

ports, the culverts and such as that. I am real happy to report that most of the bad things I saw have been under discussion by the bridge committee for some time.

To the best of my knowledge steps are being taken to correct them. We are making a sincere effort to eliminate the curves and be sure that there is no obstruction there for the car to hit. We are also looking at our bridge rail design to be sure that we have a rail that is somewhere between one that stops you so cold that you die and so weak that it lets you go through so you die. There is a medium there someplace that we are trying to achieve.

Our new sign manual will be out the latter part of this year. That sign manual is being updated to incorporate all the latest safety features that we can think of. It is very easy to alibi some of those pictures.

The people who drew them and built them, I understand they were building for permanence, and they wanted to place supports up out of the ground so they would not rust. They wanted to make them strong enough so they did not have to replace them. But in retrospect, maybe we can see maybe they overdid it. Some of the critical faults I noted were simply caused by the fact that the bridge spans were too short. Some of the rails did not continue through and protect the intermediate columns. To do so would have infringed on the very narrow clear space that we were trying to achieve.

What we are going to have to do, and we are recommending to the bridge committee, is that these spans be longer so there is plenty of room for the guardrail, either being long enough to not require guardrail, or if we do have to require guardrail, for goodness sake, make them long enough so the guardrail does not infringe on the safety area.

We are doing this by a series of task subcommittees. It all goes back to cost. Bridge engineers can design almost any type of bridge that is required. He is always controlled by the amount of money.

We have an everlasting trying time to design a beautiful safe bridge within the money we have. So to take care of these, we have some subcommittees that are continuing to work on new materials, new designs, in an effort to so we can build safer bridges and more beautiful bridges.

It may be of some interest to know that there was a contest sponsored about a year ago—some bridge engineers were judges—and they chose as a winner, not the most economical bridge or the bridge with the cheapest span, but they chose as a winner the bridge which did offer the most pleasing appearance and safety features.

I think that is a new trend in bridge engineers' thinking. I was a bridge engineer many years ago and grew up in the school of frugality. And I am glad to say that some of the new schools are looking a little further in the future and are trying to get new safer bridges for the benefit of all.

Mr. W. MAY. Thank you very much.

Mr. McCARTHY. Mr. McEwen.

Mr. McEWEN. I would like to ask Mr. Goodman, as chairman of AASHTO Committee on Bridges and Structures, are you giving consideration, Mr. Goodman, to the elimination of these large concrete abutments on the ends of your bridge rails? We have had quite a few