

Surprisingly, the majority of these accidents—approximately 80%—were one-car off-road accidents, not two-car collisions!

In these accidents the drivers involved lost a total of 64 days due to injuries.

The cause of these statistics became evident in a review of the 1958 road system. While the road surfaces were wide and safe, the immediate roadsides were laden with obstacles as the test roads had been built to the same standards as our public roads. Accordingly, many trees were left at the edges of the roads, and steep banks and grades were left untouched. In addition to these natural obstacles, it became apparent that sign posts, bridge abutments, and other man-made structures also presented severe hazards.

Since emergencies sometimes cause vehicles to leave the road, it was determined that accident-producing hazards should be eliminated to create a wide, safe emergency lane.

Trees are one of the most common obstacles along roads of all types, and while beautiful, they are among the most dangerous, even in residential areas where speeds are low. The extreme danger of tree impacts is further illustrated by this 45-mile per hour test.

(Show a remotely controlled car occupied by life-sized test dummies not restrained by seat belts.)

Thousands of motorists are killed each year in tree impacts such as this, and even speeds as low as 25 miles per hour can easily result in serious passenger injury.

Despite knowledge of their deadly potential, trees are still planted at the sides of many of our newest highways and will soon become hazards.

Along major thoroughfares, the obvious solution is tree removal, and with modern equipment, the cost is moderate. Once the site is regraded and seeded in grass, this section of once-dangerous roadside will be safely traversible and will blend nicely with the surrounding terrain.

The addition of small shrubs and bushes creates a still more pleasing appearance and illustrates that a safe roadside can be attractive without trees. The Proving Ground has hired landscape architects to develop roadside plantings that will provide maximum beauty and safety.

Additional benefits of the clear roadside are a more open appearance and increased visibility at drives and cross streets.

While tree removal is the most practical, the Proving Ground does not advocate the destruction of century-old landmarks such as this. To preserve the tree and yet safeguard the motorist, a section of guardrail is probably the best answer. and this correction has been used in some locations on the Proving Ground.

Although tree-lined streets enhance the beauty and value of any residential area, they are dangerous and some means should be developed to provide the protection necessary without adversely affecting the appearance of the street.

Broken lamp posts are a common sight along our roadways and are mute reminders of the thousands of serious and fatal accidents they cause yearly. Massive light and utility poles should be eliminated or set back from the roadside substantially. On depressed roadways such as this, relocating the posts well up the slope would eliminate the problem.

Another solution possible is to change the design of the poles to a light, tubular construction that will shear-off when impacted. This unit was designed and built by GM engineers to test the practicality of this approach.

By minimizing deceleration at impact, poles of this type could reduce the severity of these accidents.

Large sign posts and similar roadside markers are also very dangerous, and these, like trees, should be eliminated from the roadside.

Signs that are essential on highways should be protected by heavily reinforced guardrail.

Small signs at the roadside are also hazards. Observe the results of a 40-mile-per-hour impact into the common 42-inch high sign.

At 40 mph, the sign pierces the windshield and showers the front seat occupants with glass! At higher speeds, the danger may be greater.

Increasing the sign height to 60 inches proved safer.

At 40 miles per hour, the car passes safely beneath the sign. As an added margin of safety, all Proving Ground signs are now mounted at a minimum height of 66 inches.

Irregular surfaces beside the road can be nearly as dangerous as projecting obstructions, as skidding into a deep ditch or hitting a steep bank can cause severe damage and injury.