Chapter 13

Transportation

Oklahoma migrants stalled on a New Mexico highway in May 1937. In that year, there were twenty-four registered vehicles per mile of surfaced road; sixty years later, there were fifty-seven. Photograph by Dorothea Lange. Courtesy of Library of Congress.
Travel within the United States increased enormously, while the modes of travel changed.

Passenger traffic on American railroads grew steadily from the late 1800s until the 1920s, when the bulk of intercity travel shifted to the private automobile and rail travel began a decline that continued until World War II. When wartime gasoline rationing and the suspension of auto production made cars less available, the railroads were pressed back into service to accommodate the great volume of travel by soldiers and war workers. Intercity bus lines, whose operations had been very limited before 1940, expanded to carry part of the load.

After the war, the decline of rail passenger services resumed. Most rail companies abandoned passenger service altogether. Many passenger stations were razed or abandoned, and most railroad cars were taken out of service. In an effort to salvage the vestiges of the rail passenger network, Congress created Amtrak in 1970. After taking control of rail passenger service from the private rail companies the following year, Amtrak continued to operate with federal subsidies and carried about half of the remaining rail passenger volume. Commuter lines accounted for the rest.

Less than a decade after taking control of the nation's passenger railroads, the federal government deregulated the nation's airlines. The great expansion in air travel that began after midcentury is projected to continue indefinitely, putting constant pressure on air transit facilities but offering speedy and safe transportation.

Bus travel provided a low-cost alternative for travelers who could not afford the price of a seat on an airplane or a train. Bus travel retained a small but relatively stable niche.
Unlike rail passenger traffic, rail freight traffic continued to grow with the national economy. More tonnage was carried by rail than by truck. And the combined tonnage carried by less visible modes of transportation—inland waterways and oil pipelines—exceeded the tonnage carried by truck.

But the value of truck shipments was much higher than the value of rail, waterway, and pipeline shipments. Railroads, waterways, and pipelines tended to carry bulk cargoes, while trucks typically carried finished goods. In 1997, trucks carried less than half of the total ton-miles of freight, but almost 90 percent of the total value.

The great expansion of truck traffic after 1950 coincided with the construction of the interstate highway system. The increasing use of heavy trucks for shipping time-valued goods of all kinds was a major factor in the growth of the suburbs, commercial strip development, industrial relocation, and other centrifugal trends that reshaped American communities.

Despite the growing importance of air express and air package services, air freight does not appear on the chart. Only a fraction of 1 percent of intercity freight tonnage—and only 3 percent of intercity freight measured by value—moved by air. But air freight occupied a critical niche for time-sensitive items such as cut flowers, fresh seafood, and zoo animals.

Air freight statistics do not include packages shipped by the postal service and its competitors. The U.S. Postal Service alone shipped 1.2 million tons of mail by air in 1998. The United Parcel Service estimated that the packages it shipped in 1998 were worth about 6 percent of the Gross Domestic Product. The advent of Internet shopping also accelerated the growth of package delivery to consumers. Many of these packages moved by air at some point in their journey.
Intercity Common Carriers: Freight
Billions of ton-miles per year

- Railroads
- Trucks
- Pipelines
- Waterways

1900 = 142
1930
Waterways = 51
Trucks = 13
Pipelines = 1

1997
Pipelines = 628
Waterways = 508

1997 = 1,051
1997 = 1,421

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The number of motor vehicles exceeded road capacity.

In an effort to define the scope of the nation’s road system and the distances Americans travel on it, the U.S. Department of Transportation reported in 1997 that “the sheer physical size of the transportation network is difficult to comprehend. Its 4 million miles of roads would circle the globe more than 157 times or go to the moon and back more than 8 times. In 1995, cars and light trucks—the vast majority of them personal vehicles—were driven 2.2 trillion miles in the United States. This is literally an astronomical distance, nearly one-tenth of the distance to the nearest star outside the solar system. A more down-to-earth measure: the distance traveled by the average car or light truck in the United States in 1995 equaled a journey nearly halfway around the earth.”

The upper chart shows how the number of registered motor vehicles per mile of surfaced road (including city streets, county roads, state highways, and the interstate highway system) climbed from two in 1910 to fifty-seven in 1997. Because the chart is based on road mileage, it understates the effect of multiple lanes, which increase effective road capacity. On the other hand, it ignores the increased mileage of individual vehicles, which has an opposite and probably greater effect. The average daily travel per vehicle increased by 68 percent between 1980 and 1997, while miles of paved road increased by 14 percent.

As the lower chart shows, the number of miles traveled by motor vehicles in the United States increased steadily throughout the century. Individually owned passenger vehicles accounted for most of this travel. The overwhelming majority of employed persons got to their workplaces by private motor vehicle and most of them drove alone. Only 5 percent of commuters used public transportation. Many parents drove their children to school. Nearly all shoppers drove to the supermarket or the mall.
The annual traffic death rate fluctuated until about 1970, when it began to decline markedly. Deaths per vehicle-mile decreased throughout the century.

The motor vehicles that were so large a part of American life in the twentieth century took a heavy toll of casualties. Annual traffic deaths in 1970 (52,627) exceeded total American battle deaths during the Vietnam War (47,355). (See page 206). For every traffic death, there were about 100 traffic injuries. No other mode of transportation was associated with such large numbers of fatalities and injuries. In 1997, 92 percent of transportation-related deaths were occupants of passenger cars, light trucks, and motorcycles, or persons struck by one of these vehicles. The U.S. Department of Transportation logged more than 6 million highway crashes in 1998. In the same year, by contrast, U.S. airlines were involved in 48 crashes in which a total of one person died.

As the upper chart shows, the traffic death rate per 100,000 population in 1997 was almost exactly the same as it was in 1921, although it had been diminishing for nearly three decades.

The traffic death rate per mile traveled, shown in the lower chart as deaths per 100 billion vehicle-miles, declined steadily during the century. Between 1925 and 1997, this rate declined by 91 percent.

The seven-decade decline in the traffic death rate per mile traveled reflects the steady improvement of brakes, lights, steering gear, and tires; the introduction of safety equipment such as seatbelts, padded interiors, crumple zones, and airbags; improved highway design and signals; better driver education; and the slowing of traffic by increased congestion. The decline in the absolute number of fatal traffic accidents after 1990 can be attributed to a significant reduction in drunk driving.

Alcohol was said to be a factor in about two-thirds of fatal vehicle accidents around 1970. In 1985, the earliest year for which precise figures are available, 52 percent of fatal accidents involved drunk drivers; that figure was down to 41 percent by 1995.

The greatest number of fatal accidents involved a single vehicle, usually a passenger car, colliding with an immovable object or a pedestrian or cyclist. The most dangerous drivers were under age twenty-four and over age eighty. The wide-open highways of the Mountain States were the most dangerous per vehicle-mile. The crowded streets and country roads of New England were the safest.
Bicycles, like horses and sailboats, did not disappear when they were superseded by motorized transportation.

As the chart shows, the annual production of bicycles declined after 1900 with the advent of the automobile, along with the construction of subways and elevated railroads in large cities and interurban streetcar lines in smaller cities. But the Depression of the 1930s forced many commuters back to bicycles, and gasoline rationing during World War II had the same effect.

In the prosperous 1950s, the bicycle ceased to be an important means of commuting to work but became a primary mode of transportation to school and places of recreation for many high school and college students. The annual production of bicycles more than doubled in the six years between 1954 and 1960, and then doubled again in the following decade. This upward trend persisted as students continued to depend on bicycles, and great numbers of adults took up bicycle riding for exercise and pleasure. In 1990, almost 11 million bicycles were added to an existing stock that probably exceeded 50 million.

Other archaic modes of transportation—horses, boats, and even balloons—that no longer had much practical utility, continued to thrive as well. At the end of the century, families kept more than 4 million horses for riding, driving, or companionship. Although the age of sail came to an end around 1920, Americans still used the force of the wind to propel innumerable watercraft, from windsurfers to ocean cruisers, on ponds, lakes, rivers, bays, estuaries, and the open ocean. The Wright brothers' invention of the airplane eclipsed hot-air balloon technology, but people continued to enjoy aerial sightseeing from the balloons.
Millions sold per year

1900 = 1.1
1990 = 10.8

Bicycles

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