

knowledge into the hand of those who are actually picking out the design that goes at this particular place and make sure that it is applied.

You must realize that in many cases this will involve an expenditure of more money than they are spending now. If we put in more posts this costs more money; if we put in longer lengths of guardrail, which in many cases is needed, this also will cost more money—not a lot more but some more. We have to recognize that we cannot do the excellent job that our knowledge will let us do, for the same money we are now spending.

Mr. CONSTANDY. I think it is worth recognizing this, that the expenditure of additional money does not necessarily mean it is less economic. It may be more economic to spend the additional sum of money to make effective a mechanism in which you already have investment and which will fail if you do not improve it. Mr. Huff?

Mr. HUFF. It has been a privilege to me to see all the pictures you have shown. However, I have not seen anything very new because I have traveled over most of these States by automobile, as well as some of the States that have not been shown. I think I have seen them all generally, what you have shown. Most everything you have shown is subject to criticism, valid criticism.

We have seen places the chairman pointed out this morning where a guardrail was built where it should not have been, and places where a guardrail should have been built, where it was not built.

I think that is a very valid point he made, and in my opinion we have in most cases built too much guardrail.

I think that one danger we have, and I voiced this to the panel at noon, and other times, is getting into the smug feeling that we know now how to build a safe guardrail. If we do not watch ourselves, we will put all our eggs in one basket and find out we have come up with something that is not satisfactory.

Now we have got a lot of people studying this subject, and we should keep them studying it, and possibly we should try innovations that we experts have not thought of before.

I would like to go back with you in my own experience. I guess I could claim to be the senior member of this panel without any argument. I have been in the business a little over 40 years, in highway engineering. Now to my certain knowledge, construction of guardrail up until—this is the State I have been involved in—up until somewhere around 8 to 10 years ago, was mostly the function of our maintenance people. There was no engineering control involved. Now, some 8 to 10 years ago, I suppose 10 years ago, we began placing this under engineering control and I think we have gone a long ways in the 10 years that we have been working on this, and I believe with people like the traffic engineers here and a great many other people who I know will begin instituting improvements you might have another get-together 5 or 10 years from now, and we would be in wonderful shape.

I believe once you get it under engineering control, the problem will be solved.

Mr. CONSTANDY. Mr. Wilkes?

Mr. WILKES. Well, we have heard some difference of opinion expressed in the panel itself, and to illustrate that, there is not uniform