

Mr. BEATON. That is right. A little over 2 feet. This is because of the jump of the car as it goes over the curb, or dynamic response.

Mr. CONSTANDY. Quite a significant thing, then.

Mr. BEATON. Yes, it is. Actually, we found later that the additional height need not be added as long as the barrier was set back no more than about a foot from the face of the curb. This is because of the dynamics of the suspension system of most automobiles which I will illustrate in the movies later.

This work finished for a time our development of bridge curbs and rails and we turned to the median barrier problem in 1958. Here the rapidly increasing volumes of traffic on our various freeways were starting to result in many severe cross-median head-on collisions. A two-pronged attack was initiated on this problem—one by our traffic department to determine the parameters of the overall problem, and one by ourselves using the dynamic information gathered during our bridge rail studies to attempt to develop median barriers if they were found to be needed.

We felt that a median barrier should, No. 1, prevent crossovers. This was its first duty.

No. 2, it should minimize possible injury to the occupants of colliding cars.

No. 3, it should minimize the possibility of secondary collisions resulting from cars careening from the barriers.

Mr. CONSTANDY. Just to restate that, you initially want to prevent penetration of the automobile into the opposing lane of traffic.

Mr. BEATON. Right.

Mr. CONSTANDY. You want to reduce the forces of deceleration to those humans within the cars.

Mr. BEATON. Right.

Mr. CONSTANDY. And you want to redirect the vehicle on a path parallel to the road so that it does not go back into the adjacent lane of traffic and cause another accident.

Mr. BEATON. That is right; yes.

From their studies, the traffic department determined that the occurrences of cross-median headon collisions were directly related to the volume of traffic and that median barriers could save lives if properly placed; however, it was emphasized that the placement of median barriers would cause an increase in accidents. In other words, there were many out-of-control cars which invaded the median area without becoming involved in an accident.

Mr. CONSTANDY. Could you explain that a little bit?

Mr. BEATON. Well, if you have a median area with no obstructions in it, in other words, it is absolutely clear, then the car may have a chance of recovery and come back to the traveled way. However, as soon as you install median barrier, then there is an object that can be struck. In other words, you have cut down the evasive area, let's call it, the defensive area, in half, so they fight off to strike the barrier and then they become an accident victim.

Mr. CONSTANDY. I see.

Mr. BEATON. Years of experience have proven these findings to be accurate. The fact that the accident rate would be increased by the placement of median barriers even though lives would be saved made