

of the difficulty of trying to make a light unit out of a brittle material. It just does not work with light materials or in dynamics.

You saw this picture in the other group, but it is to illustrate exactly the same thing that I just mentioned, that it is necessary that the beams be properly designed so as to keep a car away from collision with hard posts. The failure, as you can see, is catastrophic.

This is merely to show that if properly designed this type of barrier works real well, prevents the car from rotating, tipping over.

This is our standard design. This is a typical damage on the road from a hard collision; as you can see it more or less duplicates our test findings.

One beauty of this particular barrier design is that light dents do not need repairs.

This is typical damage of our cable barrier and as you can well imagine, with trucks out there to repair this barrier in a relatively narrow median, requiring the closure of the high-speed lane, we no longer use it in such locations. This is the typical location in which we use it. In places where it is relatively flat, we have plenty of room to get out and repair any damage that may occur.

Whenever we have to place ditches for drainage, we either try to get them 6 feet away from the cable barrier or right up within a foot of the barrier.

Any flexible system or semiflexible system, we feel that some space is needed to get our repair trucks in to repair any damage that might occur.

In a semirigid system, we need less space, we can use it in the narrower medians, need less repair, we do not have to stop the traffic at all.

We use this rail in interchange structures, or bridges, where we need sight distance. In other words, where cars are coming up from the side, both the car on the freeway and the approaching car needs to be able to see the approaching traffic. This is the New Jersey concrete barrier. We feel that there is a place for using this barrier in very narrow medians, where repairs should be held to a minimum and interference with traffic held to a minimum. This is our standard bridge rail we use in most locations, throughout the State of California. (End of film.)

(At this point Mr. Blatnik resumed the chair.)

Mr. CONSTANDY. We have a third film, Mr. Chairman, if we have an opportunity at the end of the other witnesses' presentation to see it. It relates to short section of guardrails and the necessity for them to be anchored.

There are a couple of things that come to mind. Do you use the chain link fence I believe you developed?

Mr. BEATON. Yes.

Mr. CONSTANDY. Initially, did you have some difficulty with the turnbuckles?

Mr. BEATON. We had difficulties with the early turnbuckles because they were large and bulky and they snagged the car. We, therefore, went through a series of tests, redesigned these to the same size of the cable by using high strength steel, a pipe type.

Mr. CONSTANDY. I think that you also initially had two heights of cable, did you not?