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# NATIONAL TRANSPORTATION SAFETY BOARD WASHINGTON, D.C.

ISSUED: October 6, 1980

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Forwarded to:

Honorable John S. Hassell, Jr.  
Administrator  
Federal Highway Administration  
400 Seventh Street, S.W.  
Washington, D.C. 20590  
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SAFETY RECOMMENDATION(S)  
H-80-52 through -57

The Safety Board has completed a Safety Effectiveness Evaluation <sup>1/</sup> of a sample of State highway skid resistance programs, which represents the second phase of our continuing safety objective to seek nationwide improvements in skid resistance standards. According to NHTSA data, the number of fatal accidents during 1979 has increased from about 5,900 to 6,900. Fatal accidents on wet pavements, which in previous years represented about 13.5 percent of all the fatal accidents, in 1979, represented 15.3 percent of all the fatal accidents. Although the pavement wet time may have increased during 1979, nevertheless, the Safety Board is concerned with the increase in fatal accidents on wet pavements. The Safety Board believes that the findings of our evaluation will assist FHWA attack this increasing safety problem.

This evaluation is based upon the Safety Board's review of 10 State programs, State responses to the FHWA's Advance Notice of Proposed Rulemaking, FHWA existing guidelines on skid resistance, 12 Board accident investigations, the Board's special study NTSB-HSS-80-1, and a limited review of literature provided by the States.

Before a rational program can be implemented, some minimum criteria, in the form of skid numbers, must be accepted. Since skid numbers can vary seasonally a range of skid numbers is more feasible than a specific minimum number. Since projects often must be justified economically, accident records should be used. Overall in the 10 States, emphasis on evaluating wet pavement accident locations is increasing and appears to yield high benefits. To improve this method, accurate accident data must be gathered. Based on the Board's discussions with the States, the suggested priorities for skid testing would be:

<sup>1/</sup> For more detailed information read, "Safety Effectiveness Evaluation: Selected State Highway Skid Resistance Programs," (NTSB-SEE-80-6).

- 1) Wet-pavement, high-accident locations (on and off the State system),
- 2) Research and evaluation of new surfaces, and
- 3) General inventory to program funds based on the needs of the system and to highlight a few potential locations in need of improvement.

As a result of its experience in the area of skid resistance, the Safety Board believes that the FHWA should immediately establish minimum program requirements with defined goals, objectives, tasks, evaluation methods, and funding levels to assure comprehensive, coordinated skid resistance programs. Then it would be appropriate to require each State to have an FHWA-approved program.

The Safety Board also believes that FHWA must provide additional leadership to the States and local agencies by promoting specific programs and research. The need for this type of work was discussed by the States in Board reviews.

To assure comprehensive, coordinated skid resistance programs, the National Transportation Safety Board recommends that the Federal Highway Administration:

Develop program objectives for comprehensive wet weather skid resistance programs that can be used to both guide and evaluate State programs. (Class III, Longer Term Action) (H-80-52)

After the program objectives have been developed, require each State to have an FHWA-approved wet weather skid resistance program which is subject to annual audit by FHWA. (Class III, Longer Term Action) (H-80-53)

Issue a revised Federal-aid Highway Program Manual (FHPM 6.2.4.3) which promotes:

1. Full-width surface treatments.
2. Skid trailers with left and right wheel locking capabilities.
3. Skid testing at the posted speed limit, as proposed in the FHWA NPRM "Skid Resistance Pavement Surface Design."
4. Evaluation of the skid resistance properties of all newly developing surface treatments.
5. Increase Federal participation on skid resistance projects. (Class III, Longer Term Action) (H-80-54)

Promote further research to examine:

1. The measurement of rutting and its effects on wet pavement accidents.
2. More effective signing system to advise motorists of safe speeds on slippery, rutted, or poorly drained wet surfaces and on all new surfaces.

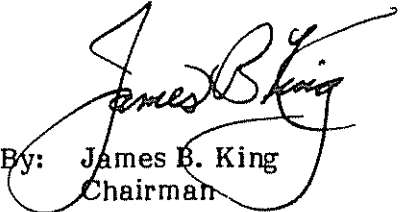
3. Use of tire tread depths more representative of those used by motorists to measure skid resistance.
4. The effect on skid resistance of immediately allowing heavy truck traffic on newly constructed or newly overlaid surfaces. (Class III, Longer Term Action) (H-80-55)

Develop a program to enhance dissemination of and the sharing among States of skid resistance information. Elements of the program should include:

1. The compilation of an instructional text for a state-of-the-art manual for Federal, State, local, and county agencies.
2. Periodic regional meetings to review skid resistance research and successful operating programs.
3. Periodic publication of a description of State programs and current research studies on skid resistance. (Class III, Longer Term Action) (H-80-56)

Evaluate annually the progress of the State skid resistance programs in attaining program goals and publish the findings. (Class III, Longer Term Action) (H-80-57)

KING, Chairman, McADAMS, GOLDMAN, and BURSLEY, Members, concurred in these recommendations. DRIVER, Vice Chairman, did not participate.

By:  James B. King  
Chairman

