

Mr. CONSTANDY. That is apt to be a large percentage of the vehicles striking the bridge rail?

Mr. WILKES. No; I do not think all vehicles hit a bridge rail at a 20° angle at 60 miles an hour.

Mr. CONSTANDY. No, I would not suggest that, either.

We will get into this in somewhat more detail later in the hearing, because I think it is significant. Many States built bridge railings in excess of standards set as a minimum by the AASHO policy.

Mr. WILKES. I would agree.

Mr. CONSTANDY. We have to recognize there that the State has the latitude to exceed the minimums as set by the AASHO standards, does it not?

Mr. WILKES. Yes; it does.

Mr. CONSTANDY. In many cases States have done so?

Mr. WILKES. Yes; they have.

Mr. CONSTANDY. So, if we reflect on the projects which we have seen here in the nine States, the fact may be that they have been built, in the elements which have been analyzed, to the AASHO standards and still not be adequate, but the State is not precluded from going above those standards in providing a facility which would be adequate from a safety standpoint?

Mr. WILKES. That is correct.

Mr. CONSTANDY. Mr. Ricker.

Mr. RICKER. Several different organizations, particularly in the State of New York, have made extensive crash tests of bridge rails. Movies of these tests have been shown in several meetings, such as the Highway Research Board. To those of us who have seen the movies, there is only one conclusion: That we never want to hit a bridge rail.

There are just spectacular crashes, including such things as the motor flying out of the vehicle and over into the far side of the rail.

I think we might consider a little bit that the nature of limited-access highways is enough that it greatly increases the number of structures on a particular section of road. If you have a land-access highway, about the only time there is a bridge is when you are crossing a river, but a limited-access highway has many, many more structures, and this is perhaps why they are becoming increasingly important in accident involvement, and increasingly important that they be designed safely.

On the matter of connecting the guardrails into the parapets, I have been personally advocating a better design of this for some 10 years, based on direct observation of accidents and so on. I am all in favor of it, and I think they must be connected, and well connected.

One other observation. We may wonder why people run into bridge piers. I am speaking of the piers supporting the overhead structure, which may be only two feet wide. This looks like a small spot to hit. Certainly when it is drawn out on a plan, or from an aerial view, you wonder why anybody goes out of his way to run into them.

Actually, in appearance to a vehicle, they are 14 feet wide, if you have only 2 feet of concrete; because if the vehicle touches them anywhere, it is a head-on crash.

Likewise, you can compute they are about 400 feet long. If a vehicle wanders over the median anywhere within 400 feet, it is almost certain