or rather modified, as a system that, instead of monitoring accidents, monitors highway segments. By sampling from all the segments across the nation and monitoring certain of these segments, accident data could be collected from accidents that occur on these segments and exposure data could be collected at the same time. This would change the nature of the NASS system in that those teams that are currently at one location pulling accidents from one set of files would become "traveling salesmen" who would travel in a larger geographic area to continually monitor numerous segments of highway. It is obvious that the problems with changing the system to this new format would be very formidable. However, drastic changes like this should be carefully considered in order to make this system as useful as it possibly can be for the researcher interested in the highway side of the accident problem.

SUMMARY OF PART 3

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As might be expected, the above six papers generated a great deal of discussion among the participants at this workshop. While many points were raised in these discussions, two issues of interest arose.

First, in terms of terminology, it became apparent to those in the workshop that two types of in-the-field accident research were being discussed. For lack of better names, these two types of research might be termed "statistical research," which is aimed at evaluating how well a given piece of hardware reduces injuries to occupants of striking vehicles, and "clinical studies," which are aimed at determining the failure modes of a given piece of hardware once it is put in the real world. These clinical studies are used to validate the results of the crash testing. While many of the requirements for these two studies are similar, the data and study design needs are not always the same.

While there is a great need for clinical studies, there is perhaps an even greater need for the well-controlled field statistical studies that provide information concerning how well a design actually works--its benefits in terms of severity or frequency reduction. Indeed, if the tough question being asked by Congress, consumer groups, state legislators, the U.S. General Accounting Office and other fiscal analysts is one of "how many lives can it save" (i.e., how well does it work), then the second type of research, the statistical study, is the most important in that it alone can provide severity reduction factors to the cost/benefit analyses so desperately needed.

This lack of good statistical studies generated the second major point of the discussions. There was a strong feeling that one major roadblock to the improvement of accident research is the system under which the evaluations must now be conducted. The current requirements for "evaluation" of all improvements by every state in every project results in inadequate funding for a given evaluation, pitifully poor research designs and thus results of little or no value. As noted in the discussions, there are alternatives to this existing system. For example, rather than require the "evaluation" of every improvement project conducted in a given state, a system could be devised that would require the state (perhaps as an option) to conduct one well-designed evaluation in which control or comparison groups are required. This single well-designed evaluation could be done in place of the numerous before/after studies that are now conducted. In this manner, at least one piece of new information would arise from each state each year. Thus, in summary, while discussion indicated that inertia and other pressures continued to make changes in the existing system difficult, such changes are needed and are worth working for.

Part 4: Session 3, Group Consensus on Key Programs and Recommendations

As stated in the Introduction to this Circular, pre-workshop and workshop written opinions of key data problems were used to select four key issues for more detailed subgroup discussion and recommendations. These findings were then presented to the workshop attendees at large. The four topics selected were

1. Use or Revision of Existing Data Banks to Obtain a More Efficient or Improved Analysis of Accidents with Roadside Features;
2. Clinical Engineering Analysis of Performance of Roadside Features in Real-World Collisions;
3. Utilization of Simulation to Predict Probability of Injury; and
4. Linkage Between Physical Testing and Likelihood of Injury.

The time allotted in the workshop for this process was quite limited. Thus in some cases the identification of an area of the workshop as a top-priority issue in obtaining needed impact severity data is in itself the contribution of this workshop.

ISSUE: USE OR REVISION OF EXISTING DATA BANKS TO OBTAIN A MORE EFFICIENT OR IMPROVED ANALYSIS OF ACCIDENTS WITH ROADSIDE FEATURES

Julie A. Cirillo, Federal Highway Administration, Moderator

Other group members: Roy Anderson, Lindsay I. Griffin, III, Russell A. Smith, Harry W. Taylor, Edward J. Tye, Charles V. Zegeer

Methods of improving evaluations of safety appurtenances was the basic topic of our subgroup. Much discussion centered on the design of the evaluation. Use of NASS for this type of special study was also discussed. In general it was agreed that:

1. Well-designed in-service evaluations of accident countermeasures is one of the biggest gaps in the safety field.
2. Requirements to evaluate every safety improvement are a big deterrent to good evaluations.
3. Some policy change may be necessary to allow states to undertake a limited number of well-designed evaluations.
4. Use of a NASS special study to do evaluations may be feasible.
5. Proper selection of sections for installation of countermeasures is critical for accurate evaluations.
6. Standard evaluations are important for transfer of information.