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# Changes in the Future Use and Characteristics of the Automobile Transportation System

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## THE AUTOMOBILE—TODAY AND TOMORROW

The private automobile has provided us with a degree of personal mobility unparalleled in history. It allows great freedom of choice in places of employment and residence; provides access to shopping, education, and essential services; and offers the means to reach recreational and cultural activities—all of which have contributed to improving the quality of life in the United States. In addition, the automobile manufacturing industry and its supporting service industries area major part of our economy.

Let's look at a few statistics. The automobile manufacturing, sales, and service industry employs about 5 million workers, representing almost 5 percent of the total U.S. labor force. If the picture is expanded to include all transportation-related industries, the employment figure is estimated to be as high as 1 out of every 6 to 8 U.S. workers. Annual revenue from manufacturing, sales, and supporting services is approximately \$150 billion.

Today more than 80 percent of U.S. households own one or more cars, more than 90 percent of personal travel is by automobile, and there are now more than 100 million passenger vehicles\* on our streets and highways.

Ironically, the remarkable success of the automobile transportation system has given rise to problems. In addition to the benefits it has provided, the automobile transportation system today is responsible for:

- consuming about one-third of the petroleum used in the United States each year,

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\*For purposes of this study, the automobile is defined as a vehicle designed primarily for private passenger use. Lightweight trucks and vans were excluded.

which contributes substantially to the balance-of-trade deficit, increasing oil imports, and inflation;

- discharging 80 million tons of carbon monoxide, hydrocarbons, and nitrogen oxides into the atmosphere annually;
- producing an annual toll of nearly 48,000 deaths, and 4.4 million injuries, at a cost to society of over \$40 billion dollars;<sup>2</sup> and
- increasing congestion on streets and highways, resulting in lost time and wasted energy.

Clearly there are both benefits and problems in the automobile system. Achieving a desirable balance among energy efficiency, emissions, safety, performance, comfort, and cost will involve tradeoffs between these sometimes competing attributes.

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<sup>2</sup>These figures are total highway deaths and injuries. Of the 47,700 fatalities in 1977, 32,600 were auto and light-truck occupants, 8,600 were pedestrians and cyclists, 4,100 were motorcyclists, and 2,400 were heavy-truck and bus occupants.