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of the environment, the cultural roots of our passion for cars run deep. It could be that the best hope for the future is an "adjusted" technology such as hybrid automobiles. However, petroleum will remain a national necessity. That is the basic environmental impact of the automobile industry.

Regardless of the location of future supplies, the fact remains that petroleum is a finite resource. The petroleum age, agree most scientists, will near its end by 2050. Modern technology, unfortunately, allows us to account rather exactly for this certain demise: we have guzzled 800 billion barrels during the petroleum era; we know the location of 850 billion barrels more, which are termed "reserves"; and we expect that 150 billion barrels more remain undiscovered. Simply, there is an end in sight. New energy sources will need to be found if we want to continue our love affair with the automobile.

Sources and Further Reading: Belasco, Americans on the Road; Bradsher, High and Mighty: SUVs: The World's Most Dangerous Vehicles and How They Got That Way; Doyle, Taken for a Ride: Detroit's Big Three and the Politics of Pollution; Fink, The Automobile Age; Kay, Asphalt Nation; Marcello, Ralph Nader: A Biography; Schiffer, Butts, and Grimm, Taking Charge: The Electric Automobile in America.

THE EMERGENCE OF AMERICA'S "SUV HABIT"

Time Period: 1986 to the present
In This Corner: Car manufacturers, American consumers
In the Other Corner: Planners, ecologists, architects
Other Interested Parties: Politicians
General Environmental Issue(s): Transportation, planning, energy

In the 1960s, before the lessons of embargoed oil, Watergate, and catalytic converters, a fatal meeting between two very wealthy Americans helped to determine an important portion of the next phase in Americans' relationship with the automobile. Roy Chapin, who descended from some of the nation's earliest automobile tycoons and had come to head the AMC, spent a weekend at his southern Ontario hunting lodge with Stephen Girard, one of the leaders of Kaiser Jeep, maker of one of the world's first four-wheel drive vehicles (Bradsher 2002, 13).

Convinced that Americans wanted to buy cars and not Jeeps, Girard was actively looking to dump the Jeep on another company. Although the deal took a number of years, in 1969 AMC purchased the specialized Jeep for $10 million and millions more in stock options. This came just in time for the 1970s oil crisis and almost pulled AMC, the smallest of the Detroit manufacturers, into bankruptcy. Who would have thought that ultimately, however, the Jeep would be just what Americans yearned for.

In the words of the comedian George Carlin, Americans of the late twentieth century may go down as most memorable for our passion for collecting "stuff." When we have a lot of stuff, when we are a nation prioritizing consumption, it follows that we would prefer to have the option of taking our stuff with us. In an odd, winding road of logic, regulation, and petroleum scarcity, Americans' relationship with petroleum during the late 1900s became tightly wound into economic status and the rise of the trophy-like technological achievement of the American SUV. Ironically, this passion developed simultaneously to strong new calls for conservation and efforts to find ways of using less petroleum.

The "stuff" that the Jeep was a symbol of at its creation was the embodiment of the cultural values of the nation. From the late 1960s through the end of the 1980s, the "big three" American manufacturers manufactured nearly all of the market's light trucks, the only exception being the British-produced Land Rover.

The SUV was an automobile for people who had an "oddball" attitude toward "conventional" automobile ownership. They were climbers with the "love affair thing," people who bought the Jeep as an "adjustment" to their love affair with the automobile industry. The SUV was an "adjustment" to their passion for the automobile, and the automobile industry saw itself as the leader in this "adjustment" process.
The SUV as Unintended Consequence

For the United States, a century of energy decadence came to a screeching halt during the 1970s. Politicians could no longer appear to be taking their responsibilities seriously without at least proposing ideas on the subject of energy use and conservation. However, few individuals agreed with each other on how to proceed. In the end, this active disagreement might be part of the reason that many of the 1970s attention to energy use disappeared as quickly as it came.

For American manufacturers, the future became the stipulation within the CAFE legislation that the fleet be broken down into cars and light trucks. Which came first, the American consumer’s taste for large vehicles or the manufacturers’ emphasis of these models? It appears to be a hand-in-glove, synchronistic relationship. The irony, however, is that the policies created to conserve petroleum supplies spurred the increase in vehicle size and weight traveling American roadways. When AMC bought Jeep and began its work as the first American manufacturer to aggressively market such a vehicle, the concept of the SUV did not exist.

Similar to the fictional Dr. Frankenstein, auto manufacturers carefully studied the new guidelines of the 1970s and concocted the best hope for their industry’s future. Instead of pursuing the efficiency mandated by the new guidelines (a course they would leave to Japanese manufacturers), American car makers found a loophole and exploited it. Their Frankenstein was the large SUV sought by many Americans in the twenty-first century.

Initially, the primary issue for manufacturers was vehicle weight. This is measured as “gross vehicle weight,” which is the truck’s weight when fully loaded with the maximum weight recommended by manufacturers. Instead of the 10,000 pounds used for trucks, light trucks were initially set at 6,000 pounds. Automakers realized that they could escape the light truck category all together by increasing the weight of their vehicles, so, as journalist Keith Bradsher wrote, “[they] shifted to beefier, less energy-efficient pickups even in a time of rising gasoline prices rather than try to meet regulations that they deemed too stringent” (Bradsher 2002). In 1977, the maximum for light trucks was raised to 8,500 pounds. In 1981, Ronald Reagan took office and made one of his first priorities to freeze most auto regulations where they now stood. By the late 1990s, one expert defined the ubiquitous SUV in this manner: (1) four-wheel drive available, (2) has an enclosed rear cargo area, (3) has a high ground clearance, (4) uses a pickup-truck underbody, and (5) is designed for urban consumers and is marketed primarily to them.

What began as gimmicky, the small-selling vehicle for a specific purpose morphed into ubiquity through the odd convergence of consumer taste and auto manufacturers’ interest in exploiting a specific niche in new vehicle regulations. As defined by the CAFE standard, a light truck is any four-wheel vehicle weighing less than 8,500 pounds that is not a car. Although arbitrary, this category, therefore, includes vans, minivans, pickup trucks, and SUVs. “In the mid- to late 1980s,” wrote sociologist James D. Gartman, “upscale demands for functionality and distinction” brought small-market, specialized vehicles into the mainstream (Gartman 1994, 222).

Each of the light trucks had been used for specific activities for many years. Most famous, the Jeep (mentioned above) pioneered the four-wheel-drive design to allow military users flexibility not possible with the animals used in World War I. By World War II, the Jeep was a symbol of the American military. Built originally by Ford and Willys-Overland, the
best explanation for the name Jeep derives from G.P., short for “general purpose.” Willys began making a Jeep station wagon with four-wheel drive in 1949; however, it still only had one door on each side. During the 1960s, this vehicle grew to be the Jeep Wagoneer, which inspired the Ford Bronco and other vehicles.

It is the Chevrolet Suburban, however, that is credited with being the world's oldest SUV or light truck nameplate, a product continuously in circulation. In 1935, the Suburban was advertised as a delivery truck, whether used as a hearse or for delivering illicit moonshine. Not until the 1960s did Chevrolet add a door on each side, and it was 1967 when a four-door model was offered. (Bradsher 2002, 6) In terms of automobile taste, Gartman suggests that the large trucks contradicted almost everything that typical American consumers desired: in 1970, 14,000 light trucks were registered, whereas nearly 90,000 cars filled America’s roadways. Although AMC made the Jeep available to many more American consumers, it remained a rough, difficult-riding truck.

CAFE standards initiated changes in the vehicles made available to American consumers. One of the clearest changes of new legislation was the weight of cars. Since 1978, the average weight of domestic and imported cars dropped nearly 1,000 pounds, from 3,831 to 2,821. Although there are many variables to factor in, we can at least say that, overall, the weight of the cars on American roadways has decreased since the 1970s.

In creating the category of light truck, however, American manufacturers found their safety valve. Of course, this new category of vehicles contained very few vehicles when the standards were set [decades at approximately 10 percent of entire fleet (Volit 2006, 143)]. The light-truck share of the passenger vehicle fleet rose to 20.9 percent in 1975 and to 39 percent in 1987. In 1995, this had risen to 41.5 percent. Remarkably, by the year 2000, there were almost an equal number of cars and light trucks on the road (approximately 85 million of each). In a bitter irony, the CAFE standards and ensuing legislation had created the opportunity to build large, heavy, inefficient vehicles, and, to the shock of the owners of AMC and other manufacturers, Americans wanted such vehicles.

The Anti-Conservation Vehicle

In short, under CAFE, large cars are penalized, small cars are subsidized, and light trucks are largely unregulated, and one could expect that both small cars and light trucks would grow in popularity.

Auto manufacturers realize these details only in hindsight. One of the best indicators of this changing taste in vehicle was the evolution of AMC’s Jeep as it blazed the way forward in the new SUV category. From the army Jeep to the Commando, CJ5, and even the early Wagoneers, Jeeps were rough work vehicles with a tendency to rollover. AMC designers set out in 1983–1984 to create a more aerodynamic, four-door Jeep. The revolutionary design became the Cherokee.

When gas supplies grew and prices increased mid-decade, the Cherokee became one of the nation’s most popular vehicles. Most surprising, the sales were not in rural, specialized markets; instead, it was family-oriented, urban and suburban consumers who opted for the nation’s first bona fide SUV. To take advantage of these consumers, AMC created a limited model that sold even more briskly. The cycle was completed in 1987 when Chrysler bought American Motors for $1.5 billion. The main appeal was not the Pacer; it was the Jeep brand.
With the success of Jeep and its acquisition by Chrysler, Ford got through a generation of hesitation over developing a four-door SUV and released the Explorer in 1990. Combining the consumer interest for having such a vehicle with Ford's massive marketing capabilities, the Explorer proved the tipping point for the auto revolution begun by Jeep. Stating the Ford point of view, Stephen Ross explains, "An SUV buyer is almost anti-minivan—this is a buyer who has a family but doesn't want to broadcast a docile family message" (Bradsher 2002, 51). Ford's surveys left no doubt that consumers wanted the vehicle to have four-wheel drive, although the drivers were likely to never need it or, at least, to use it rarely.

During the 1980s, SUV sales rose from 1.79 to 6.49 percent. Gartman finds a striking contrast between the overall style of design behind these vehicles and models of the past. He wrote, "Most of these erstwhile hauling and off-road vehicles could be seen whining along freeways and suburban surface roads, their engines struggling to maintain speed with absurdly low gearing and to overcome the resistance of high, square bodies and knobby, super- traction tires" (Gartman 1994, 223). Merging the attributes of the SUV with the luxury and comfort of large cars would be one of the challenges for automotive designers of the 1990s. Economists estimate that the growth of the light-truck category offset about 75 percent of the improvement that would have been seen from CAFE standards. The standard did not induce consumers to substitute small cars for large cars but to substitute light trucks for large cars.

**Conclusion: Super-Size My SUV, Please!**

Although the electric initiative was being fought again in locations such as California, American manufacturers presented American consumers with what they really wanted: the exact antithesis of the EV1. Large SUVs stepped into the SUV loophole exploited in the mid-1980s and blew it wide open. Pickup trucks, SUVs, and minivans had each been introduced into the marketplace to provide manufacturers with a way of meeting new CAFE standards. Light trucks, such as the Ford Explorer, provided automakers with an opportunity to slow the pace of their fleet's efforts to increase efficiency. To the manufacturers' surprise, however, the larger vehicles sold well. In addition, during decades of fast-moving wealth, these vehicles, costing well over $50,000, became a symbol of its driver's economic standard. Thanks to the sales of these large vehicles, Detroit's stock prices soared during the 1990s.

Of the late 1990s, automotive industry journalist Keith Bradsher describes the Big Three bringing prototypes for eighty-mile-per-gallon midsize cars to Washington for display, whereas back in Detroit they announced plans for twenty more versions of full-sized SUVs and pickups by 2003 (Bradsher 2002, 79–80). Only a few years previously, auto manufacturers had been sure that size did not matter to American consumers and that efficiency might have its day. The success of the first SUVs in the late 1980s, however, made Detroit take note. Negotiating additional benefits for increasing the size and weight of their fleet, American automobile manufacturers gave Americans what it appeared they wanted: even bigger, less efficient vehicles.

Auto manufacturers set out in the late 1980s to create economic enticements to make SUVs more attractive to American consumers. Light trucks were already exempt from the gas-guzzler tax created in 1978. In 1984, Congress had closed the depreciation law, which
allowed self-employed individuals to deduct the entire purchase price of their vehicle from their taxable income over just three years, which reduced their taxes. With this law in place, such individuals were enticed to buy larger, more expensive vehicles, because they would ultimately pay for only a fraction of it. The 1984 restriction made it less attractive to purchase a large car; however, it provided special consideration for trucks with vehicle weight greater than 6,000 pounds. Buyers of these heavy vehicles could still write off the entire purchase price (up to half in the first year and the rest spread over four more years). Because the previous model for depreciation had applied to trucks weighing 13,000 pounds or more when empty, the stage was set for Detroit’s next frontier of design and development.

In the mid-1980s, this new exemption applied primarily to full-size pickups, one of Detroit’s most exclusive products; with the positive reaction to the Jeep Comanche, however, manufacturers scurried to put more SUVs on the market. It made perfect business sense, then, to model these new vehicles with a weight greater than 6,000 pounds to attract business purchasers. In 1990, when Congress imposed a 10 percent luxury tax on cars costing more than $30,000, the law exempted light trucks with gross weights greater than 6,000 pounds. Therefore, the laws clearly helped to shrink other markets while creating new enticements for consumers to buy some of the largest, heaviest vehicles ever built.

With very few SUVs or minivans weighing more than 6,000 pounds, the next frontier for Detroit was obvious. Even the Chevrolet Suburban, which was the largest SUV on the market, met the weight class restriction but was not costly enough. At approximately $17,000, the Suburban was almost half of the $30,000 price tag on the luxury-tax benefit. The new vehicles needed to combine size, weight, and luxury in a way that vehicles never before had done to fully take advantage of the tax benefits and loopholes. They needed to be symbols of opulence.

Luxury versions of the Suburban, the Chevy Tahoe, and GMC Yukon each became available in 1994. These were followed before the end of the decade by the Ford Expedition and Lexus LX-450 in 1996, Lincoln Navigator in 1997, the Cadillac Escalade in 1998, Ford Excursion in 1999, and Toyota Sequoia in 2000. Unlike the luxury cars that they were replacing, large SUVs brought manufacturers massive profits, normally as much as $15,000 per vehicle. In most cases, these vehicles almost single-handedly saved the Big Three during the 1990s. For instance, Ford’s initial plan in 1996 was to stick the Expedition body on top of its F-150 pickup frame and to make 130,000 units and sell them for approximately $36,000 apiece. Their profit on each Expedition was $12,000. Faced with such profits, Ford shifted entire plants over to manufacturing Expeditions so that, by 1998, it could pump out 245,000 units per year. Its stock price rose more than 200 percent by the end of the decade. The impact of such a frenzy was obvious in the consumer market. In the luxury portion of the car market, cars made up 95 percent of all purchases in 1990. By 1996, cars made up only 44 percent of that segment! (Bradsher 2002, 154)

SUVs were originally designed for work crews, hunters, residents of snow country, and others needing to travel off-road. By the end of the twentieth century, however, they were the car of choice for soccer moms, secret service teams, business executives, sports stars, and gangster rappers. Thanks to a convergence of changes in air regulation and tax law, largely orchestrated by auto manufacturers and their hired lobbyists, while environmentalists and others attempted to develop new technologies for transportation, Detroit regressed. Paul Roberts wrote, “The SUVs represent the height of conspicuous energy consumption. The
The American Suburb, Sprawl Nation, and New Urbanism

Extra size, weight, and power of the vehicles are rarely justified by the way their owners drive them. Even though owners and carmakers counter that the SUV's greater size, weight, and capabilities provide an extra margin of safety, studies indicate that SUVs not only are more likely to kill people in cars they hit but, because they roll over more easily, can actually be more dangerous to their occupants as well (Roberts 2005, 154).

Viewed objectively—for instance, say as a scientist might—we must reflect on the remarkable data of the late twentieth century use of petroleum: from 1960 to 2005, amount of miles driven by Americans quadrupled; the market share of the light trucks grew from 10 percent to nearly 50 percent by 2001; and the largest-selling vehicles in the United States by the year 2001 had become two full-size pickups, the Ford F-150 and the Chevrolet Silverado.


The American Suburb, Sprawl Nation, and the Emergence of New Urbanism

Time Period: 1920s to the present
In This Corner: Economic and housing developers, American consumers
In the Other Corner: Planners, ecologists, architects
Other Interested Parties: Politicians
General Environmental Issue(s): Housing, sprawl, planning, New Urbanism

Possibly no landscape form has seen its image transformed as quickly as sprawl has since 2000. In just a few years, sprawl has gone from a model of successful economic development to a model of poor community planning that lacks foresight and good taste.

The United States stands as the world's capital of sprawl; however, nations around the world face similar challenges with the arrival of American-inspired economic development. It is the United States, however, that used the image of the suburb to crystallize a standard of living that became the envy of most of the world. For this reason, suburban development was allowed to proceed almost unchecked. By the 1990s, planners, environmentalists, and sociologists were criticizing aspects of the suburban life.

Communities and Spatial Preference

By definition, sprawl is a development pattern that only became prominent in the United States after World War II. Most important, sprawl is based on the decentralizing of the human population. Stylistically, it also ignores historical or ecological precedent and human experience. Although it may sound unappealing, sprawl has come to dominate nations such as the United States simply because of convenience.

From concentrated towns and cities, suburban development has led middle-class residents to construct satellite areas that are now referred to as sprawl. Until recently, this pattern was largely absent from the rest of the world. Throughout human history, most communities were centered about a common area, possibly a market, central structure, or an open area. Most habitation grew outward from this center and created urban areas.