



Log H-565

National Transportation Safety Board

Washington, D.C. 20594
Safety Recommendation

Date: June 3, 1992

In reply refer to: H-92-32 and -33

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Administrator
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The number of fatalities that occurred in highway work zones increased from 489 in 1982 to 780 in 1988. Concurrently, total spending on highway construction increased from about \$32 billion to about \$52 billion. The Nation's interstate system, for the most part, has been completed. As the infrastructure ages, the number of maintenance and construction zones to repair and to replace sections of the network can be expected to increase. Further, growth in traffic volume has required that roadway capacities be increased to provide a more desirable level of service to motorists; thus construction for this reason can also be expected to increase. The available data indicated that unless additional efforts were made to reduce work zone accidents, the number of fatalities would continue to increase. Because of these factors, the National Transportation Safety Board became increasingly concerned about the adequacy of traffic safety in work zones and initiated a study in 1988 concerning work zone related accidents. More than 40 accidents were investigated during the next 2 years, and previous work zone accidents investigated by the Safety Board were reviewed.

In July 1990, as the review of the accident cases neared completion, the Safety Board conducted a major investigation of a work zone accident near Sutton, West Virginia. Eight persons were killed in the accident, and five vehicles were either destroyed or severely damaged. In its statement of probable cause, the Safety Board determined that contributing to the cause of the accident was the less than optimal work zone control devices and procedures used at the site. The accident underscored the Safety Board's concern regarding safety in work zones, and several safety recommendations were issued to the West Virginia Department of Transportation and the Federal Highway Administration to improve work zone safety.

Additional investigations of work zone accidents were conducted in 1990 and 1991, as they occurred. A review of these accidents and the Sutton, West Virginia, accident raised additional work zone safety issues that are discussed in the Board's study.¹

¹ National Transportation Safety Board. 1992. Highway Work Zone Safety. Safety Study NTSB/SS-92/02. Washington, D.C.

The Fatal Accident Reporting System (FARS), a database on fatal highway accidents maintained by the National Highway Traffic Safety Administration (NHTSA), U.S. Department of Transportation, provides data on fatal accidents and injuries in work zones. The accidents are separated into construction, maintenance, utility, and unknown work zones.

Concern has been expressed in the industry about the accuracy of work zone related data. With respect to fatalities, FARS does not, for example, distinguish between persons driving highway maintenance vehicles within work zones and other drivers who crash in work zones while traversing the work zone site. A 1991 study² by the National Institute for Occupational Safety and Health recommended that data collection be adjusted to enable this distinction, primarily because countermeasures for these two types of crashes are different. The Safety Board concurs and believes that the NHTSA should revise the reporting of fatalities to make this distinction.

A 1987 study³ by the American Association of State Highway and Transportation Officials (AASHTO) recommended that "All States should assure their accident data systems are capable of providing sufficient information to monitor the accident experience of work zones within their State."

Because of the concern expressed in the above referenced studies, Safety Board staff selectively reviewed State data and the report forms used by States to determine how States document or code accidents that occur in work zones. The review revealed some discrepancies between State data and FARS data. For example, in 1989, the State of North Carolina reported that 16 fatalities occurred in work zones, but the FARS data indicated that 3 fatalities occurred in work zones in the State. For the same year, the State of Minnesota reported that 11 fatalities occurred in work zones, compared to 16 fatalities according to FARS data. In 1990, the FARS data indicated that 11 fatalities occurred in work zones in the State of West Virginia, while the State reported 14 fatalities.

NHTSA staff involved with the FARS data indicated that some differences in the number of fatalities reported by FARS and the States may exist because only fatalities that occur within 30 days after the accident are included in the FARS data. However, NHTSA staff also acknowledged that the discrepancies could very likely be caused by the various ways States document and code work zone related accidents. On some State forms, there are no categories to document accidents occurring in work zones. In preparing the FARS data, NHTSA's analysts in these States would have to interpret the narrative of the

² Landen, Deborah; Kisner, S. 1991. Occupational fatalities in highway work zones: fatal accident report system, 1987-1988. Washington, D.C. National Institute for Occupational Safety and Health, Division of Safety Research.

³ American Association of State Highway and Transportation Officials-- Standing Committee on Highway Traffic Safety. 1987. Summary report on work zone accidents. Washington, D.C. April.

accident found on the State form to determine if the accident was work zone related.

Section 402 of the Intermodal Surface Transportation Efficiency Act of 1991⁴ provides for:

...annual reports to the Secretary [of the DOT] on the efforts being made by the States in reducing deaths and injuries occurring at highway construction sites and the effectiveness and results of such efforts. The Secretary shall establish minimum reporting criteria for the program. Such criteria shall include, but not be limited to, criteria on deaths and injuries resulting from police pursuits, school bus accidents, and speeding, on traffic-related deaths and injuries at highway construction sites and on the configuration of commercial motor vehicles involved in motor vehicle accidents.

The above legislation provides an excellent opportunity to achieve uniformity in the documentation of work zone related accidents. The Safety Board has been informed by NHTSA officials, however, that some States are streamlining their accident report forms to reduce the time required to fill out the form because of budgetary constraints. Such action, in the Safety Board's view, appears contrary to the intent of Section 402. Moreover, the Safety Board believes that there is a need for more reliable data on work zone accidents and that the NHTSA and the FHWA should review all State forms and select the data elements that comprehensively document work zone accidents. The States should be encouraged to incorporate these data elements into the States' accident report forms.

Therefore, as a result of the safety study, the National Transportation Safety Board recommends that the National Highway Traffic Safety Administration:

Revise the reporting of work zone fatalities to distinguish between persons driving highway maintenance vehicles within work zones and other drivers who crash in work zones while traversing the work zone site. (Class II, Priority Action) (H-92-32)

Review, in conjunction with the Federal Highway Administration, all State accident report forms, select the data elements that comprehensively document work zone accidents, and encourage the States to incorporate these data elements into their accident report forms. (Class II, Priority Action) (H-92-33)

Also, as as a result of this safety study, the Safety Board issued safety recommendations to the Federal Highway Administration and the American Association of State Highway and Transportation Officials.

⁴ Legislation signed by the President on December 18, 1991, that provides authorizations for highways, highway safety, and mass transportation for the next 6 years.

Acting Chairman COUGHLIN, and Members LAUBER, HART, HAMMERSCHMIDT, and KOLSTAD concurred in these recommendations.



By: Susan M. Coughlin
Acting Chairman