colored clothing; yellow is the preferred color, according to the study. Dr. Harry Hurt, director of the study, says that many injured cyclists wear drab war surplus jackets, which, obviously, are designed to blend into the environment.

The study found that one of the most effective means of increasing visibility is the daytime use of motorcycle headlamps. Preliminary data from the California study showed that about half of the cycling population used their headlamps during daylight hours, but that two-thirds of daytime crashes involved motorcycles whose headlights were off. The researchers feel that the risk of being involved in a daytime motorcycle crash can be halved by driving with the headlamps on.

### Percent of Riders Using Helmets Based on Observational Surveys and Accident Reports



\* Fatal Data Based on Only 6 Cases.  
\*\* Roads With Speed Limit over 35 MPH.

## **Longer Caution Light May Reduce Traffic Conflicts**

A study of vehicle movement through traffic lights, sponsored by the Insurance Institute for Highway Safety, suggests that crashes at many intersections can be reduced by lengthening the duration of the yellow caution light.

Time lapse films of two suburban intersections — one near Atlanta, Ga., and the other in Maryland near Washington, D.C. — revealed that the large numbers of vehicles still crossing the intersections when the signals changed to red “could be eliminated with small increases in the duration of the yellow phase,” the study said.

The study also found that “potential intersection conflicts” — created by the vehicles still in the intersection after the signals changed to red — were more frequent in rush hour traffic and on dry pavement.

Conducted by William A. Stimpson and Philip J. Tarnoff of Alan M. Voorhees & Associates, Inc., and by Paul L. Zador of the Institute staff, the study measured the frequency of potential conflicts for two settings of yellow time durations in rush hour and non-rush hour traffic on both wet and dry pavement at each intersection.

### **SHORT EXTENSION REDUCES CONFLICTS**

The researchers reported that under all conditions the frequency of potential conflicts was lower when the yellow light was longer. Of the observed vehicles that were the last to cross during the traffic light cycle, the study said, 12 to 19 percent failed to clear the Maryland intersection before the signal turned red when the duration of the caution light was set at 4.6 seconds. When the duration of the light was extended to 6 seconds, potential conflicts dropped to between 0 and 2 percent.

Potential conflicts at the Georgia site initially ranged from 63 to 90 percent, but dropped to 19 to 21 percent after the duration of the yellow light was lengthened 1.4 seconds.

Commenting on their findings, the researchers noted that there “exists no consensus among traffic engineers as to what constitutes an optimal yellow interval under everyday traffic and environmental conditions.” They said further work is needed to “first determine and then to introduce clearance intervals that will insure the reduction of avoidable intersection crashes by reducing the frequency of potential intersection conflicts.”

An additional finding of the study was that higher percentages of vehicles passed through red lights in rush hour traffic than in non-rush hour traffic, and on dry pavement than on wet pavement. It can be concluded that “conflicts are dependent not only on intersection geometry and travel speed, but on traffic density and possibly pavement condition,” the researchers reported.

## **NHTSA Aims For Multipiece Wheel Rule In 1980**

The National Highway Traffic Safety Administration (NHTSA) is considering a total ban on the manufacture of multipiece rims and their replacement parts in a rule it plans to issue sometime in 1980, an agency official has told a task force of the National Highway Safety Advisory Committee.

Other forms of the rule being considered would require that multipiece wheels retain their components when subjected to sudden deflation and run-flat conditions, and/or that their manufacture be banned in a “selective, incremental and phased sequence,” according to Fred Koch of NHTSA’s Crash Avoidance Division.

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Koch told the committee's task force for commercial vehicle safety that the proposals will be set forth in an advance notice of proposed rulemaking scheduled to be issued sometime before the middle of February. NHTSA plans to issue a notice of proposed rulemaking later this year, Koch said. (The Occupational Safety and Health Administration also has said it will soon issue a proposed rule to provide protection against multipiece wheel hazards. See *Status Report*, Vol. 14, No. 1, Jan. 9, 1979.)

Multipiece wheels — commonly used on trucks, buses, and campers — have a detachable locking ring which is designed to hold the tire in place on the wheel rim under pressure of inflation. The pressure of an inflated tire or a small change in tire pressure under some conditions may cause the ring to explode away from the tire, killing or dismembering persons nearby. Explosive separations are unpredictable and have occurred both in repair shops and on the highway. (See *Status Report*, Vol. 13, No. 14, Oct. 11, 1978.)

### ***FHWA Urged To Drop R-R-R Proposal (Cont'd from page 1)***

A similar proposal advanced by the American Association of State Highway and Transportation Officials (AASHTO) was rejected by the agency last year, because of "severe comments." (See *Status Report*, Vol. 13, No. 2, Feb. 7, 1978.)

NTSB Chairman James King criticized the latest rulemaking effort, saying it contains the "same deficiencies" as the earlier attempt. King told FHWA that "the suggested changes to current criteria are based not on scientific fact, but on the art of compromise, which will surely result in increased injuries and deaths with each federal dollar spent, as compared to those spent in the recent past using current standards."

King said FHWA has an obligation to undertake a research effort "to examine the design standard issues. . . to scientifically determine their relationship to safety and how incremental changes in a specific element, together with other related elements, will affect safety." He drew a parallel between issues raised by R-R-R and a recent court ruling against the National Highway Traffic Safety Administration's standard 121 on truck and bus braking performance. (See *Status Report*, Vol. 13, No. 15, Oct. 30, 1978.)

The board said the FHWA could continue to approve R-R-R projects that do not meet new construction standards on an "exception basis, as it is now doing, reviewing each project to ensure that public safety is not jeopardized." Under the proposed rules, FHWA would examine the impact of the lowered design standards only after incorporating them in highway restoration projects.

### **ADVISORY COMMITTEE URGES SAFETY "TRIGGER"**

The advisory committee agreed with the NTSB recommendation that the proposed rule changes be dropped, and directed a letter be sent to Transportation Secretary Brock Adams charging that "the proposal fails to balance R-R-R needs with safety needs."

In a companion report, the advisory committee suggested an alternative method, calling it a "regulatory process" rather than standard-setting. A trigger mechanism based on accident analysis and engineering studies would be utilized for designating sites for safety upgrading. The committee recommended that all proposed R-R-R projects be ranked on a "criticality scale based on highway deterioration." Safety upgrading would be done at sites where higher than average accident rates are reported.

Carlton Fisher, director of the Georgia Office of Highway Safety and a member of the advisory committee, appeared to spearhead the move to a trigger mechanism in comments submitted to the docket. Saying that the "omission of the word 'shall' throughout the [agency's] proposal indicates that nothing will be required for safety," Fisher asserted that it is "clear from the statutes and the Congressional record" that

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## ***FHWA Urged To Drop R-R-R Proposal (Cont'd from page 5)***

Congress wants the federal-aid system restored without sacrificing safety. Fisher also called for setting minimum skid requirements for all resurfacing projects.

Members of the advisory committee task force asked whether federal funding is available for safety upgrading and were told by FHWA representatives that money is available for safety upgrading on restoration projects. (According to a November 1977 notice from FHWA to the states, the agency said that while the federal government will not cover the total cost of making highway improvements, funds have been available for years for safety-related improvements. See *Status Report*, Vol. 13, No. 13, Sept. 20, 1978.)

### **LOWERED STANDARDS MAY RAISE FATALITIES**

Roy Anderson, NTSB spokesman, told *Status Report* that when highways are resurfaced without meeting geometric design standards (now incorporated in new construction projects), the resulting higher speeds may bring "increased fatalities." Anderson insisted that FHWA should "study the effects of these design changes" so they can assess their safety impact.

Despite the protests from safety groups, including the Insurance Institute for Highway Safety (see *Status Report*, Vol. 13, No. 15, Oct. 30, 1978), state and local government officials generally applauded FHWA's R-R-R proposal.

However, in comments to the docket, many local officials objected to the use of the word "standards" in setting policy, preferring to use the word "guidelines."

Although there was general agreement that the FHWA proposal would help somewhat, county officials in rural areas indicated that "much reconstruction will be required to participate." An engineer from Wayne County, Ohio, said "nearly all of our work is to preserve an existing facility, not because it is the most

## **UPDATE . . .**

**PASSIVE RESTRAINT ATTACK:** Rep. George V. Hansen (R.-Ida.) has introduced a concurrent resolution in the House of Representatives to disapprove FMVSS 208, under which the Department of Transportation has prescribed that increased levels of automatic crash protection be provided in new cars, starting with some 1982 models. The resolution was referred to the House Committee on Interstate and Foreign Commerce, the committee that rejected a similar resolution in November 1977. (See *Status Report*, Vol. 12, No. 16, Nov. 8, 1977.)

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**VIN PLAN CHALLENGED:** The Vehicle Equipment Safety Commission (VESC) has filed suit for judicial review of the NHTSA plan for revising vehicle identification numbers (VINs). (See *Status Report*, Vol. 13, No. 16, Nov. 17, 1978.) Joined by the Maryland Department of Transportation and the Maryland Motor Vehicle Administration, the VESC filed a petition for review of the VIN rulemaking in the U.S. Court of Appeals for the Fourth Circuit in Richmond, Va. The VESC argued in its petition that the proposed VIN system is beyond the computer capabilities of a large number of states.

desirable solution but is the only solution available due to monetary restraints, physical restraints, and local population desires and concerns.”

Other criticisms included:

- An observation from the Los Angeles County road commissioner that the “concept of nationwide ‘conformity’ reduces flexibility and does not take into consideration local or regional differences or the individual characteristics of a given job.” A group called the Metropolitan Transportation Engineering Board, representing 147 cities and 6 counties in Southern California, asked that state and local agencies “be allowed to establish” their own design standards for R-R-R work.
- Wide disagreement on proposed superelevation requirements that some local governments believe would require the acquisition of additional right-of-way.
- Complaints that roadway and surfacing width requirements on some roads would be too “stringent.”
- A Colorado engineer expressed “reservations” on the agency’s proposed standards covering horizontal curvature, saying there should be a “stronger emphasis on flattening curves and correcting superelevation rather than placing restrictive signing” on curves.
- Michigan’s Office of Highway Safety Planning told FHWA that “design speeds should be set as high as practicable” because design speeds of 55 mph or less “will definitely endanger safety” for those vehicles operating at speeds in excess of the speed limit.

Saying that the FHWA proposal is not as “flexible” as they would like to see it, AASHTO did, however, say that the design guide for R-R-R projects strikes a “reasonable balance between the concerns for traffic service, safety, and economy,” and declared that only minor modifications would render them workable for the states.

## **Sweden Finds High Rate Of Auto Defects**

Nearly two out of every three cars undergoing periodic vehicle inspection in Sweden last year were found to have some safety defect, the government inspection agency has announced.

In Sweden inspections are conducted by AB Svensk Bilprovning (known in English as the Swedish Motor Vehicle Inspection Company), and this agency each year reports its findings for each of various vehicle makes and models in a publication called “Weak Points of Cars.” This year’s edition reports almost 65 percent of the inspected vehicles had one or more observed faults. The data covers vehicles that were about two, four, and eight years old at the time of inspection.

A group of features that Bilprovning calls the “automobile communication system” provided the highest number of defects, with 37 percent of the inspected vehicles having faults in this area. The communication system includes such items as lighting, direction indicators, horn, and windshield washers and wipers.

Copies of the current report can be obtained by sending a check or money order for an amount equaling 55 kronor to AB Svensk Bilprovning, Fack, S-162 10 Vällingby, Sweden.

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# Status Report

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