

# SAFETY

- What is the expected severity of the problem?
- What should be the role of the Federal Government in traffic safety?
- What are the major issues and policy options?

## The Safety Problem

Our most popular transportation system, the personal automobile, is also a significant cause of death, injury, and property damage. Most of us recognize this, and few would argue against the desirability of reducing traffic crashes. Controversy arises about how best to improve auto safety. The definition of "reasonable" levels of safety, establishing the amount we are willing to pay for a safer system, and the division of responsibility for safety improvements between private industry, the Government, and the individual are all keenly debated issues.

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*Cars are leading killers of young people in the United States according to the Public Health Service. This age group has less driving experience; and they are less susceptible to other killers such as heart disease and cancer. But the fact remains that in the 15 to 34 age group, traffic crashes are the leading cause of death.*

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Congress has recognized the need to improve motor vehicle safety. With the passage of the National Traffic and Motor Vehicle Safety Act of 1966 and the Highway Safety Act of 1966, Congress set the goal of reducing traffic crashes and the resultant deaths and injuries. This action resulted in new car performance standards, vehicle defect investigations, and enactment of safety standards for highways, drivers, and other elements of the automobile transportation system.

Through the combined efforts of Federal, State, and local governments and with the help of industry, we are making progress. Since 1966 the rate of traffic fatalities per vehicle mile has

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The issues raised in this section are discussed in more detail in chapter 7 of the Technical Report.

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been reduced nearly 40 percent. Nevertheless, the statistics indicate that we still have a problem.

## Traffic Safety Data, 1977

Crashes <sup>a</sup> . . . . .	17,600,000
Vehicles involved <sup>a</sup> . . . . .	29,800,000
Injuries <sup>b</sup> . . . . .	4,392,000
Deaths <sup>c</sup> . . . . .	47,700
Auto occupants . . . . .	27,400
Pickup and van occupants . . . . .	5,200
Motorcycle . . . . .	4,100
Pedestrian and cyclist . . . . .	8,600
Truck, bus, and other . . . . .	2,400
Estimated costs <sup>d</sup> . . . . .	\$44 billion

<sup>a</sup>OTA estimates from National Safety Council data.

<sup>b</sup>U.S. Public Health Service estimates.

<sup>c</sup>U.S. DOT Fatal Accident Reporting System, figures rounded.

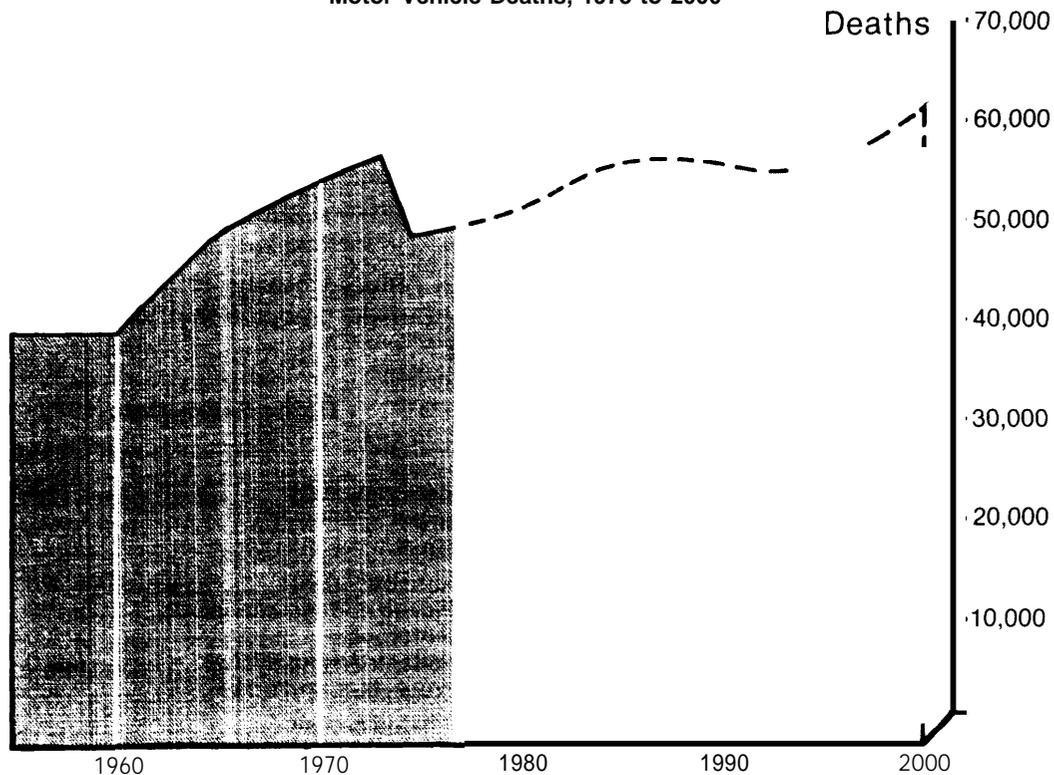
<sup>d</sup>U.S. DOT, updated data, originally from "1975 Societal Costs of Motor Vehicle Accidents." This figures does not include costs associated with pain, suffering, loss of relationship, etc.

## Trends to the Year 2000

Historically, the number of crashes per vehicle mile traveled has been decreasing, but the number of crashes and resulting injuries and deaths have steadily risen, largely because there are more drivers, more vehicles, and more miles traveled. There are several factors that may increase the severity and magnitude of the safety problem in the future.

- VMT is expected to rise, as is the number of vehicles and drivers.
- The proportion of small cars in the vehicle fleet is expected to rise.
- The percentage of trucks in the fleet and truck VMT are expected to increase.
- Highways are deteriorating at a rate faster than they are being maintained. Unless maintenance is emphasized, the condition of roads could contribute to an increase in crashes.

Motor Vehicle Deaths, 1975 to 2000



SOURCE OTA projection using Base Case VMT adjusted for total vehicle travel

## Federal Involvement

With the passage of the National Traffic and Motor Vehicle Safety Act of 1966, and the Highway Safety Act of the same year, the Federal Government embarked on a course of large-scale involvement in the U.S. automobile-highway system. The issue was safety and the clear need to act in the public interest.

New vehicles must comply with some **50** performance standards before they can be sold to the public. A recent study by the General Accounting Office estimates that the enforcement of these standards may have saved as many as 28,000 lives from 1966 to 1974.<sup>6</sup>

In addition, the National Highway Traffic Safety Administration has an aggressive vehicle defect and recall program. In the period 1966 to 1975, 52 million vehicles, or 43 percent of auto-

mobiles produced, were recalled for safety defects.

Other Federal activities under the Highway Safety Act include driver education, highway design, traffic laws, and accident investigation.

## Analysis of Safety Factors

The widespread use of seat belts would bring about an immediate reduction in vehicle occupant deaths and injuries. Both the Department of Transportation (DOT) analysis and our own study indicate the most effective approach to achieving greater seat belt usage is by means of a mandatory seat belt law. Whether or not this action is politically acceptable is debatable. Other incentives for increasing seat belt usage, such as insurance rate penalties, also merit investigation.

Passive restraints are mandated for all new passenger cars by the 1984 model year, but the fleet will not be fully equipped until the 1990's. Of the future restraint systems being considered, the most effective is expected to be the air cushion with the use of a lap belt.

<sup>6</sup>*Effectiveness, Benefits, and Costs of Federal Safety Standards for Protection of Passenger Car Occupants*, Report to Committee on Commerce, U.S. Senate, by the Comptroller General of the United States, July 7, 1976.



In 1974, the number of traffic fatalities decreased 9,000 from the previous year. The enactment of the 55-mph speed limit is considered to have been an important factor in this reduction. Again, studies by DOT and our own analysis indicate that strict enforcement of the 55-mph speed limit would be an effective means for reducing deaths and injuries.<sup>2</sup>

The strong correlation of alcohol use and fatal crashes has been demonstrated. Our analysis confirms this correlation and indicates that methods — policy-related or technical — designed to reduce drunk driving could have a high payoff.

At present, passenger vehicles meet Federal standards for crashworthiness in impacts of up to 30 mph. Higher levels of crashworthiness are possible and would help reduce death and injury. Preliminary results of the Research Safety Vehicle program of DOT indicate that high levels of vehicle safety can be achieved at an acceptable cost, while also meeting fuel-economy requirements.

#### The design and condition of the highway and

<sup>2</sup>The 55-mph speed limit also contributed to reduced fuel consumption,

its surroundings have an important influence on the incidence and severity of crashes. About half of all crashes fatal to automobile occupants involve only one vehicle—most frequently collision with a fixed object in the roadside. Important safety benefits could be realized by removal of roadside obstacles and improved highway design.

#### **Goals**

Specific quantitative goals and the resulting standards for vehicle emissions and fuel economy have proved to be an effective approach. A first step to achieving better highway safety might be the establishment of specific and quantitative goals. These goals could be expressed either as targets for reduction of highway death, injury, and property damage, or as a scheduled reduction in the rate of crashes as a function of VMT.

We recognize that setting safety goals—as well as establishing the plan and lines of responsibility for achieving them—would be a difficult process. Still, the possible effectiveness of goals as a means of promoting automobile and highway safety is a topic that deserves further study.

## FINDINGS

- . Traffic safety remains a perennial problem that will probably grow as the auto fleet and number of drivers increase.
- . Federal involvement in automobile safety has been effective in the past, and continued Federal presence appears needed.
- . The establishment of specific quantitative safety goals may be an effective first step to achieving improved safety, and the subject should be evaluated further.
- . In the near term—the next 5 to 10 years—the greatest safety benefits could be realized from:
  - increased use of seat belts,
  - strict enforcement of the 55-mph speed limit, and
  - reduction of alcohol use associated with driving.
- . To achieve a higher level of vehicle safety, a long-range plan should include:
  - improved auto crashworthiness,
  - improved occupant restraint systems, and
  - improved vehicle designs to mitigate pedestrian injuries.
- . There are a number of highway improvements, primarily elimination of roadside hazards, that appear to be cost-effective.