

you are going to need. So it is pretty much tailored during construction, rather than as part of the design, and we call it the windshield view you are seeing here, which in the slide here looks quite different than it looks on a set of plans, so a great deal of this depends on the skill of the people who are actually saying put more guardrail on or take it off, and many times we go back and observe the road after it is open for traffic, and we see the need for guardrails and add them. That is a common practice.

Mr. CONSTANDY. But the common practice bears on the design?

Mr. RICKER. Oh, it certainly does, but the basic design of the guardrail is on cross section, not on the windshield view.

Mr. CRAMER. Mr. Ricker, as I see it, the basic problem has been there are no standards, criteria, or guidelines relating to the type of guardrail construction, relating to placement of guardrail as it relates to safety in particular, which we have seen displayed throughout in these slides. That has been, perhaps, one problem in the past, has it not? You say to put up a guardrail; you do not say where to place it, how to construct it for safety purposes, how to ground the end of it so it does not itself become a hazard?

Mr. RICKER. I guess we have to fall back on Special Report No. 81 of the Highway Research Board in which we put our best thoughts together at that time.

Mr. CONSTANDY. Was that ever adopted, Mr. Ricker, to your knowledge, as actual policy?

Mr. RICKER. I do not know that it was actually. It was sent out by the Bureau of Public Roads with a letter of endorsement.

Mr. CRAMER. Well, this was put out as a report by the Highway Research Board of the Division of Engineering and Industrial Research, National Academy of Science, National Research Council. To what extent were the States required to conform to this?

Mr. CONSTANDY. Mr. Huff.

Mr. HUFF. Mr. Congressman, several years ago—I am sorry, I do not know how long ago, I would guess some 5 or 6 years ago, the American Association of State Highway Officials took up the subject of guardrail, being closely associated with the Highway Research Board. It was decided to let the Highway Research Board complete its studies which they had done, and I do not know whether AASHO has taken formal action on it or not, but those of us involved in AASHO have accepted it.

Mr. CONSTANDY. I do not think it has ever been adopted by AASHO as policy.

Mr. HUFF. If it has, I do not know about it.

Mr. CONSTANDY. I think what happened upon completion of Special Report No. 81, it was sent to the AASHO committee and was reviewed and the comments of those members were reviewed by the members of the committee who produced Special Report No. 81 but I do not think it was formally adopted by AASHO.

Do you know, Mr. Prisk, whether it is a requirement of the Public Roads as something to be followed?

Mr. PRISK. The Bureau of Public Roads in August 1966 issued an instructional memorandum identified as 21-5-66—excuse me, July 1,