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# THE INDUSTRIAL REORGANIZATION ACT

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HEARINGS  
BEFORE THE  
SUBCOMMITTEE ON  
ANTITRUST AND MONOPOLY  
OF THE  
COMMITTEE ON THE JUDICIARY  
UNITED STATES SENATE

NINETY-THIRD CONGRESS

SECOND SESSION

ON

**S. 1167**

**PART 4A—APPENDIX TO PART 4**

CONTAINS "AMERICAN GROUND TRANSPORT" AND "THE TRUTH ABOUT 'AMERICAN GROUND TRANSPORT'—A REPLY BY GENERAL MOTORS"

Printed for the use of the Committee on the Judiciary

(Pursuant to S. Res. 255, Sec. 4)





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# APPENDIX

## AMERICAN GROUND TRANSPORT

### A Proposal for Restructuring the Automobile, Truck, Bus, and Rail Industries

(Submitted to the subcommittee by Bradford C. Snell,\* February 1974)

#### INTRODUCTION AND SUMMARY OF FINDINGS

This is a study of the social consequences of monopoly. It shows that excessive economic concentration can restructure society for corporate ends. As an illustration, it focuses on three powerful automobile companies which eliminated competition among themselves, secured control over rival bus and rail industries, and then maximized profits by substituting cars and trucks for trains, streetcars, subways and buses. In short, it describes how General Motors, Ford, and Chrysler reshaped American ground transportation to serve corporate wants instead of social needs.

This is not a study of malevolent or rapacious executives. Rather, it maintains that as a result of their monopolistic structure the Big Three automakers have acted in a manner detrimental to the public interest. More specifically, it demonstrates that in the absence of vigorous competition, the automakers were naturally inclined to build oversized, high-profit cars which were energy-inefficient, unreliable, costly, unsafe and destructive to the environment. It also demonstrates General Motors to be a sovereign economic state, whose common control of auto, truck, bus and locomotive production was a major factor in the displacement of rail and bus transportation by cars and trucks. It notes, moreover, that these displaced methods of travel were energy-conserving, dependable, economical, safe and environmentally compatible. In sum, this study strongly suggests that a monopoly in ground vehicle production has led inexorably to a breakdown in this Nation's ground transportation.

We are witnessing today the collapse of a society based on the automobile. Unlike every other industrialized country, we have come to rely exclusively on large, gas-guzzling cars and trucks for the movement of passengers and freight. In the process, we have consumed much of the Nation's supply of oil, fouled our urban air with poisonous exhausts and turned our cities into highways and parking lots. Now we are confronted with an energy crisis that threatens to paralyze motor

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vehicle travel and reduce us to a level of mobility common only to less advanced countries.

The roots of our transportation malaise are several. This study purports neither to define nor to resolve all of them. They include, for example, a government bias in favor of highways rather than rail transit, an industry failure to produce transport vehicles consistent with energy resources and environmental constraints, and a consumer dependence on private automobiles to the exclusion of public transport. This study will argue, however, that to a considerable extent these are but outgrowths of a more fundamental problem: the economic and political control by three powerful automobile firms of all forms of ground travel. By proposing to reorganize these firms into smaller, more competitive units, it does not pretend to offer a blueprint for better transportation. Rather, it seeks to eliminate an otherwise insuperable obstacle to that end.

Part I briefly sets forth the relevant economic criteria for evaluating both competition in the motor vehicle industry and interindustry competition between motor vehicles and other forms of ground transport. It provides a basis for arguing that the breakdown in auto, truck, bus, and rail transportation was an inevitable result of monopoly structure. Although highly analytical in nature, it is essential to an understanding of the structural reorganization of General Motors, Ford, and Chrysler proposed in part III.

Part II describes the social consequences of shared monopoly in the auto industry. It notes, for example, that due to excessive concentration the Big Three auto firms have lost the ability to anticipate and adapt to change. Insulated from the discipline of competitive market forces, they have invested billions of dollars in the production of vehicles from a superseded technological age. To protect these huge sunk investments, they persist in building big, inefficient gasoline-consuming cars at a time when petroleum shortages have largely eliminated the demand for them. The implications for workers, dealers, shareholders, consumers and the economy in general are staggering: massive unemployment, growing inventories of unsold vehicles, plunging stocks, unfilled small car demand, and ominous signs of an auto-induced recession.

Part II also lays bare the social consequences of General Motors' domination of competing methods of travel. At the outset, it establishes that GM has both the power and the economic incentive to maximize profits by suppressing rail and bus transportation. The economics are obvious: one bus can eliminate 35 automobiles; one street-car, subway or rail transit vehicle can supplant 50 passenger cars; one train can displace 1,000 cars or a fleet of 150 cargo-laden trucks. The result was inevitable: a drive by GM to sell cars and trucks by displacing rail and bus systems. This section describes that process. It discloses, for example, GM's role in the destruction of more than 100 electric surface rail systems in 45 cities including New York, Philadelphia, Baltimore, St. Louis, Oakland, Salt Lake City and Los Angeles. More specifically, it describes the devastating impact of this widescale operation on the quality of life in America's cities.

Nowhere was the ruin from GM's motorization program more apparent than in southern California (see pp. 31-35). Thirty-five years ago Los Angeles was a beautiful city of lush palm trees, fragrant

orange groves and ocean-clean air. It was served then by the world's largest electric railway network. In the late 1930's General Motors and allied highway interests acquired the local transit companies, scrapped their pollution-free electric trains, tore down their power transmission lines, ripped up their tracks, and placed GM buses on already congested Los Angeles streets. The noisy, foul-smelling buses turned earlier patrons of the high-speed rail system away from public transit and, in effect, sold millions of private automobiles. Largely as a result, this city is today an ecological wasteland: the palm trees are dying of petrochemical smog; the orange groves have been paved over by 300 miles of freeways; the air is a septic tank into which 4 million cars, half of them built by General Motors, pump 13,000 tons of pollutants daily. Furthermore, a shortage of motor vehicle fuel and an absence of adequate public transport now threatens to disrupt the entire auto-dependent region.

Part II also suggests that General Motors' common control of auto, truck, and locomotive production may have contributed to the decline of America's railroads. Beginning in the mid-1930's, this firm used its leverage as the Nation's largest shipper of freight to coerce railroads into scrapping their equipment, including pollution-free electric locomotives, in favor of more expensive, less durable, and less efficient GM diesel units. As a consequence, dieselization seriously impaired the ability of railroads to compete with the cars and trucks GM was fundamentally interested in selling.

In this regard, GM's dieselization of the New Haven Railroad is illustrative (see pp. 38-43). During 50 years of electrified operation, this road had never failed to show an operating profit. In 1955, the year before GM dieselized its operation, the New Haven earned \$5.7 million carrying 45 million passengers and 814,000 carloads of freight. Then, in 1956, GM persuaded it to tear down its electric lines and scrap its powerful, high-speed electric locomotives. By 1959, 3 years after dieselization, it lost \$9.2 million hauling 10 million fewer passengers and 130,000 fewer carloads of freight. In 1961, it was declared bankrupt; by 1968, when it was acquired by the Penn Central, it had accumulated a capital deficit of nearly \$300 million.

In sum, GM's dieselization program may have eliminated a technological alternative, electric trains, which could have helped the railroads compete more effectively for passengers and freight with highway transport. Today, when virtually every other industrialized nation has electrified its railroads, America and what is left of America's railroads are locked in to GM diesel locomotives.

The motorization of Los Angeles and dieselization of the New Haven are two of the most appalling episodes in the history of American transportation. These and other shocking incidents, however, were the inevitable outgrowth of concentrated economic power. Whether General Motors' executives actually intended to construct a society wholly dependent on motor vehicles is unlikely and, in any case, irrelevant. That such a society developed in part as a result of that firm's control of competing forms of ground transportation is both relevant and apparent.

Part III presents a proposal designed to restore competition in the motor vehicle industry. In brief, it recommends reorganization of the automobile and truck industries into smaller, more competitive units.

More specifically, it assumes the wisdom of the decentralized method of operations adopted by the automakers. Motor vehicle assembly, engine production, body stamping and dozens of other major automotive functions are currently undertaken in hundreds of physically distinct plants located throughout the country. This proposal would not interfere with this arrangement. It would, however, suggest a change in ownership: Each group of plants now separate in fact and economic function would become separate in law as well. Reorganization along these general lines, it concludes, would allow for a greater degree of competition and technological flexibility at every level of motor vehicle production. In short, a competitively structured industry would be better able to anticipate and adapt to a changing world.

Part III presents a second proposal designed to promote a more balanced system of ground transportation. It suggests that reorganization of General Motors' bus and rail locomotive divisions into independent corporations would enable them to operate free from the conflict of interest inherent in their ownership by the world's largest manufacturer of cars and trucks.

The study concludes with a discussion of feasibility and a review of alternative means of implementation. It suggests, for instance, that reorganization into smaller, independently competing units is feasible for at least two reasons: America's ground vehicle industries performed better when they were independent and less concentrated; and the more advanced transport industries of Europe and Japan are largely organized in this fashion. With respect to implementation, it resolves that Congress rather than the courts is the most likely and appropriate body to restructure these industries for the good of society.

#### I. EVALUATING COMPETITION

Industrial competition is the unequivocal premise of our free enterprise system.<sup>1</sup> In order properly to evaluate the nature of competition in our motor vehicle industries, we must first review their structure, conduct, and performance.<sup>2</sup> The competitiveness of an industry's structure depends upon concentration (the number of firms and their individual shares of industry sales), vertical integration (the extent to which a firm performs two or more successive functions which could be performed efficiently by independent entities), barriers to entry (obstacles that impose on newcomers higher costs per unit than those encountered by established firms), and multinationalization (the ownership of facilities in two or more countries).<sup>3</sup> The competitiveness of an industry's conduct depends upon how constituent firms make price, product, and technology decisions (independently, interdependently, or collusively) and with what purpose or effect (enhanced interfirm rivalry, shared monopolization, or predation).<sup>4</sup> The competitiveness of an industry's performance depends upon the extent to which its conduct contributes to progressiveness (the number and importance of actual innovations as compared with what optimally could have been developed), to efficiency (the reduction of costs and prices to absolute minima), and to a range of public policy objectives including national security, full employment, and a favorable balance of international trade.<sup>5</sup>

### *A. Market Structure as the Determinant of Industry Conduct and Performance*

An industry's behavior and performance are ultimately determined by its structure. An anticompetitively structured industry precludes the longrun survival of effectively competitive behavior and performance.<sup>6</sup> In fact, empirical studies demonstrate that high market concentration, extensive vertical integration, formidable barriers to entry, and broad multinationalization (structural factors) engender price fixing, product imitation, technological collusion, and other forms of concerted and interdependent behavior (conduct), which lead, in turn, to monopoly overcharges, retarded rates of innovation, an inability to compete on the world market, and a failure to contribute to important national goals (performance features).<sup>7</sup>

More specifically, an impressive amount of economic data supports the judgment that concentration of more than 50 percent of an industry's sales in four or fewer firms gives rise to conduct and performance which approximate that of a monopolist or well-disciplined cartel.<sup>8</sup> This degree of concentration destroys the incentive for independent firm decisions on price and product innovation, and encourages instead the emergence of "shared monopoly interdependence," a recognition that the profits of each firm are dependent on the decisions of each of the others.<sup>9</sup> As a result, these few firms collectively avoid price, product, and technology competition in favor of "joint-profit maximization: Prices are set above competitive levels, product designs are imitated, technology is suppressed, imports are disregarded and exports are forfeited, often in a collusive fashion."<sup>10</sup> In effect, the industry is "collectively monopolized."<sup>11</sup>

Vertical integration by firms sharing monopoly power is a second anticompetitive structural factor. It excludes competitors, inflates production costs, and diminishes rates of technological innovation. Its pernicious effect on nonintegrated competitors can be readily demonstrated. It enables firms sharing monopoly power at one level of production to exclude rivals by extending their market control backward and forward into successive stages of manufacturing and distribution.<sup>12</sup> Integration "upstream" or backward into components production forecloses markets to independent suppliers and deprives nonintegrated rivals of independent sources of supplies.<sup>13</sup> Integration "downstream" or forward into distribution forecloses markets to independent wholesale and retail outlets, and deprives nonintegrated rivals of access to independent distributors.<sup>14</sup>

Vertical integration by dominant firms may also inflate costs and stifle innovation. The combination in one firm of activities previously performed by independent entities eliminates price and technological competition in each of the integrated activities. More specifically, due to its high fixed investment in existing plant and equipment, a vertically integrated firm is inherently reluctant to buy outside anything which it already makes internally, even if outside costs are less.<sup>15</sup> Likewise, integration encourages firms to disregard technological innovations whose introduction might render existing plants obsolete and prior investments worthless. In this way, an entire industry can become cost inflated, and locked in to the state of technology which prevailed at the time vertical integration was initially undertaken.<sup>16</sup>

Barriers to entry comprise a third anticompetitive structural factor. Dominant firms in a shared monopoly can set higher than competitive prices and reap monopoly profits only if they are able to deter aggressive firms whose entry would push prices back to a competitive level.<sup>17</sup> The effectiveness of these barriers is reflected generally by the persistence of high concentration levels.<sup>18</sup>

More precise measurements of entry barriers, however, have been developed. Empirical investigations of a number of concentrated industries reveal that vertical integration, high promotional expenditures (for example, advertising and annual model changes) and enormous capital requirements are powerful deterrents to new entry.<sup>19</sup> If an industry is surrounded by any one of these barriers, the possibility of new entry is substantially reduced. If it is protected by all three, entry is "effectively blockaded."<sup>20</sup> By preserving shared monopolies from the deconcentration which would result if new firms were able to enter and to survive, barriers of such magnitude contribute to anticompetitive conduct and unsatisfactory performance.

Multinationalization is an additional structural feature which, when undertaken by powerful, concentrated industries, precludes competitive conduct and performance. Multinational expansion by firms in competitive industries can provide a wide range of social and economic benefits for both home and host countries. For example, it may facilitate the interchange of advances in technology and reduce cross-cultural suspicions which generate hostilities. Multinational expansion by firms in concentrated industries, however, may provide an opposite set of significant disadvantages. By acquiring foreign competitors and by constructing factories abroad, a concentrated industry can maximize global profits without the necessity of competing with imports at home or of promoting exports abroad.<sup>21</sup> Extensive foreign investments, in turn, transform powerful, concentrated industries into supranational economic states, which pursue global corporate objectives regardless of the political, social, and economic consequences for particular countries.<sup>22</sup> More specifically, concentrated multinational industries can encroach upon national sovereignty by undermining the ability of nation-states to pursue their national and international objectives. As a result, concentrated multinational industries perform unsatisfactorily in terms of their contribution to the economic and political interests of a home country in such critical areas as national security, full employment, and a favorable balance of trade.<sup>23</sup>

Accordingly, a great number of economists and jurists now urge dissolution of leading firms in vertically integrated industries with four-firm concentration ratios of 50 percent or more, with barriers which all but foreclose new entry, and with extensive multinational entanglements.<sup>24</sup> They contend that deconcentrated industries would behave more competitively in making price, product, and technology decisions and would perform more satisfactorily by providing the country with lower prices, expanded exports, higher employment, and an accelerated rate of technological innovation. In short, they argue that a larger number of competitors at every level of industrial production would provide a greater degree of competition.

### B. Market Structure as the Determinant of Interindustry Conduct and Performance

Competition occurs among industries producing rival products, as well as among firms producing like products. Metal cans manufactured by one industry, for example, compete with glass bottles produced by another.<sup>25</sup> The aluminum, steel and fiberglass industries compete with one another in the manufacture of building materials.<sup>26</sup> Likewise, the two industries which manufacture automobiles and trucks compete with those which produce buses, trains, subway cars, and rapid transit vehicles. General Motors, for example, is fully aware of the impact of interindustry competition on its sales of automobiles:

The demand for automobile transportation is only part of the total demand for transportation services. Travelers can choose to use private cars, taxis, buses, rail transit or planes. Each transportation mode offers a variety of services at different prices. Each competes directly for the patronage of the customer for many of the transportation services he needs. To this extent, the various modes are truly alternatives.<sup>27</sup>

In order to evaluate "interindustry" competition between motor vehicles (auto and truck) and other forms of ground transport, we must review the overall structure, conduct, and performance of the multi-industry group which encompasses them.<sup>28</sup> The competitiveness of an industry group's structure depends upon interindustry diversification (the extent to which a single firm operates in two or more competing industries)<sup>29</sup> and asymmetry (divergence in the size and concentration of competing industries).<sup>30</sup> The competitiveness of the group's conduct depends upon how member industries promote their conflicting economic interests (price and technological competition or economic and political suppression of rivals), and with what purpose or effect (enhanced interindustry rivalry or the elimination of competing alternatives)<sup>31</sup> The competitiveness of a group's performance depends upon the extent to which its conduct contributes to aggregate efficiency, to progressiveness, and to a "balanced" production of competing consumer goods and services.<sup>32</sup>

The behavior and performance of a multi-industry group such as ground transport are ultimately determined by its structure. Anti-competitively structured industry groups preclude the long-run survival of effectively competitive conduct and performance. In fact, extensive diversification and asymmetry (structural factors) have been found to generate economic suppression and political restraint of competing industries (conduct) which lead in turn to artificially inflated prices, retarded innovation and a contraction in the number of consumer alternatives (performance).

More precisely, diversification may result in economic suppression of all but one of several competing industrial products. In *Continental Can* (1964), for instance, the Supreme Court expressed concern that an interindustry merger of competing metal and glass manufacturers would lead necessarily to a relaxation in the development and output of glass containers.<sup>33</sup> There the Government argued that in 1956 Continental Can, the Nation's second largest can producer, had acquired Hazel-Atlas, the third largest maker of reusable glass bottles, in order to augment Continental's sale of metal containers.<sup>34</sup> In fact, Con-

tinental had been engaged in a commercial war against glass bottles since the mid-1930's.<sup>35</sup> At that time, its marketing experts had estimated that in the beer industry alone a substitution of metal cans for glass bottles would transform a \$3 million container business into a \$90 million one. This estimate was based on a fundamental dissimilarity in the reuse of these competing containers: One reusable glass bottle displaced the sale of approximately 25 nonreusable metal cans. As one journal noted with respect to the beer industry: "That paradox rests on the fact that every beer can is a newly bought can, while the standard beer bottle returns to the brewer for refilling about 25 times before somebody drops and breaks it \* \* \* or permanently sidetracks it in some uncombed dump."<sup>36</sup>

Merger with Hazel-Atlas, therefore, could have enabled Continental to maximize overall sales and profits by restricting the technological development and output of glass bottles.<sup>37</sup> In upholding the Government's argument, the Court noted that "Continental acquired by the merger the power to guide the development of Hazel-Atlas consistently with Continental's interest in metal containers."<sup>38</sup> In striking down the merger, it concluded that "the acquisition of Hazel-Atlas by a company engaged in such intense efforts to effect a diversion of business from glass to metal" would tend "substantially to lessen \* \* \* interindustry competition" between glass and metal containers in violation of the antimerger provisions of the Clayton Antitrust Act.<sup>39</sup>

Likewise, Congress has acted to preclude diversification among rival industries. In transportation, for example, it has on several occasions explicitly prohibited common ownership of competing modes of transport. Provisions to this effect were enacted in the Panama Canal Act of 1912 (prohibiting common control of railroads and water carriers), section 213 of the Motor Carrier Act of 1935 (prohibiting common control of railroads and motor carriers), and section 408 of the Civil Aeronautics Act of 1938 (prohibiting common control of surface and air transportation). In the Transportation Act of 1940, Congress again affirmed its policy with respect to the separation of competing forms of transportation by reenacting the provisions of the Panama Canal Act and of section 213 of the Motor Carrier Act.<sup>40</sup> In passing these laws, Congress intended, in the words of the Interstate Commerce Commission, "to protect each mode of transportation from the suppression or strangulation thereof which might follow if control thereof were allowed to fall into the hands of a competing transportation agency."<sup>41</sup>

Congress feared, therefore, that the conflict of interest inherent in common control of competing transport modes might lead to the "suppression or strangulation" of some in favor of others. Initially, it was concerned that the then powerful railroads would restrain other forms of ground travel. As one transportation economist noted:

An actual conflict of interest may appear between railway operations of a carrier and its highway, water or air operations. The investment of the company in railroad transportation facilities is so great that it would be more interested in keeping traffic on its rails and protecting its investments there than in developing a new and competing mode of transport. Railroads in control of a competing mode of transport, therefore, may be inclined to keep rates high for nonrail service, and the service poor, in an effort to hold traffic to the rails.<sup>42</sup>

This concern, moreover, was grounded in fact. In implementing the Panama Canal Act, for instance, the ICC found that railroads con-

trolling competing steamship lines had maintained high steamship rates to divert traffic to the rail lines and to eliminate water lines as an alternative mode of freight transport.<sup>43</sup>

These examples suggest that common ownership may lead to the repression of some industries in favor of others. Powerful firms controlling rival industries determine which will produce and which will perish. As a result, consumers are deprived of economic alternatives. In effect, their sovereignty in the marketplace is displaced by the sovereignty of the multi-industry producer. They are compelled to relinquish the essence of our free enterprise system: the opportunity to choose among the competing products and services of competing industries.

Asymmetry constitutes the second anticompetitive structural criteria. It refers to a marked divergence in the size and concentration of competing industries. This divergence in turn may result in the substitution of interindustry political warfare for price and technological competition. A multi-industry group consisting, for example, of one large, highly concentrated industry and several smaller, less concentrated rivals is imbalanced or "asymmetrical" with respect to political resources. Unless it is smaller than its rivals, the concentrated industry will generally have a larger economic capacity for political influence than its deconcentrated competitors. This follows from the ability of firms in a concentrated industry to pass on the costs of corporate lobbying and related political activities to consumers in the form of higher prices. The power of concentrated industries to levy such costs on consumers amounts, in effect, to a "corporate power to tax."<sup>44</sup>

By contrast, competitively structured industries lack the power to finance political activities by taxing consumers. Price levels are beyond the control of industry firms and are determined instead by the interplay of free enterprise market forces.<sup>45</sup> As a consequence, such industries are unable to influence Federal, State, and local officials as effectively as their concentrated rivals.

The size of a concentrated industry is also important. It governs the amount of revenue which can be raised for political purposes through price increases. It also affects the impact of political expenditures on Government officials. Other things being equal, the political efforts of an industry with multibillion dollar sales, hundreds of thousands of employees and plants located throughout the country influence Government policymaking more than those of smaller industries.

The presence of a large and highly concentrated industry in an economic sector consisting of smaller and less concentrated rivals, therefore, may distort the operation of political processes. By virtue of its size and power over prices, a concentrated industry has the economic leverage to induce the adoption by Government of policies which competitively disadvantage weaker rivals. By establishing multimillion dollar corporate lobbies, for example, it can overwhelm the countervailing political efforts of less powerful competing industries.<sup>46</sup> In vital multi-industry sectors such as energy, communications, and transportation, asymmetry can seriously threaten the public interest. It can result in the political restraint of small industries which offer superior technological alternatives to the products or services provided by their larger, concentrated rivals. With respect to energy, for example, asymmetry might help explain why small industries offering al-

ternative energy sources such as gasified-coal, fusion and solar power have been consistently unable to secure the Government assistance regularly accorded the larger, concentrated oil industry.<sup>47</sup>

## II. COMPETITION IN GROUND TRANSPORTATION: AN ECONOMIC ANALYSIS OF THE AUTOMOBILE, TRUCK, BUS, AND RAIL INDUSTRIES

Vehicles used for the ground transportation of passengers and freight are manufactured principally in four industries: automobile, truck, bus and rail. This section evaluates these industries in two respects: the nature of competition in motor vehicle (auto and truck) manufacturing and the nature of interindustry competition between motor vehicles and the other two forms of ground transport.

### *A. Competition in the Motor Vehicle Industries: Automobiles*

As measured by the structural economic criteria set forth in part I, automobile manufacturing is one of the least competitive industries in the American economy.<sup>48</sup> Its structural concentration is unprecedented. One firm, General Motors, alone accounts for 50 percent of industry sales; 97 percent of domestic production is centered in three firms; four firms manufacture virtually all passenger cars produced and sold in this country.<sup>49</sup> This degree of concentration is considerably greater than that generally considered inimical to competitive conduct and performance.<sup>50</sup> In fact, the added feature of a single dominant firm (GM) increases the likelihood that the industry will behave and perform in a manner not unlike that of a cohesive monopoly.<sup>51</sup>

The extent of vertical integration in this industry is unparalleled. All four firms are integrated upstream into major components production and downstream into exclusive franchised distribution. All produce their own bodies and most of their stampings. All but American Motors cast their own engine blocks and cylinder heads, manufacture their own automatic transmissions and assemble their own cars.<sup>52</sup> All maintain separate nationwide networks of franchised dealers, each of which deals exclusively in one make of automobile.<sup>53</sup>

Moreover, the condition of entry into automobile production has been described as "effectively blockaded."<sup>54</sup> More specifically, the industry is surrounded by insurmountable barriers: extensive vertical integration, high promotional expenditures, and enormous capital requirements.<sup>55</sup> Since 1923, not a single domestic or foreign firm has entered this industry at the production stage and survived; and entry at the marketing stage by imports has been largely restricted to the less profitable specialty and small-car secondary markets.<sup>56</sup> In addition, there are some indications that the Federal Government has sought to protect American automakers from competition with imports by imposing "voluntary" automobile quotas on foreign governments and surcharges on foreign-made vehicles.<sup>57</sup>

Furthermore, the industry is composed exclusively of multinational firms. GM, Ford, and Chrysler operate more than 200 automobile facilities in 44 foreign countries.<sup>58</sup> Currently, these three firms account for half of the world's total production of cars; already they dominate the Canadian, German, British, and Australian markets.<sup>59</sup> Nearly one-half of Ford's employees are located overseas; one-third of GM's are abroad.<sup>60</sup> By 1972, Big Three investment in foreign operations

amounted to an estimated \$4 billion, and projections indicated an accelerated trend toward multinational expansion.<sup>61</sup>

Given its anticompetitive structure, the automobile industry's anticompetitive conduct is not unexpected. High concentration, vertical integration, and insuperable barriers to entry have destroyed the incentive for independent decisions on price and technological innovation at all stages of auto production and have encouraged instead the emergence of shared monopoly interdependence, a recognition that the profits of each auto firm are dependent on the decisions of each of the other two.<sup>62</sup> General Motors, the industry leader, makes most decisions. The other two firms, which rely upon GM for the supply of various components, invariably follow. In the words of former Antitrust Division Chief Thurman Arnold, Ford and Chrysler have become mere "satellites of General Motors."<sup>63</sup> As a result, the automakers collectively eschew price, product, and technological competition in favor of shared monopolization: prices are set above competitive levels, product designs are protectively imitated, and technology is suppressed.

The Big Three interdependently price new cars and parts with the same anticompetitive impact as if they had acted in collusion. For several decades, a pattern of administered price leadership has prevailed, with General Motors as price leader. Without exception, Ford and Chrysler each year adjust their announced prices up or down to agree with those established by GM.<sup>64</sup> Moreover, there is recent evidence which suggests that GM and Ford may have actually conspired to fix prices at higher than competitive levels, at least with respect to fleet automobile sales. The 270-page bill of particulars filed by the U.S. Department of Justice on January 2, 1973, in the fleet buyers litigation contained documented allegations that the chairmen of GM and Ford routinely participated in "summit meetings" whose purpose was to fix prices on automobiles.<sup>65</sup> In addition, the Federal Trade Commission charged in 1968 that these firms engage in the fixing of prices on automotive parts which they manufacture exclusively and ship to captive franchised dealers for resale.<sup>66</sup>

Due to their high degree of interdependence, the Big Three also pursue a policy of protectively imitating each other's products. All, for example, are equipped with basically the same form of piston-driven engines, transmission, steering and suspension systems. All, until late 1970 were even the same basic size. The industry's annual model changes and introduction of "new" model lines, therefore, do not seem to result in a fundamental variation of automobile makes.<sup>67</sup>

The Big Three's long-term resistance to building small cars provides a striking instance of protectively imitative conduct. For years, the automakers refused to build smaller vehicles because, as neatly summarized in 1971 by Henry Ford II, "minicars mean mini-profits."<sup>68</sup> Until 1970, not a single firm broke the shared monopoly ranks through innovation into the small car market despite increasing consumer demand and the rising pressure of imports. Since 1949, the United Auto Workers and others had repeatedly urged the industry to produce a small car for domestic sale as well as for export.<sup>69</sup> At that time, marketing surveys indicated that 6 out of 10 Americans desired smaller automobiles not unlike those manufactured abroad by the Big Three's foreign subsidiaries.<sup>70</sup> Ten years later, when im-

ports had substantially filled this submarket, the Big Three introduced the so-called compacts. But these were not directly competitive in price, size and economy of operation with foreign-made cars, and the imports continued to increase. In addition, the Big Three soon began to make the compacts larger, more complex and more expensive. Not until late 1970 when the pressure from imports became intolerable, did GM and Ford reluctantly introduce genuinely small cars (Vega and Pinto, respectively).<sup>71</sup> Examples such as these have led Professor Bain to conclude that in this industry "the highly imitative product policies of rival oligopolists seem to lead to substantial uniformity of available products and to a suppression of the potential variety in products."<sup>72</sup>

A shared-monopoly policy of product imitation discouraged the Big Three from introducing small cars earlier. More generally, it has prevented these companies from responding to changes in consumer preferences. According to ex-GM Vice President John Z. DeLorean, the failure to introduce small cars is symptomatic of the degree to which the auto companies are out of touch with the marketplace. "If you wanted to make (the car) two feet shorter, no one would let you, they would be so frightened," he complained. "There's no forward response at General Motors to what the public wants today. It's gotten to be a total insulation from the realities of the world. From the standpoint of America it's frightening."<sup>73</sup>

Likewise, the Big Three interdependently formulate policies on technology which have the same anticompetitive impact as if they were negotiated in concert. These policies serve one apparent objective: to protect multibillion dollar investments in the integrated production and distribution of conventional oil-powered vehicles. Accordingly, the Big Three have suppressed the introduction of automotive advances which threatened to depreciate the value of existing equipment. Only in response to Government mandate or the pressures of foreign imports have they introduced significant innovations. Safety belts, crash absorption bumpers, and collapsible steering columns, for example, were already standard equipment on foreign cars when largely at the Government's behest the Big Three began to install them.<sup>74</sup> They have also disregarded alternative propulsion developments. Electric and steam cars were first produced by small American firms in the early 1900's.<sup>75</sup> The low-emission stratified charge engine was first developed in the late 1920's.<sup>76</sup> The compact and reliable Wankel rotary engine has been in commercial production in Germany and Japan since the early 1960's.<sup>77</sup> Despite the availability of these and other technological alternatives, the Big Three have collectively persisted in the production of conventionally designed and powered cars. Vertical integration has prevented them from considering any other policy. To produce innovative cars, they would have to scrap billions of dollars' worth of technologically obsolete equipment.<sup>78</sup>

There is also some evidence that the automakers may actually conspire to retard technological developments. In the pending motor vehicle pollution control cases, for example, it is alleged that from 1953 until at least 1969, the automobile companies conspired to suppress the technological development of automotive pollution control equipment.<sup>79</sup> To date, 35 States and municipalities representing several

million citizens have filed antitrust suits seeking both monetary damages and injunctive relief against the continuation of the alleged conspiracy.<sup>80</sup>

As a result of interdependent and possibly conspiratorial conduct, therefore, this industry's automotive technology has remained basically unchanged since 1940: automatic transmissions, power brakes, air conditioning and other major innovations were all developed prior to that time.<sup>81</sup> Moreover, these and most other innovations were the result of research and development by small auto firms or independent automotive suppliers. Smaller automobile firms were particularly innovative. Duesenberg, for example, pioneered in four-wheel brakes in 1920. Rubber engine mounts, which were an important contribution in reducing noise and vibration, were first introduced in 1922 by Nash. Reo introduced completely automatic transmission in 1934. In 1939 Packard offered the first auto air-conditioning unit. Complete single-unit construction was first undertaken in 1940 by Nash and the Budd Manufacturing Co.<sup>82</sup> Independent automotive suppliers have also played a prominent role in developing innovations. Bendix and Kelsey-Hayes, for example, originated power braking systems; and Bendix and Gemmer controlled the key patents on power steering. Dana developed nonslip differentials. Motorola made the principal breakthrough on a silicon rectifier for alternators; and Electric Autolite and Motorola did much of the advance work on transistorized ignition systems.<sup>83</sup> By comparison, the Big Three automakers' principal innovations in recent years have consisted to a large extent of Government-mandated equipment such as antitheft steering and ignition locks and relatively minor refinements including concealed windshield wipers and radio antennas.<sup>84</sup>

Given its anticompetitive structure and conduct, this industry's unsatisfactory performance is inevitable. Indeed, automobile manufacturing is said to exhibit all the indexes of poor market performance: reduced efficiency, retarded progressiveness, an inability to compete on the world market, and a failure to contribute to progress in several areas of public concern.<sup>85</sup>

Efficiency in terms of market performance is generally measured by comparing actual prices and costs with those that would obtain in a competitively structured market.<sup>86</sup> The Big Three's anticompetitive pricing behavior has increased by billions of dollars the amount consumers must pay to own and operate their cars. According to a recent estimate by the Federal Trade Commission, 9 million purchasers of domestic 1972 automobiles paid \$2.1 billion, or more than \$230 per car, in shared monopoly overcharges to General Motors, Ford, and Chrysler.<sup>87</sup> Moreover, they paid an additional billion dollars in overcharges on replacement parts manufactured by the Big Three's integrated upstream facilities and distributed downstream by franchised dealers leveraged into using these parts exclusively.<sup>88</sup>

The Big Three's product policy of annual model changes has also reduced efficiency by vastly increasing retooling costs, and hence prices. In 1972, consumers paid an estimated \$1.6 billion, or \$170 per car, to defray the costs of model changes which the Big Three claimed were related to improvements in performance.<sup>89</sup> In fact, only a small percentage of model change costs could reasonably be attributed to the cost of non-Government-mandated performance improvements. In

1969, for instance, the U.S. Bureau of Labor Statistics reported a net reduction in performance improvements of \$3 per automobile.<sup>90</sup> Most of the new models, moreover, were only cosmetically restyled versions of last year's offerings. Yet buyers were never given a choice between purchasing the same model as last year's at a lower price and a new model at a higher price.<sup>91</sup>

Likewise, the Big Three's reluctance to build and to promote the sale of smaller, lightweight cars has resulted in a loss of efficiency in terms of fuel consumption. In 1972, motorists consumed 70 billion gallons of gasoline at a cost of \$28 billion. The average car that year obtained 14 miles per gallon. Had the automakers built and actively promoted smaller cars instead, the cost savings to consumers would have been substantial. More specifically, if three-fourths of the Nation's 1972 auto population had consisted of small cars such as GM's Vega or Ford's Pinto, motorists would have conserved 22 billion gallons of gasoline, at a total cost savings that year of nearly \$7 billion.<sup>92</sup>

Progressiveness in terms of market performance is measured by comparing the number and importance of actual innovations with those which optimally could have been developed and introduced.<sup>93</sup> The Big Three's suppression of technological competition has precluded cost savings advances in several areas of public concern including energy, pollution control, automobile durability, and safety. It has been urged, for instance, that energy-conserving, low-emission electric and steam vehicles would help resolve this Nation's acute petroleum shortage and help reduce the \$6.6 billion in damages annually attributable to motor vehicle pollution.<sup>94</sup> In addition, there is evidence that electric- and steam-powered cars can now be produced which would cost half as much to own and even less to operate as conventional gasoline automobiles.<sup>95</sup> The application of known metallurgical process could permit doubling the life of an automobile for an additional cost of \$36 per year, resulting in an annual savings to consumers of more than \$2 billion.<sup>96</sup> Effective crash-absorption bumpers, roll bars, perimeter fender protection, and other safety features have been developed which would substantially reduce both highway fatalities and the estimated \$16.9 billion in economic losses (\$8 billion alone in damages to vehicles) annually suffered by victims of motor vehicle accidents.<sup>97</sup> Introduction of these innovations, however, would render obsolete much of the Big Three's multibillion-dollar upstream investments in conventional body and complex internal combustion engine production.<sup>98</sup> They would also lower production costs and increase durability, thereby reducing demand, prices, and shared monopoly profits on the sale of new cars and replacement parts.<sup>99</sup> There are grounds reasonably to suggest, therefore, that the Big Three may have repressed these and other cost-saving innovations.

In addition, the Big Three may collectively employ annual model changes as a surrogate for cost-savings innovations. By introducing a newly styled model each year, they provide consumers with the illusion of progress and yet avoid the necessity of adopting technological improvements which would lower new car purchase prices or maintenance charges.<sup>100</sup> A comparison of their expenditures for style changes and emission control, for example, is illustrative. For the 5-year period 1967-71, the Big Three's expenditures for emission con-

trol amounted to less than 12 percent of their expenditures for annual restyling.<sup>101</sup> In short, these companies apparently rely to a greater extent on annual style obsolescence rather than technological innovation as a means of bolstering replacement demand.

Moreover, there is no indication that this industry's unsatisfactory progressiveness will improve. In response both to market and to Government demands for low-emission engines, for example, the Big Three claim that, except for limited production of some rotary-powered Vegas, they are technologically incapable of developing anything other than catalytic attachments. According to the National Academy of Sciences, however, catalytic converters will cost consumers \$16 billion more by the mid-1980's than the most promising low-emission alternatives.<sup>102</sup> In addition, a recent high-level Environmental Protection Agency memorandum has indicated that catalytic converters may pollute the air with more dangerous poisons than they are supposed to eliminate.<sup>103</sup>

By contrast, two small foreign firms have already achieved major technological breakthroughs in this area. Toyo Kogyo, with its "Mazda" rotary engine and thermal purifying system has met the original 1975 clean air standard; Honda has developed a stratified-charge engine which has not only met the 1975 standard but will very likely meet the 1976 standard as well.<sup>104</sup> It is suspected, therefore, that the Big Three have become locked in to past technologies. Due to their extensive upstream integration into conventional body and engine production, they may have forsaken the economic incentive and possibly the technical ability to innovate.

An industry's ability to compete on the world market and thereby to export its goods while limiting imports constitutes a third measure of performance.<sup>105</sup> The Big Three's avoidance of price, product, and technological competition has seriously affected their ability to sell American cars abroad. It has also encouraged Americans to buy imported cars. Up until 1968, the United States had always exported more vehicles and parts than it had imported.<sup>106</sup> But this trend has been reversed. American cars are less able to compete effectively in price, product (especially size), and technology with foreign-made vehicles. Largely as a result, the country last year imported \$3.5 billion worth of vehicles and parts more than it exported.<sup>107</sup> That amount is more than half of the country's trade deficit for 1972 and reflects a level of imports which may have cost us hundreds of thousands of jobs in automobile and allied industries.<sup>108</sup> "The dollar imbalance is due largely to the failure of the auto companies to make small cars," ex-GM Vice President John DeLorean has charged. "The increase in the foreign car population is a tremendous erosion of the American economic base. That's why our industry is not a growth industry anymore."<sup>109</sup>

The automakers failure to build and to promote the sale of small cars has also contributed substantially to the recent energy-unemployment crisis. Despite warnings for nearly a decade of an impending fuel shortage, the Big Three have continued to encourage the sale of large, high-fuel consumption vehicles. More than 90 percent of their television advertising expenditures for 1972 and the first half of 1973, for example, were allocated to the promotion of standard (large) and intermediate-sized cars.<sup>110</sup> Their objective was clear: to maximize

profits by stimulating sales of more expensive lines of vehicles as long as was practically possible. The result was equally predictable: Lay-offs of more than 170,000 automobile workers during the first part of 1974 because of the energy-related slump in big car sales.<sup>111</sup>

Finally, an industry's performance might also be reviewed in terms of its contribution to other areas of public concern such as national security, full employment, and a favorable balance of international trade. Arguably, the automobile industry's emerging multinational structure inhibits progress in each of these three areas.

More generally, the Big Three automakers multinational expansion may conflict with our national security and domestic as well as foreign policy objectives. As owners of facilities in more than 45 different countries, General Motors, Ford, and Chrysler can no longer properly be perceived as American corporations. Rather, they comprise supranational and sovereign economic states, which acknowledge loyalty to no particular country. The automakers readily concede this change in corporate outlook. Henry Ford II, chairman of the Ford Motor Co., for example, has stated: "We don't think of ourselves as a national company anymore. We are definitely a multinational organization . . ." <sup>112</sup> Likewise, GM's Chairman Sloan reportedly told a group of stockholders on the eve of Germany's invasion of Poland in 1939 that his corporation was "too big" to be affected by "petty international squabbles." <sup>113</sup>

Upon first examination, this posture would appear to be in the best interests of international peace. Indeed, multinational expansion by nondominant firms in competitive industries facilitates contact and understanding between otherwise hostile countries. The movement abroad by powerful firms which already dominate vital industrial sectors at home, however, can produce the opposite result. It can endanger the national security of the home country and facilitate hostilities between nation-states. At a minimum, it presents the dilemma of conflicting loyalties, which can become particularly acute during periods of international conflict. This is particularly valid in the case of firms which dominate war-related industries in a number of potentially belligerent countries.

The activities of General Motors, Ford, and Chrysler prior to and during World War II, for example, are instructive. At that time, these three firms dominated motor vehicle production in both the United States and Germany. Due to its mass production capabilities, automobile manufacturing is one of the most crucial industries with respect to national defense. As a result, these firms retained the economic and political power to affect the shape of governmental relations both within and between these nations in a manner which maximized corporate global profits. In short, they were private governments unaccountable to the citizens of any country yet possessing tremendous influence over the course of war and peace in the world. The substantial contribution of these firms to the American war effort in terms of tanks, aircraft components, and other military equipment is widely acknowledged. Less well known are the simultaneous contributions of their foreign subsidiaries to the Axis Powers. In sum, they maximized profits by supplying both sides with the materiel needed to conduct the war.

During the 1920's and 1930's, the Big Three automakers undertook an extensive program of multinational expansion. In 1929, General Motors acquired Germany's largest automobile company, Adam Opel, A.G.<sup>114</sup> By the mid-1930's, these three American companies owned automotive subsidiaries throughout Europe and the Far East; many of their largest facilities were located in the politically sensitive nations of Germany, Poland, Rumania, Austria, Hungary, Latvia, and Japan.<sup>115</sup> As the Axis Powers overtly prepared for war, General Motors, Ford, and, to a lesser extent, Chrysler found themselves involved in serious conflicts of interest and national loyalties. Due to their concentrated economic power over motor vehicle production in both Allied and Axis territories, the Big Three inevitably became major factors in the preparations and progress of the war. In Germany, for example, General Motors and Ford became an integral part of the Nazi war efforts. GM's plants in Germany built thousands of bomber and jet fighter propulsion systems for the Luftwaffe at the same time that its American plants produced aircraft engines for the U.S. Army Air Corps.<sup>116</sup>

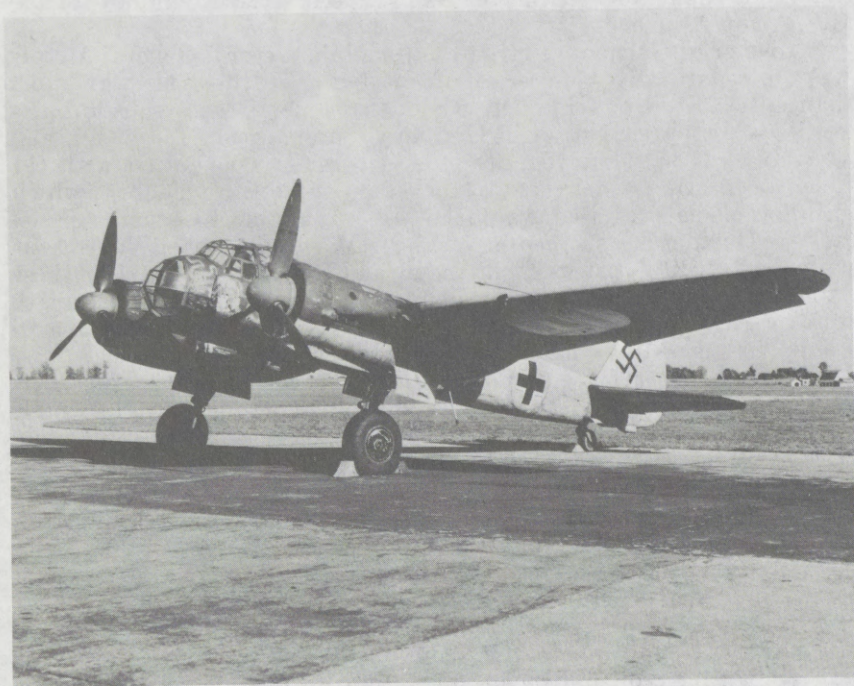
As owner of Germany's largest automobile factory, General Motors was quite naturally a more important factor in the Axis war effort than either Ford or Chrysler, whose investments were substantially less.<sup>117</sup> GM's participation in Germany's preparation for war began as early as 1935. That year its Opel subsidiary cooperated with the Reich in locating a new heavy truck facility at Brandenburg, which military officials advised would be less vulnerable to enemy air attack.<sup>118</sup> During the succeeding years, GM supplied the Wehrmacht with Opel "Blitz" trucks from the Brandenburg complex. For these and other contributions to wartime preparations, GM's chief executive for overseas operations in 1938 was awarded the Order of the German Eagle (first class) by Chancellor Adolf Hitler.<sup>119</sup>

Ford was also active in Nazi Germany's prewar preparations. In 1938, for instance, it opened a truck assembly plant in Berlin whose "real purpose," according to U.S. Army Intelligence, was producing "troop transport-type" vehicles for the Wehrmacht.<sup>120</sup> That year Ford's chief executive received the Nazi German Eagle (first class).<sup>121</sup>

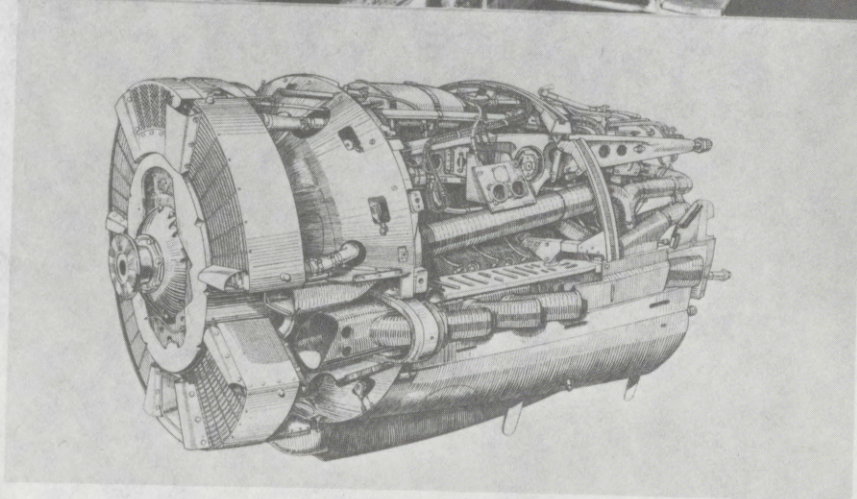
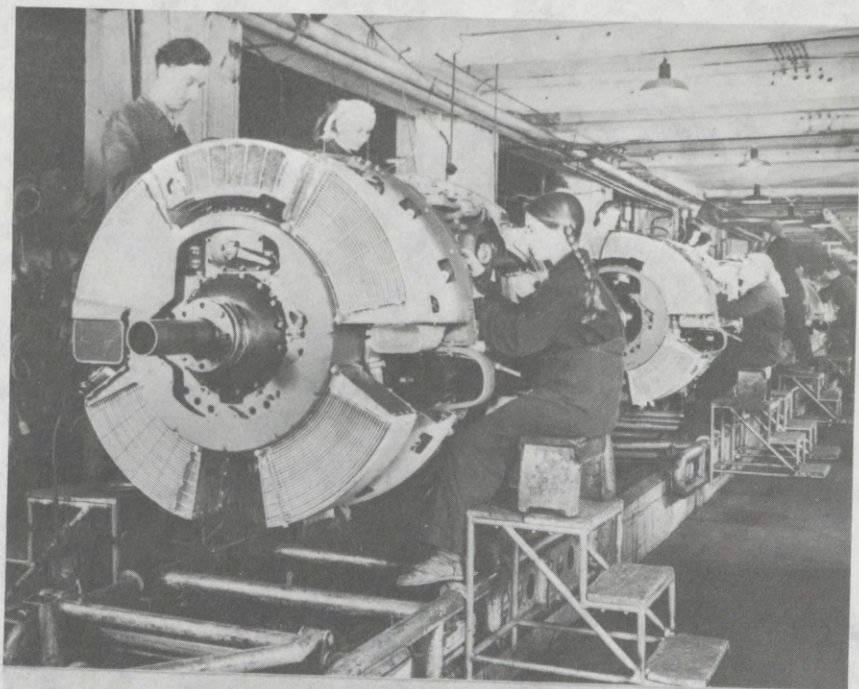
Given the dominant structural positions of GM and Ford in the war economies of both America and Germany, these firms had the power to influence the course of World War II. They could determine, for example, which belligerent would benefit from their latest advances in war-related technology. Refusal to aid in prewar preparations, of course, was unthinkable. It would have resulted in confiscation and irreparable economic harm to GM and Ford stockholders. In any event, due to their concentrated economic power in both economies, they were able to shape the conflict to their own private corporate advantage. Whether in fact their profit-maximization determinations were also in the best interests of international peace or, more specifically, in accord with the national security objectives of the United States at that time is entirely unclear.

The outbreak of war in September 1939 resulted inevitably in the full conversion by GM and Ford of their Axis plants to the production of military aircraft and trucks. During the last quarter of 1939, for instance, GM converted its 432-acre Opel complex in Russelsheim

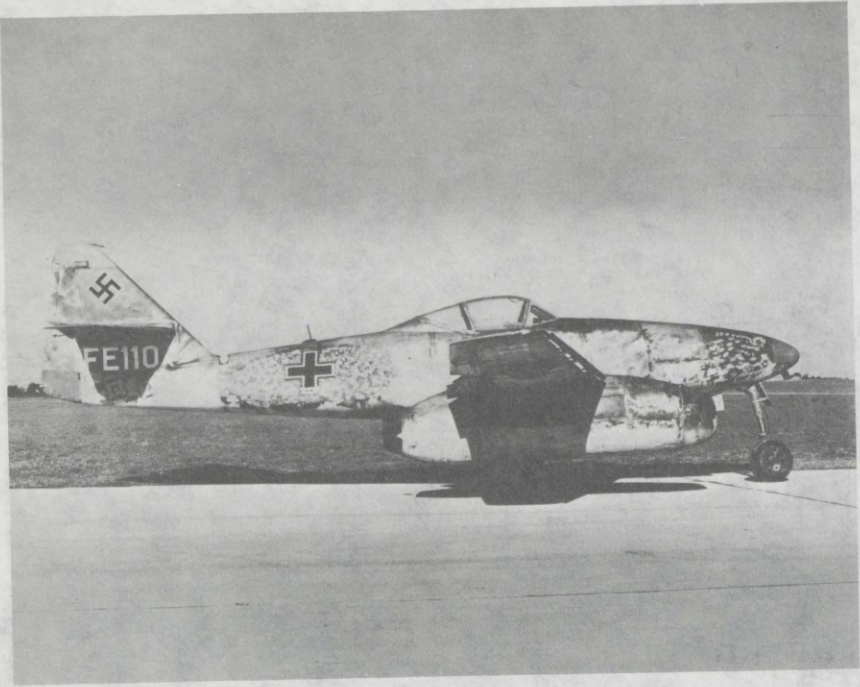
to warplane production.<sup>122</sup> From 1939 through 1945, the GM-owned Russelsheim facility alone assembled 50 percent of all the propulsion systems produced for the JU-88 medium range bomber.<sup>123</sup> According to the authoritative work of Wagner and Nowarra, the JU-88 by 1940 "had become the Luftwaffe's most important bomber, and remained so for the rest of the war."<sup>124</sup> The Russelsheim facility also assembled 10 percent of the jet engines for the ME-262, the world's first operational jet fighter.<sup>125</sup> Wagner and Nowarra described this jet plane as perhaps "the most important military aircraft to come out of Germany."<sup>126</sup> With a top speed of 540 miles per hour, it was more than 100 miles per hour faster than the American P-51 Mustang, the fastest piston-driven allied fighter.<sup>127</sup> Not until after World War II were the Allies able to develop pure jet aircraft.<sup>128</sup> By producing ME-262 jet engines for the Luftwaffe, therefore, GM's Russelsheim plant made a significant contribution to the Axis' technological superiority in the air.



JU-88, LUFTWAFFE'S MOST IMPORTANT BOMBER



JU-88 PROPULSION SYSTEM ASSEMBLY LINE AT THE GM-RUSSELSHEIM  
WARPLANE FACILITY



ME-262, WORLD'S FIRST OPERATIONAL JET FIGHTER



3-TON OPEL "BLITZ" TRUCKS AWAITING SHIPMENT FROM THE GM-BRANDENBURG  
MILITARY TRUCK FACILITY

On the ground, GM and Ford subsidiaries built nearly 90 percent of the armored "mule" 3-ton half-tracks and more than 70 percent of the Reich's medium and heavy-duty trucks. These vehicles, according to American intelligence reports, served as "the backbone of the German Army transportation system."<sup>129</sup> In addition, the factories of Ethyl G.m.b.H., a joint venture of I. G. Farben, General Motors and Exxon subsidiaries, provided the mechanized German armies with synthetic tetraethyl fuel.<sup>130</sup> During 1935-36, at the urgent request of Nazi officials who realized that Germany's scarce petroleum reserves would not satisfy war demands, GM and Exxon joined with German chemical interests in the erection of the ethyl tetraethyl plants.<sup>131</sup> According to captured German records, these facilities contributed substantially to the German war effort: "The fact that since the beginning of the war we could produce lead-tetraethyl is entirely due to the circumstances that shortly before the Americans had presented us with the production plants complete with experimental knowledge."<sup>132</sup> "Without lead-tetraethyl," the wartime document added, "the present method of warfare would be unthinkable."<sup>133</sup>

It was, of course, in the best interests of GM and Ford to cooperate in the Axis war effort. Although GM, for example, was in complete management control of its Russelsheim warplane factory for nearly a full year after Germany's declaration of war against the United States on December 11, 1941, its refusal to build warplanes at a time of negligible demand for automobiles would have brought about the economic collapse of its Opel plant.<sup>134</sup> Moreover, it might have resulted in confiscation of the facility by the German Government. In fact, on November 25, 1942, the Reich did appoint an administrator for the Russelsheim plant who, although not permitted to interfere with the authority of the GM-appointed board of directors, was instructed to oversee operations. Nevertheless, communications as well as materiel reportedly continued to flow for the duration of the war between GM and Ford plants in Allied countries and those located in Axis territories.<sup>135</sup>

After the cessation of hostilities, GM and Ford demanded reparations from the U.S. Government for wartime damages sustained by their Axis facilities as a result of Allied bombing. By 1967, GM had collected more than \$33 million in reparations and Federal tax benefits for damages to its warplane and motor vehicle properties in formerly Axis territories, including Germany, Austria, Poland, Latvia, and China.<sup>136</sup> Likewise, Ford received a little less than \$1 million, primarily as a result of damages sustained by its military truck complex at Cologne.<sup>137</sup> Since World War II, the rebuilt Russelsheim and Cologne plants have enabled GM and Ford, respectively, to capture more than two-thirds of the German motor vehicle market.<sup>138</sup> Meanwhile, GM's truck plant in Brandenburg, East Germany, and Ford's facilities in Budapest, Hungary, have more than likely become substantial factors in these Communist economies.

Due to their multinational dominance of motor vehicle production, GM and Ford became principal suppliers for the forces of fascism as well as for the forces of democracy. It may, of course, be argued that participating in both sides of an international conflict, like the common corporate practice of investing in both political parties before an election, is an appropriate corporate activity. Had the Nazis

won, General Motors and Ford would have appeared impeccably Nazi; as Hitler lost, these companies were able to reemerge impeccably American. In either case, the viability of these corporations and the interests of their respective stockholders would have been preserved. On the other hand, the inevitable conflict of loyalties and potential for abuse inherent in such a corporation posture would seem to suggest that in the case of powerful concentrated industries engaged in war-convertible production multinational expansion may adversely affect America's legitimate interest in national security.

Nevertheless, since World War II the automakers' trend toward multinational domination has accelerated. GM, Ford, and Chrysler have greatly increased their investments abroad.<sup>139</sup> Today, they dominate the Canadian, German, British, and Australian markets.<sup>140</sup> Moreover, they operate or intend to construct major facilities in several politically sensitive areas of the world including the Soviet Union, East Germany, Egypt, Israel, Saudi Arabia, Korea, Chile, Indonesia, Ireland, and South Africa. On at least one occasion, the U.S. Secretary of Defense has stated that these investments could seriously impair national security.<sup>141</sup>

The automobile industry's contribution to full employment and a favorable balance of international trade may also have been adversely affected by the Big Three's multinational operations. Due to their massive postwar construction of automobile plants abroad, they are no more willing to build a small "world car" in America for export than they were to produce a small car here to compete with imports. Instead, they seem to pursue a global marketing strategy which preserves monopoly profits in America and amasses additional profits from sales in foreign markets. More specifically, in America they promote the sale of large and costly cars; abroad, they build smaller and more economical automobiles. The impact of this policy on domestic employment and our trade balance may have been considerable. In 1972, the Big Three's foreign subsidiaries sold 5 million automobiles produced in nearly 200 factories located in 44 foreign countries.<sup>142</sup> Had at least some of these cars been built here instead and exported they would have generated new jobs in automobile manufacturing, additional jobs in allied industries and a favorable contribution to our balance of trade.<sup>143</sup> There are grounds to question, therefore, whether the automakers' multinational operations are either in this Nation's best political or economic interests.

The foregoing analysis strongly suggests that as currently structured the automobile industry is incapable of behaving and performing satisfactorily. High concentration and insurmountable barriers to entry enable the Big Three to fix prices, suppress technology, and reap monopoly profits. Vertical integration inflates costs and locks the industry into a superseded technological age. Multinational expansion jeopardizes the Nation's political and economic well-being. Poor performance is the inevitable consequence: monopoly overcharges, retarded innovation, diminished exports, reduced employment, a potential threat to national security, and a chronic drain on our balance of payments.

#### *B. Competition in the Motor Vehicle Industries: Trucks*

As measured by the structural criteria set forth in part I, the truck industry would be expected to behave and perform only slightly better

than the automobile industry. Its high structural concentration approaches that of automobile manufacturing. The same firms which dominate autos also account for the bulk of trucks produced, with the one major addition of International Harvester.<sup>144</sup> Eighty-four percent of domestic production is shared by the Big Three's truck divisions; General Motors is the largest diesel engine manufacturer and with three smaller nonauto firms accounts for virtually all the diesel engines installed in U.S. trucks.<sup>145</sup> This degree of concentration, although less than that which characterizes auto production, is nevertheless substantially greater than that which is generally considered injurious to competitive conduct and satisfactory performance.<sup>146</sup>

With the exception of diesel engine production, the extent of this industry's integration roughly approximates that of automobile manufacturing. As in passenger cars, the Big Three's truck divisions are integrated upstream into major components production and downstream into exclusive franchised distribution. All three produce their own bodies and gasoline engines, most of their own transmissions, and all assemble their own trucks.<sup>147</sup> All maintain nationwide networks of franchised truck dealers, which are often dualed with passenger cars.<sup>148</sup> However, of the three automakers, only General Motors manufactures diesel engines for medium and heavy duty trucks.<sup>149</sup>

Furthermore, the condition of entry into truck production is apparently as blockaded as that of automobile production. More precisely, the industry exhibits, albeit to a lesser degree, the same high barriers to entry which characterize auto manufacturing: Vertical integration in truck body and engine production, relatively high promotional expenditures, and sizable capital requirements for integrated components production and retail distribution.<sup>150</sup> Since the 1920's, not a single domestic or foreign firm has entered truck manufacturing and survived; and entry at the marketing stage by imports has been restricted almost exclusively to the less profitable light utility vehicle submarket.<sup>151</sup>

Given its anticompetitive structure, the anticompetitive nature of the truck industry's conduct is anticipated. High concentration, relatively extensive integration, and formidable barriers to entry have eroded the incentive for price and technological competition, and have encouraged instead the emergence of interdependent or shared monopolization: New truck prices are set at higher than competitive levels, product policies are protectively imitated, and technology is suppressed.

The same patterns of interdependent and collusive pricing characteristic of the auto industry occur in truck manufacturing. Again, General Motors acts as the industry price leader, with Ford and Chrysler ("Dodge") adjusting their prices up or down accordingly.<sup>152</sup> Moreover, there is some evidence in the fleet buyers' litigation that the Big Three may have conspired to fix prices on trucks as well as autos.<sup>153</sup>

The Big Three truck divisions also interdependently avoid product competition by protectively imitating each other's product policies. This, in turn, leads to uniformity in their product offerings and to suppression of potential variety in their truck performance. All of their light- and medium-weight trucks, for example, are equipped with basically the same form of piston-driven gasoline engines. Heavy duty over-the-road trucks are virtually all powered with diesel engines.<sup>154</sup> In addition, the Big Three's mutual reluctance to produce light utility

vehicles (minipickups) provides a classic example of protective product imitation. Despite the influx of minipickup imports during the late 1960's and early 1970's, Ford and Chrysler (Dodge) chose not to break the shared-monopoly ranks through innovation into this low-price truck market. Instead, with General Motors, they largely abandoned it to imports. Not until 1971, when the level of Japanese compact pickup imports became a significant factor, particularly in the West and Southwest, did GM decide to market a Japanese-made light utility vehicle ("LUV"). Subsequently, Ford and Chrysler protectively emulated GM by introducing their own Japanese-built minipickups (Courier and Colt, respectively).<sup>155</sup>

Technological competition in trucks is likewise eschewed by the Big Three. Their collective resistance to innovations in safety and propulsion is illustrative. Advances in truck safety such as seatbelts, seatlocks, and fuel system integrity have been introduced slowly, and largely in response to the extension of Government-mandated safety regulations from autos to trucks.<sup>156</sup> Propulsion technology has remained basically unchanged. Extensive upstream integration into conventional gasoline and GM's enormous investments in diesel engine production have discouraged the Big Three from seriously pursuing the development or purchase of alternative engines. Although they purchase rather than manufacture engines for their heavy duty trucks, Ford and Chrysler protectively imitate GM's all-diesel policy.<sup>157</sup> As a result, piston-driven gasoline and diesel engines have persisted despite the availability of a wide range of quieter, cost-competitive, and lower emission propulsion alternatives (for example, rotary, stratified-charge, gas turbine, electric, and steam turbine).<sup>158</sup> Furthermore, the few significant innovations to emerge in other areas of truck development, such as antiskid braking and heavy duty semiautomatic transmissions, have originated either from components suppliers or from the industry's handful of smaller but technologically more aggressive independent truck producers.<sup>159</sup>

Given its anticompetitive structure and conduct, this industry's less-than-satisfactory performance would seem to be a foregone conclusion. Nevertheless, a brief review of some salient shortcomings in its efficiency and progressiveness may be instructive. The Big Three's anticompetitive pricing, for example, has reduced efficiency by imposing on purchasers of its 1972 trucks monopoly overcharges estimated at more than \$600 million.<sup>160</sup> Their suppression of technological competition, particularly in alternative propulsion development, has retarded progressiveness in at least two areas of public concern: Fuel conservation and pollution control. Their collective disregard of propulsion alternatives to gasoline and diesel-powered trucks, which currently consume 27 billion gallons, or more than one-fourth, of all motor vehicle fuel has contributed substantially to this Nation's critical petroleum shortage as well as to urban air pollution.<sup>161</sup> Moreover, there is some evidence that diesel trucks, which emit 10 times the pollutants of autos and which account for a substantial proportion of lethal nitrogen oxide-ozone emissions in urban areas, may be more harmful in terms of contributing to emphysema, lung cancer, and other respiratory disorders than even passenger cars.<sup>162</sup>

On balance, therefore, it would appear that the anticompetitively structured truck industry has behaved and performed scarcely better

than the automobile industry, both of which are collectively monopolized by the same three companies.

*C. Interindustry Competition Between Motor Vehicles and Transport by Bus and Rail*

Evaluated in terms of the two structural criteria set forth in part I, the manufacture of ground transportation equipment is one of this Nation's least competitive industrial activities. More specifically, interindustry diversification and asymmetry have seriously upset the naturally competitive relationships among industries in this vital sector of the economy.

Ground transport is dominated by a single, diversified firm to an extent possibly without parallel in the American economy. General Motors, the world's largest producer of cars and trucks, has also achieved monopoly control of buses and locomotives which compete with motor vehicles for passengers and freight. Its dominance of the bus and locomotive industries, moreover, would seem to constitute a classic monopoly. Although GM technically accounts for 75 percent of current city bus production, its only remaining competitor, the Flxible Co., relies on it for diesel propulsion systems, major engine components, technical assistance, and financing.<sup>163</sup> In short, Flxible is more a distributor for GM than a viable competitor; virtually its sole function is the assembly of General Motors' bus parts for sale under the Flxible trade name. Likewise, in the production of intercity buses, its only remaining competitor, Motor Coach Industries, is wholly dependent upon GM for diesel propulsion systems and major mechanical components.<sup>164</sup> In addition, General Motors accounts for 100 percent of all passenger and 80 percent of all freight locomotives manufactured in the United States.<sup>165</sup> Such concentration in a single firm of control over three rival transportation equipment industries all but precludes the existence of competitive conduct and performance.<sup>166</sup>

The distribution of economic power in this sector is remarkably asymmetrical. As set forth in part I, economic power is fundamentally a function of concentration and size. In terms of concentration, the ground transport sector is virtually controlled by the Big Three auto companies. General Motors, Ford, and Chrysler account for 97 percent of automobile and 84 percent of truck production; GM alone dominates the bus and rail locomotive industries. Accordingly, the automakers have the power to impose a tax, in the form of a price increase, on purchasers of new cars to underwrite political campaigns against bus and rail systems.

In terms of size, there is an enormous divergence between the competing automotive and nonautomotive industries. Moreover, General Motors' diversification program has left only a small portion of the bus and rail industries in the hands of independent producers. As measured by aggregate sales, employment, and financial resources, therefore, the independent bus and rail firms are no match for the automakers.<sup>167</sup> The Big Three's aggregate sales of motor vehicles and parts amount to about \$52 billion each year, or more than 25 times the combined sales of trains, buses, subway and rapid transit cars by the four largest firms other than GM which produce bus and rail vehicles: Pullman and Budd (railway freight and passenger cars,

subway and rapid transit cars); Rohr (buses and rapid transit cars); General Electric (commuter railcars and locomotives).<sup>168</sup> The Big Three automakers employ nearly 11½ million workers, or more than three times as many as their four principal rivals; General Motors alone maintains plants in 19 different States.<sup>169</sup> The Big Three also excel in their ability to finance lobbying and related political activities. GM, Ford, and Chrysler annually contribute more than an estimated \$14 million to trade associations which lobby for the promotion of automotive transportation. By contrast, their four leading rivals contribute not more than \$1 million, or less than one-tenth this amount, to rail transit lobbies.<sup>170</sup> The magnitude of their sales, employment, and financial resources, therefore, affords the automakers overwhelming political influence.

It may be argued, moreover, that due to their conflicting interlocks with the motor vehicle manufacturers, these bus and rail firms would be reluctant to set their economic and political resources against them. Eighty percent of Budd's sales, for example, consist of automotive components purchased by the Big Three; Rohr, which also owns the Flxible Co., is wholly dependent upon GM for major bus components; Pullman derives more income from manufacturing trailers for highway trucks than from selling freight cars to the railroads; and General Electric manufactures a vast range of automotive electrical equipment, including about 80 percent of all automotive lamps.<sup>171</sup> In sum, the independent bus and rail equipment manufacturers are probably unable and possibly unwilling to oppose the Big Three automakers effectively in political struggles over transportation policy.

Lacking a competitive structure, the group of industries responsible for providing us with ground transportation equipment fail to behave competitively. Diversification by General Motors into bus and rail production may have contributed to the displacement of these alternatives by automobiles and trucks. In addition, the asymmetrical distribution of economic and political power may have enabled the automakers to divert Government funds from rail transit to highways.

The Big Three automakers' efforts to re-train nonautomotive forms of passenger and freight transport have been perfectly consistent with profit maximization. One trolley coach or bus can eliminate 35 automobiles; 1 streetcar, subway, or rapid transit vehicle can supplant 50 passenger cars; an interurban railway or railroad train can displace 1,000 cars or a fleet of 150 cargo-laden trucks.<sup>172</sup> Given the Big Three automakers' shared monopoly control of motor vehicle production and GM's diversified control of nonautomotive transport, it was inevitable that cars and trucks would eventually displace every other competing form of ground transportation.

The demise of nonautomotive transport is a matter of historical record. By 1973 viable alternatives to cars and trucks had all but ceased to exist. No producers of electric streetcars, trolley coaches, or interurban electric trains remained; only two established railcar builders (Pullman and Rohr) were definitely planning to continue production; a single firm (General Electric) still manufactured a handful of electric locomotives; and General Motors accounted for virtually all of an ever-shrinking number of diesel buses and locomotives.<sup>173</sup>

There were, of course, a number of factors involved in this decline. For example, the popularity of motor vehicles, due in large part to their initial flexibility, most certainly affected public demand for competing methods of travel. On the other hand, the demise of bus and rail forms of transport cannot, as some have suggested, be attributed to the public's desire to travel exclusively by automobile.<sup>174</sup> Rather, much of the growth in autos as well as trucks may have proceeded from the decline of rail and bus systems. In short, as alternatives ceased to be viable, automobiles and trucks became indispensable.

The sections which immediately follow relate in considerable detail how General Motors' diversification into bus and rail production generated conflicts of interest which necessarily contributed to the displacement of alternatives to motor vehicle transportation. A subsequent section will consider how asymmetry in the ground transport sector led to the political restraint of urban rail transit.

Before considering the displacement of bus and rail transportation, however, a distinction between intent and effect should be carefully drawn. This study contends that certain adverse effects flow inevitably from concentrated multi-industry structures regardless of whether these effects were actually intended. Specifically, it argues that structural concentration of auto, truck, bus, and rail production in one firm necessarily resulted in the promotion of motor vehicles and the displacement of competing alternatives. Whether that firm's executives in the 1920's actually intended to construct a society wholly dependent on automobiles and trucks is unlikely and, in any case, irrelevant. That such a society developed in part as the result of General Motors' common control of competing ground transport industries is both relevant and demonstrable.

*1. The Substitution of Bus for Rail Passenger Transportation.*—By the mid-1920's, the automobile market had become saturated. Those who desired to own automobiles had already purchased them; most new car sales had to be to old car owners.<sup>175</sup> Largely as a result, General Motors diversified into alternative modes of transportation.<sup>176</sup> It undertook the production of city and intercity motor buses. It also became involved in the operation of bus and rail passenger services. As a necessary consequence, it was confronted with fundamental conflicts of interest regarding which of these several competing methods of transport it might promote most profitably and effectively. Its natural economic incentives and prior business experience strongly favored the manufacture and sale of cars and trucks rather than bus, and particularly rail, vehicles. In the course of events, it became committed to the displacement of rail transportation by diesel buses and, ultimately, to their displacement by automobiles.

In 1925, General Motors entered bus production by acquiring Yellow Coach, which at that time was the Nation's largest manufacturer of city and intercity buses.<sup>177</sup> One year later, it integrated forward into intercity bus operation by assisting in the formation of the Greyhound Corp., and soon became involved in that company's attempt to convert passenger rail operations to intercity bus service.<sup>178</sup> Beginning in 1932, it undertook the direct operation and conversion of interurban electric

railway and local electrical streetcar and trolley bus systems to city bus operations.<sup>179</sup> By the mid-1950's, it could lay claim to having played a prominent role in the complete replacement of electric street transportation with diesel buses.<sup>180</sup> Due to their high cost of operation and slow speed on congested streets, however, these buses ultimately contributed to the collapse of several hundred public transit systems and to the diversion of hundreds of thousands of patrons to automobiles. In sum, the effect of General Motors' diversification program was threefold: substitution of buses for passenger trains, streetcars and trolley buses; monopolization of bus production; and diversion of riders to automobiles.

Immediately after acquiring Yellow Coach, General Motors integrated forward into intercity bus operation. In 1926, interests allied with GM organized and then combined with the Greyhound Corp. for the purpose of replacing rail passenger service with a GM-equipped and Greyhound-operated nationwide system of intercity bus transportation.<sup>181</sup> By mutual arrangement, Greyhound agreed to purchase virtually all of its buses from GM, which agreed in turn to refrain from selling intercity buses to any of Greyhound's bus operating competitors.<sup>182</sup> In 1928, Greyhound announced its intention of converting commuter rail operations to intercity bus service.<sup>183</sup> By 1939, six major railroads had agreed under pressure from Greyhound to replace substantial portions of their commuter rail service with Greyhound bus systems: Pennsylvania RR. (Pennsylvania Greyhound Lines), New York Central RR. (Central Greyhound Lines), Southern Pacific RR. (Pacific Greyhound Lines), New York, New Haven & Hartford RR. (New England Greyhound Lines), Great Northern RR. (Northland Greyhound Lines), and St. Louis Southwestern Railway (Southwestern Greyhound Lines).<sup>184</sup> By 1950, Greyhound carried roughly half as many intercity passengers as all the Nation's railroads combined.<sup>185</sup>

During this period, General Motors played a prominent role in Greyhound management. In 1929, for example, it was responsible for the formation, direct operation, and financing of Atlantic Greyhound, which later became Greyhound's southeastern affiliate.<sup>186</sup> Three years later, in 1932, when Greyhound was in serious financial trouble, it arranged for a million dollar cash loan.<sup>187</sup> In addition, I. B. Babcock, the president of GM's bus division, served on Greyhound's board of directors until 1938, when he was replaced by his successor at GM, John A. Ritchie.<sup>188</sup> Until 1948, GM was also the largest single shareholder in the Greyhound Corp.<sup>189</sup> In short, through its interlocking interests in and promotion of Greyhound, General Motors acquired a not insignificant amount of influence over the shape of this Nation's intercity passenger transportation. As the largest manufacturer of buses, it inevitably pursued a policy which would divert intercity traffic from rails to the intercity buses which it produced and Greyhound operated. Although this policy was perfectly compatible with GM's legitimate interest in maximizing returns on its stockholders' investments, it was not necessarily in the best interest of the riding public. In effect, the public was substantially deprived of access to an alternative form of intercity travel which, regardless of

its merits, was apparently curtailed as a result of corporate rather than public determination.

After its successful experience with intercity buses, General Motors diversified into city bus and rail operations. At first, its procedure consisted of directly acquiring and scrapping local electric transit systems in favor of GM buses. In this fashion, it created a market for its city buses. As GM General Counsel Henry Hogan would observe later, the corporation "decided that the only way this new market for (city) buses could be created was for it to finance the conversion from streetcars to buses in some small cities."<sup>190</sup> On June 29, 1932, the GM-bus executive committee formally resolved that "to develop motorized transportation, our company should initiate a program of this nature and authorize the incorporation of a holding company with a capital of \$300,000."<sup>191</sup> Thus was formed United Cities Motor Transit (UCMT) as a subsidiary of GM's bus division.<sup>192</sup> Its sole function was to acquire electric streetcar companies, convert them to GM motorbus operation, and then resell the properties to local concerns which agreed to purchase GM bus replacements.<sup>193</sup> The electric streetcar lines of Kalamazoo and Saginaw, Mich., and Springfield, Ohio, were UCMT's first targets. "In each case," Hogan stated, GM "successfully motorized the city, turned the management over to other interests and liquidated its investment."<sup>194</sup> The program ceased, however, in 1935 when GM was censured by the American Transit Association (ATA) for its self-serving role, as a bus manufacturer, in apparently attempting to motorize Portland's electric streetcar system.<sup>195</sup>

As a result of the ATA censure, GM dissolved UCMT and embarked upon a nationwide plan to accomplish the same result indirectly. In 1936 it combined with the Omnibus Corp. in engineering the tremendous conversion of New York City's electric streetcar system to GM buses.<sup>196</sup> At that time, as a result of stock and management interlocks, GM was able to exert substantial influence over Omnibus. John A. Ritchie, for example, served simultaneously as chairman of GM's bus division and president of Omnibus from 1926 until well after the motorization was completed.<sup>197</sup> The massive conversion within a period of only 18 months of the New York system, then the world's largest streetcar network, has been recognized subsequently as the turning point in the electric railway industry.<sup>198</sup>

Meanwhile, General Motors had organized another holding company to convert the remainder of the Nation's electric transportation systems to GM buses. In 1936, it caused its officers and employees, I. B. Babcock, E. J. Stone, E. P. Crenshaw, and several Greyhound executives to form National City Lines, Inc. (NCL).<sup>199</sup> During the following 14 years General Motors, together with Standard Oil of California, Firestone Tire, and two other suppliers of bus-related products, contributed more than \$9 million to this holding company for the purpose of converting electric transit systems in 16 States to GM bus operations.<sup>200</sup> The method of operation was basically the same as that which GM employed successfully in its United Cities Motor Transit program: acquisition, motorization, resale. By having NCL resell the properties after conversion was completed, GM and its allied com-

panies were assured that their capital was continually reinvested in the motorization of additional systems. There was, moreover, little possibility of reconversion. To preclude the return of electric vehicles to the dozens of cities it motorized, GM extracted from the local transit companies contracts which prohibited their purchase of " \* \* \* any new equipment using any fuel or means of propulsion other than gas." <sup>201</sup>

The National City Lines campaign had a devastating impact on the quality of urban transportation and urban living in America. Nowhere was the ruin more apparent than in the Greater Los Angeles metropolitan area. Thirty-five years ago it was a beautiful region of lush palm trees, fragrant orange groves, and clean, ocean-enriched air. It was served then by the world's largest interurban electric railway system. The Pacific Electric system branched out from Los Angeles for a radius of more than 75 miles reaching north to San Fernando, east to San Bernardino, and south to Santa Ana. Its 3,000 quiet, pollution-free, electric trains annually transported 80 million people throughout the sprawling region's 56 separately incorporated cities. Contrary to popular belief, the Pacific Electric, not the automobile, was responsible for the area's geographical development. First constructed in 1911, it established traditions of suburban living long before the automobile had arrived. <sup>202</sup>

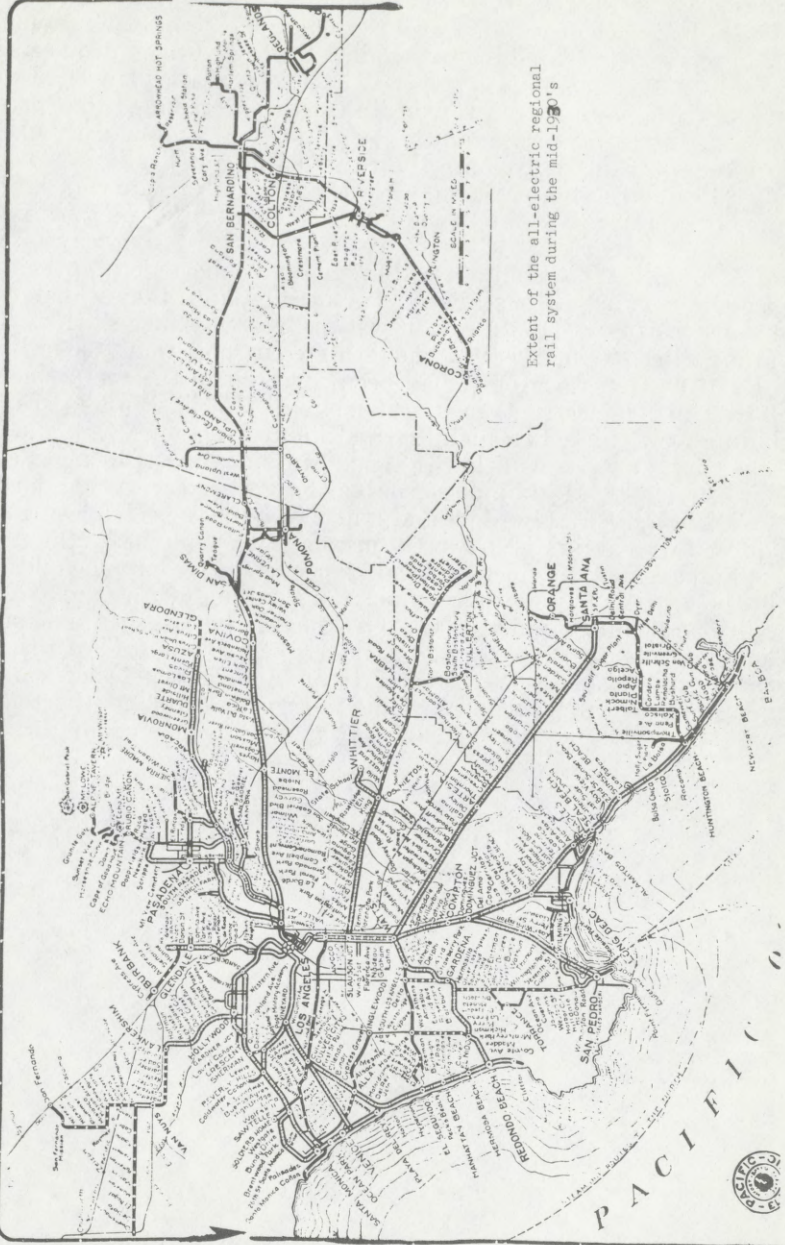
In 1938, General Motors and Standard Oil of California organized Pacific City Lines (PCL) as an affiliate of NCL to motorize west coast electric railways. The following year PCL acquired, scrapped, and substituted bus lines for three northern California electric rail systems in Fresno, San Jose, and Stockton. In 1940 GM, Standard Oil, and Firestone "assumed the active management of Pacific (City Lines)" in order to supervise its California operations more directly. That year, PCL began to acquire and scrap portions of the \$100 million Pacific Electric system including rail lines from Los Angeles to Glendale, Burbank, Pasadena, and San Bernardino. <sup>203</sup> Subsequently, in December 1944, another NCL affiliate (American City Lines) was financed by GM and Standard Oil to motorize downtown Los Angeles. At the time, the Pacific Electric shared downtown Los Angeles trackage with a local electric streetcar company, the Los Angeles Railway. American City Lines purchased the local system, scrapped its electric transit cars, tore down its power transmission lines, ripped up the tracks, and placed GM diesel buses fueled by Standard Oil on Los Angeles' crowded streets. <sup>204</sup> In sum, GM and its auto-industrial allies severed Los Angeles' regional rail links and then motorized its downtown heart. <sup>205</sup>

Motorization drastically altered the quality of life in southern California. Today, Los Angeles is an ecological wasteland: The palm trees are dying from petrochemical smog; the orange groves have been paved over by 300 miles of freeways; the air is a septic tank into which 4 million cars, half of them built by General Motors, pump 13,000 tons of pollutants daily. With the destruction of the efficient Pacific Electric rail system, Los Angeles may have lost its best hope for rapid rail transit and a smog-free metropolitan area. "The Pacific Electric."

wrote UCLA Professor Hilton. "could have comprised the nucleus of a highly efficient rapid transit system, which would have contributed greatly to lessening the tremendous traffic and smog problems that developed from population growth."<sup>206</sup> The substitution of GM diesel buses, which were forced to compete with automobiles for space on congested freeways, apparently benefited GM, Standard Oil, and Firestone, considerably more than the riding public. Hilton added: "the (Pacific Electric) system, with its extensive private right of way, was far superior to a system consisting solely of buses on the crowded streets."<sup>207</sup> As early as 1963, the city already was seeking ways of raising \$500 million to rebuild a rail system "to supersede its present inadequate network of bus lines."<sup>208</sup> A decade later, the estimated cost of constructing a 116-mile rail system, less than one-sixth the size of the earlier Pacific Electric, had escalated to more than \$6.6 billion.<sup>209</sup>

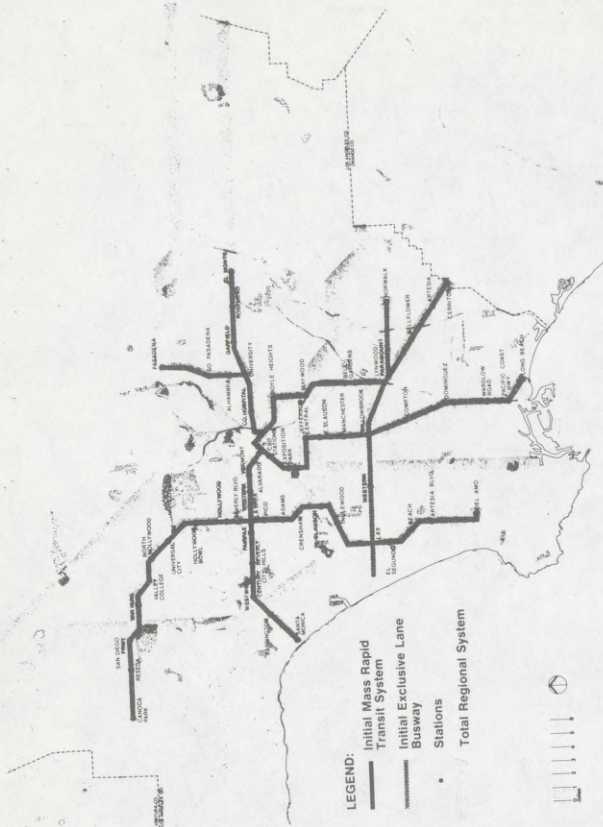
By 1949, General Motors had been involved in the replacement of more than 100 electric transit systems with GM buses in 45 cities including New York, Philadelphia, Baltimore, St. Louis, Oakland, Salt Lake City, and Los Angeles. In April of that year, a Chicago Federal jury convicted GM of having criminally conspired with Standard Oil of California, Firestone Tire and others to replace electric transportation with gas- or diesel-powered buses and to monopolize the sale of buses and related products to local transportation companies throughout the country.<sup>210</sup> The court imposed a sanction of \$5,000 on GM. In addition, the jury convicted H. C. Grossman, who was then treasurer of General Motors. Grossman had played a key role in the motorization campaigns and had served as a director of PCL when that company undertook the dismantlement of the \$100 million Pacific Electric system. The court fined Grossman the magnanimous sum of \$1.<sup>211</sup>

LINES OF THE PACIFIC ELECTRIC RAILWAY IN SOUTHERN CALIFORNIA



Extent of the all-electric regional rail system during the mid-1930's

THE PROPOSED \$6.6 BILLION REGIONAL RAIL SYSTEM FOR LOS ANGELES (1973)



INITIAL PROGRAM AND ULTIMATE SYSTEM

NOTE.—The initial system would cover only the corridors indicated by the solid dark lines and would extend no farther than Canoga Park to the northwest, El Monte to the east, and Long Beach to the south. As compared with the earlier Pacific Electric system, therefore, this proposed network would serve roughly one-fourth as much of the Los Angeles-Southern California region.

Despite its criminal conviction, General Motors continued to acquire and dieselize electric transit properties through September of 1955.<sup>212</sup> By then, approximately 88 percent of the nation's electric streetcar network had been eliminated. In 1936, when GM organized National City Lines, 40,000 streetcars were operating in the United States; at the end of 1955, only 5,000 remained.<sup>213</sup> In December of that year, GM bus chief Roger M. Kyes correctly observed: "The motor coach has supplanted the interurban systems and has for all practical purposes eliminated the trolley (streetcar)."<sup>214</sup>

The effect of General Motors' diversification into city transportation systems was substantially to curtail yet another alternative to motor vehicle transportation. Electric street railways and electric trolley buses were eliminated without regard to their relative merit as a mode of transport. Their displacement by oil-powered buses maximized the earnings of GM stockholders; but it deprived the riding public of a competing method of travel. Moreover, there is some evidence that in terms of air pollution and energy consumption these electric systems were superior to diesel buses. In any event, GM and its oil and tire coconspirators used National City Lines as a device to force the sale of their products regardless of the public interest. As Professor Smerk, an authority on urban transportation, has written, "Street railways and trolley bus operations, even if better suited to traffic needs and the public interest, were doomed in favor of the vehicles and material produced by the conspirators."<sup>215</sup>

General Motors' substitution of buses for city streetcar lines may also have contributed in an indirect manner to the abandonment of electric railway freight service. During the 1930's merchants relied extensively on interurban electric railways to deliver local goods and to interchange distant freight shipments with mainline railroads.<sup>216</sup> The Pacific Electric, for example, was once the third largest freight railroad in California; it interchanged freight with the Southern Pacific, the Union Pacific and the Santa Fe.<sup>217</sup> In urban areas, these railways often ran on local streetcar trackage.<sup>218</sup> The conversion of city streetcars to buses, therefore, deprived them of city trackage and hastened their replacement by motor trucks, many of which, incidentally, were produced by GM.

General Motors also stood to profit from its interests in highway freight transport. Until the early 1950's, it maintained sizable stock interests in two of the Nation's largest trucking firms, Associated Transport and Consolidated Freightways, which enjoyed the freight traffic diverted from the electric railways.<sup>219</sup> By 1951, these two companies had established more than 100 freight terminals in 29 States coast-to-coast and, more than likely, had invested in a substantial number of GM diesel-powered trucks.<sup>220</sup>

GM's diversification into bus and rail operations would appear not only to have had the effect of foreclosing transport alternatives regardless of their comparative advantages but also to have contributed at least in part to urban air pollution problems. There were in fact some

early warnings that GM's replacement of electric-driven vehicles with diesel-powered buses and trucks was increasing air pollution. On January 26, 1954, for instance, E. P. Crenshaw, GM bus general sales manager, sent the following memorandum to F. J. Limback, another GM executive:

There has developed in a number of cities "smog" conditions which has resulted in Anti-Air Pollution committees, who immediately take issue with bus and truck operations, and especially Diesel engine exhaust. In many cases, efforts are being made to stop further substitution of Diesel buses for electric-driven vehicles. . . .<sup>221</sup>

Three months later, in April 1954, the American Conference of Governmental Industrial Hygienists adopted a limit of 5 parts per million for human exposure to nitrogen oxides.<sup>222</sup> Diesel buses, according to another report by two GM engineers, emitted "oxides of nitrogen concentrations over 200 times the recommended" exposure limit.<sup>223</sup> Nevertheless, the dieselization program continued. Crenshaw reported to Limback in 1954:

The elimination of street-cars and trolley-buses and their replacement by our large GM 51-passenger Diesel Hydraulic coaches continues steadily . . . in Denver, Omaha, Kansas City, San Francisco, Los Angeles, New Orleans, Honolulu, Baltimore, Milwaukee, Akron, Youngstown, Columbus, etc.<sup>224</sup>

2. *The Displacement of Bus Transit by Automobiles.*—Diversification into bus production and, subsequently, into bus and rail operation inevitably encouraged General Motors to supplant trains, streetcars and trolley buses with first gasoline and then diesel buses. It also contributed to this firm's monopolization of city and intercity bus production. The effect of GM's mutually exclusive dealing arrangement with Greyhound, for example, was to foreclose all other bus manufacturers and bus operating concerns from a substantial segment of the intercity market.<sup>225</sup> At least by 1952, both companies had achieved their respective monopolies: GM dominated intercity bus production and Greyhound dominated intercity bus operation.<sup>226</sup> By 1973, GM's only competitor, Motor Coach Industries (established in 1962 by Greyhound as the result of a Government antitrust decree), was wholly dependent on it for major components; and Greyhound's only operating competitor, Trailways, had been forced to purchase its buses from overseas.<sup>227</sup> In the process, a number of innovative bus builders and potential manufacturers, including General Dynamics' predecessor (Consolidated Vultee) and the Douglas Aircraft Co., had been driven from the industry.<sup>228</sup>

Likewise, in the city bus market, GM's exclusive bus replacement contracts with National City Lines, American City Lines, Pacific City Lines, the Omnibus Corporation, Public Transport of New Jersey and practically every other major bus operating company foreclosed competing city bus manufacturers from all but a handful of cities in the country and assured GM monopoly control of this market as well.<sup>229</sup> Since 1925 more than 50 firms have withdrawn from city bus manufacturing including Ford, ACF-Brill, Marmon-Herrington, Mack Trucks, White Motor, International Harvester, Studebaker Twin Coach, Fifth Avenue Coach, Chrysler (Dodge), and Reo Motors.<sup>230</sup> By 1973, only the FlixBle Company, which had been established and controlled until 1958 by C. F. Kettering, a GM vice-president, remained as

effectively a competitor-assembler of GM city buses.<sup>231</sup> One other firm, AM General (American Motors), had announced its intention to assemble GM-powered city buses for delivery in late 1973.<sup>232</sup> The ability of this firm, or for that matter Flexible and Motor Coach Industries, to survive beyond 1975, however, was seriously doubted by industry observers. That year a Government antitrust decree compelling GM to supply bus assemblers with diesel engines, transmissions and other major components will expire.<sup>233</sup>

Monopolization of bus production and the elimination of electric street transportation has brought an end to price and technological competition in these industries. In this regard, several cities led by New York have filed a lawsuit charging that General Motors sets higher-than-competitive prices for its diesel buses and receives millions of dollars annually in monopoly profits. The suit also alleges that GM may be disregarding technological innovations in propulsion, pollution control and coach design, which would help attract patrons out of their automobiles.<sup>234</sup>

In light of our dwindling petroleum supplies and mounting concerns about air pollution, the decline of technological competition in bus manufacturing is particularly unfortunate. ACF-Brill, Marmon-Herrington, Pullman-Standard, Twin Coach, and St. Louis Car once built electric buses and electric streetcars.<sup>235</sup> Other firms manufactured steam-driven buses.<sup>236</sup> According to a number of studies, these alternative forms of motive power would be preferable in terms of energy consumption, efficiency, pollution, noise, and durability to the diesel engine.<sup>237</sup> Exclusion of these innovative firms, however, and GM's apparent disinterest in steam- or electric-powered vehicles (whose longer life, fewer parts, and easier repair would drastically reduce replacement sales), have precluded the availability of these technological alternatives today.<sup>238</sup> Moreover, domination of domestic bus manufacturing by the world's largest industrial concern tends to deter entry by smaller, innovative firms. Lear Motors, for example, has developed quiet, low-pollution steam turbine buses; Mercedes-Benz, which sells buses in 160 countries, has produced low-pollution electric buses.<sup>239</sup> Neither these nor any other firms, however, have been able to break into the GM-dominated American bus market. Furthermore, GM's conversion of much of this country's streetcar and interurban trackage to bus routes has precluded the survival of domestic streetcar builders and deterred entry by foreign railcar manufacturers. As a result, there remain few transit alternatives to GM diesel buses. None of the early White or Doble steam buses are still in operation.<sup>240</sup> The last electric streetcars were built in 1953; only one electric bus (built in Canada) has been delivered since 1955.<sup>241</sup> In 1973, only five American cities continued to operate electric buses, and eight ran a handful of ancient streetcars.<sup>242</sup>

General Motors' gross revenues are 10 times greater if it sells cars rather than buses.<sup>243</sup> In theory, therefore, GM has every economic incentive to discourage bus ridership. In fact, its bus dieselization program may have generated that effect. Engineering studies strongly suggest that conversion from electric transit to diesel buses results in higher operating costs, loss of patronage, and eventual bankruptcy. They demonstrate, for example, that diesel buses have 28 percent shorter economic lives, 40 percent higher operating costs, and 9 per-

cent lower productivity than electric buses.<sup>244</sup> They also conclude that the diesel's foul smoke, ear-splitting noise, and slow acceleration may discourage ridership.<sup>245</sup> In short, by increasing the costs, reducing the revenues, and contributing to the collapse of hundreds of transit systems, GM's dieselization program may have had the long-term effect of selling GM cars.<sup>246</sup>

Today, automobiles have completely replaced bus transportation in many areas of the country. Since 1952, the year GM achieved monopoly control of bus production, ridership has declined by 3 billion passengers and bus sales have fallen by about 60 percent.<sup>247</sup> During that same period, GM automobile sales have risen from 1.7 million to more than 4.8 million units per year.<sup>248</sup> By 1972, in a move which possibly signified the passing of bus transportation in this country, General Motors had begun converting its bus plants to motor home production.<sup>249</sup>

3. *The Displacement of Railroad Transportation by Automobiles and Trucks.*—As described in the preceding section, General Motors' diversification into bus transportation contributed to two developments: The displacement of passengers from rail to bus and eventually to automobile travel, and the shift in freight from rail to trucks. GM's integration into locomotive production was arguably an additional factor in the diversion of rail passengers to automobiles and rail freight to trucks. In 1930, it entered the locomotive industry by acquiring Winton Engine and Electro-Motive. At that time, Winton was the largest manufacturer of heavy diesel engines.<sup>250</sup> Electro-Motive, a principal customer of Winton, was the leading firm in the application of diesel engines to railroad motive power.<sup>251</sup> By combining these firms, GM became the Nation's largest manufacturer of train locomotives.<sup>252</sup>

As the world's largest manufacturer of cars and trucks, General Motors was inherently ill suited to promote train transportation. Indeed, it had every economic incentive to repress this method of travel. A single GM-powered passenger train could displace as many as 1,000 GM cars; a GM-powered freight train could supplant a fleet of 150 GM trucks. From the standpoint of economics, moreover, GM's gross revenues were from 25 to 35 times larger if it sold cars and trucks rather than train locomotives.<sup>253</sup>

In fact, General Motors' diversification into railroads probably weakened this industry's ability to compete with motor vehicles. More specifically, GM eliminated technological alternatives in train motive power which were arguably more efficient than the diesel combustion system it promoted. Its production of diesels rather than electric- or steam-driven locomotives, however, was entirely rational in terms of profit maximization. First, dieselization would vastly increase locomotive sales. A diesel locomotive, for example, lasted one-half as long, did one-third the work, and cost three times more than an electric locomotive.<sup>254</sup> Second, as compared with railroad electrification, dieselization was substantially less of a threat to car and truck transportation. Diesel trains were sluggish, noisy, and generally less attractive to passengers than rapid, quiet, pollution-free electric trains. In addition, they were less powerful and therefore not as efficient in hauling freight. As the Nation's largest shipper of freight, GM was able to exert con-

siderable influence over the locomotive purchasing policies of the Nation's railroads. It used this powerful form of leverage to sell its diesel locomotives. Before long, it had dieselized the entire American railroad industry, and simultaneously had obtained a monopoly in the production of locomotives. As a consequence, alternative forms of motive power, such as electricity which might have enabled the railroads to compete more effectively with cars and trucks, were disregarded.

General Motors dieselized the Nation's railroads by using its freight business to coerce them to purchase its diesel locomotives. In 1935, with barely 2.4 percent of industry sales, it embarked upon a dual plan to monopolize locomotive production and to dieselize the American railroad industry. At that time, electric locomotives outnumbered diesel units 7 to 1, and several firms were developing a steam turbine engine to replace the conventional steam locomotive.<sup>255</sup> In November, GM ordered its traffic division to begin routing freight over railroads which agreed reciprocally to scrap their electric and steam equipment for GM diesels. For the next 35 years it used its formidable leverage as the largest commercial shipper to exclude locomotive competitors and to force the railroads to convert to all-diesel operation.<sup>256</sup> By 1970, it had effectively dieselized the entire industry: steam units were virtually extinct; and diesels, 80 percent of which were manufactured by GM, outnumbered electric locomotives 100 to 1.<sup>257</sup>

The dieselization of America's railroads did not require blatant acts of coercion. Rail executives were fully aware of GM's formidable freight leverage. As an interoffice legal memorandum drafted by GM's antitrust attorneys stated, "GM could, in all probability, have successfully capitalized upon the railroad's sensitivity to reciprocity by frequently reminding them of GM's considerable traffic, and could have done so without ever interfering substantially with the economical routing of traffic."<sup>258</sup> Nevertheless, on occasion, GM may have resorted to blatant pressure.

In November 1948, for instance, Roy B. White, president of the Baltimore & Ohio Railroad, was apparently contacted by Alfred P. Sloan, Jr., chairman of General Motors, regarding GM's offer to locate one of its warehouses on B. & O.'s tracks in return for B. & O.'s agreement to convert to GM diesels. Later that month, White replied by letter to Sloan to the effect: "Here is your Christmas present . . . we will purchase 300 diesel locomotives . . . we now expect to receive a New Year's gift from you . . . locate your warehouse near our tracks."<sup>259</sup> Likewise, in the fall of 1958 a General Motors official informed Gulf, Mobile & Ohio Railroad that certain GM traffic would not be routed over its lines because other railroads had purchased more GM diesel locomotives than Gulf.<sup>260</sup>

Through its shrewd use of freight leverage, GM eliminated all but one of its competitors by 1970. Westinghouse, a pioneer in railway electrification, announced its departure from the industry in 1954.<sup>261</sup> Baldwin-Lima-Hamilton, one of the Nation's oldest railroad builders, built its last locomotive in 1956.<sup>262</sup> Fairbanks-Morse, which attempted to enter in 1944, was forced out by 1958.<sup>263</sup> In 1969, American Locomotive, an aggressive manufacturer of gas turbine, electric, steam turbine as well as diesel locomotives, and the leading exporter of rail equipment, was purchased by one of GM's automotive parts suppliers (Studebaker-Worthington) and immediately withdrawn from loco-

tive production.<sup>264</sup> By 1973, 99 percent of the locomotive fleet was dieselized and GM's only competitor, General Electric, accounted for less than 17 percent of total production.<sup>265</sup>

The immediate effect of dieselization was suppression of an alternative system of train propulsion: namely, electrification. In 1935, when GM initiated its dieselization program, two of the country's major railroads had electrified their systems and several others contemplated similar action. The New York, New Haven & Hartford had constructed the world's first 11,000-volt, 25-cycle alternating current system along 500 miles of New England track.<sup>266</sup> The Pennsylvania had inaugurated electric passenger and freight train operations between New York and Washington.<sup>267</sup> By dieselizing these and other roads, GM may have curbed in its incipency a trend toward electrification. By 1960, when virtually every other industrialized Nation in the world was electrifying their trains, America was locked-in to GM diesel locomotives.

The long-term effect of dieselization was impairment of the railroads' ability to compete effectively with cars and trucks. By vastly increasing operating, maintenance and depreciation costs, dieselization contributed to the curtailment of maintenance and service, and eventual bankruptcy of many American railroads. This process was arguably apparent in General Motors' conversion of the New Haven system from electric to diesel power. In 1956, GM reportedly used its freight leverage to coerce the railroad into scrapping all of its electric passenger and freight locomotives in favor of GM diesel passenger units.<sup>268</sup> The conversion was followed by loss of a substantial portion of the New Haven's passenger and freight traffic to cars and trucks. Dieselization may have been the responsible factor. The slower GM diesels were less attractive to New Haven passengers accustomed to rapid electric trains.<sup>269</sup> They were also less powerful and, consequently, less suitable for moving freight than the electric locomotives they replaced.<sup>270</sup> Within a short time the company began to experience serious operating deficits. These deficits coupled with the diesel's higher operating and depreciation costs compelled, in turn, cutbacks in maintenance and service, which generated another round of traffic diversion to cars and trucks.

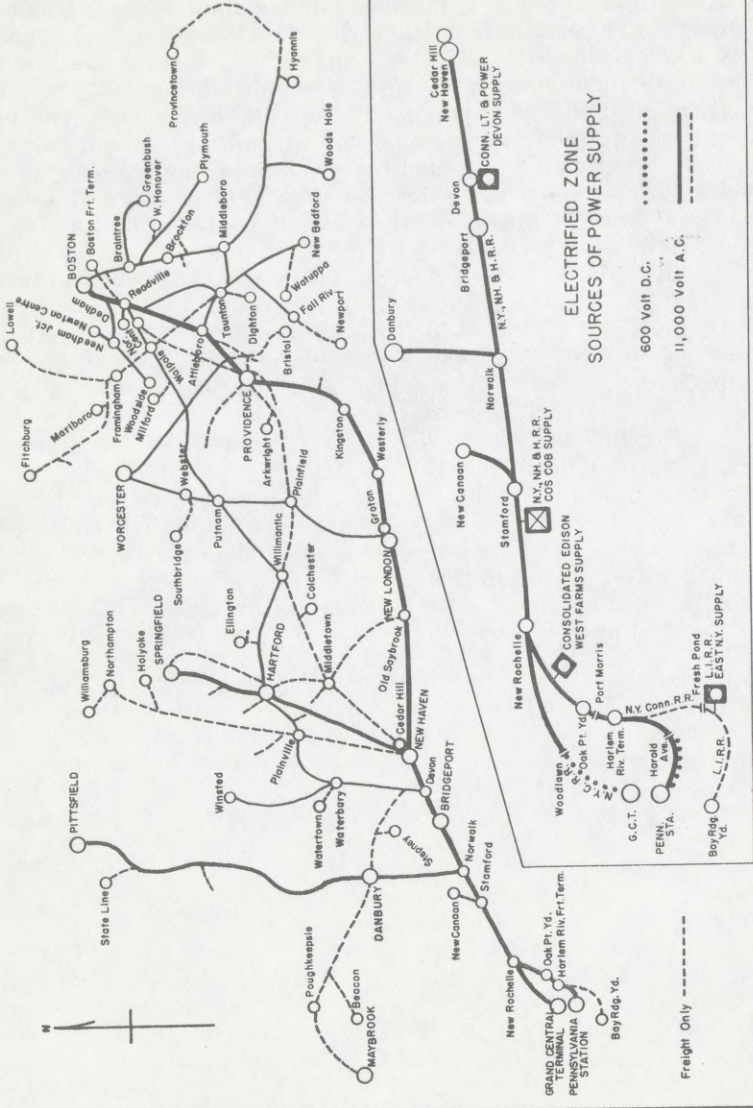
A subsequent investigation by the Interstate Commerce Commission in 1960 confirmed that in fact dieselization had contributed to the New Haven's severe financial crisis and eventual bankruptcy. Observing that "without an intelligent locomotive policy, no efficient railroad operation can possibly be conducted," the ICC hearing officers stressed the significant economic advantages which the New Haven had derived from the durability, efficiency and extraordinary power of electric locomotives.<sup>271</sup> They noted that the life of an electric locomotive was about twice that of a diesel (30 years versus 15 years, respectively) and, being a less complicated, more efficient and less delicate piece of machinery, was substantially cheaper to operate and maintain. In addition, they emphasized that a single electric locomotive could do the work of three diesels and that new electric locomotives cost only one-third as much as the diesel locomotives sold to the New Haven by General Motors.<sup>272</sup> The examiners found, however, that despite the numerous advantages of electric operation as compared with diesel and contrary to the advice of its own independent engineering consultants, the New Haven had relied instead on General Motors' "ridic-

ulous" representations as to the savings to be derived from dieselization.<sup>273</sup>

According to the ICC officials, GM's claims of anticipated savings proved to be "a mirage."<sup>274</sup> The New Haven's replacement of its electric locomotives with GM diesels generated higher operating, maintenance and depreciation expenses and substantial losses in passenger and freight revenues.<sup>275</sup> During 50 years of electrified operation, it had never failed to show an operating profit. In 1955, the year before dieselization, it earned \$5.7 million carrying 45 million passengers and 814 thousand carloads of freight.<sup>276</sup> By 1959, 7 years after GM dieselization began, it lost \$9.2 million hauling 10 million fewer passengers and 130 thousand fewer carloads of freight.<sup>277</sup> In 1961, it was declared bankrupt; by 1968, when it was acquired by the Penn Central, it had accumulated a capital deficit of nearly \$300 million.<sup>278</sup>

In 1961, the ICC upheld the hearing officers' recommended report on the bankrupt New Haven and censured General Motors for contributing to the railroad's financial ruin. Of the several factors it listed as responsible for the New Haven's downfall, it placed special emphasis on the elimination of electric locomotives.<sup>279</sup> Although it refrained from suggesting that GM was guilty of fraudulent misrepresentation, the Commission found the automakers' estimates of savings from conversion to diesels "erroneous," "inflated," and "manifestly absurd."<sup>280</sup> Referring to the "great advances in railway electrification made in Europe and in the Soviet Union," it concluded with a recommendation that the trustees undertake a study of the economic feasibility of complete reelectrification of the New Haven's main line.<sup>281</sup>

THE NEW YORK, NEW HAVEN & HARTFORD RAILROAD



The New Haven was probably not the only casualty of GM's dieselization program. All six of the major railroads serving the Northeast corridor are today bankrupt, and those in the rest of the country are earning an average of less than 2 percent on investment.<sup>282</sup> Had these roads electrified, they might have fared better financially and might have been better able to compete effectively with motor vehicles. That technological option, however, was foreclosed to them as a result, in part, of GM's diversification into railroad locomotives.

Since GM began its dieselization campaign in 1935, the railroads have progressively lost traffic first to buses and then to cars and trucks, most of which are manufactured by GM. In 1939 they carried half a million passengers and accounted for 75 percent of all freight revenues; by 1972 they had lost 50 percent of their passengers to cars, and nearly 75 percent of all freight revenue to trucks.<sup>283</sup> Whether this result was actually intended by GM is irrelevant. Nonetheless, it is difficult to believe that a firm fundamentally interested in marketing cars and trucks would develop an efficient high-speed train system that might diminish their sales.

The impact of dieselization on this Nation's railroads has been the subject of expert scrutiny. H. F. Brown, an international authority on railroad motive power, has concluded that dieselization "was the single most important factor responsible for the demise of America's railroads."<sup>284</sup> Significantly, his studies of America's experience with GM diesels helped persuade Parliament to electrify rather than dieselize the British railway system.

4. *The Political Restraint of Rail Transit.*—General Motors' diversification into streetcar, bus and railroad transportation was very likely a significant factor in their eventual displacement by automobiles and trucks. A second structural feature, the asymmetrical distribution of economic power in the ground transport sector, may also have generated the political restraint of a third alternative to automobile transportation: rail rapid transit (subways).

As discussed in part I, small deconcentrated industries are less able to influence government policymaking as effectively as their concentrated rivals. This may explain, in part, the political disregard until quite recently of rail transit as an alternative in congested urban areas to automotive transportation. Due to its high concentration and gigantic sales volume, the auto industry has accumulated hundreds of millions of dollars in revenues from higher-than-competitively-priced motor vehicles. It has used some of these revenues to finance political activities which, in the absence of effective countervailing activities by competing ground transport industries, induced government bodies to promote their product (automobiles) over other alternatives, particularly rail rapid transit.

Every industry, of course, has the constitutionally protected right to petition Government bodies and to mobilize public opinion as a means of shaping Government policies to its own private corporate advantage. This study does not take exception with that privilege. It does, however, suggest that the presence of a relatively large and highly concentrated automotive industry in the important multi-industry ground transportation sector may have resulted in the distortion of political

processes to the advantage of this industry and to the disadvantage of the riding public. The effect, in short, may have been to deprive the public of the opportunity of choosing among competing transportation alternatives. More specifically, an imbalanced distribution of political power in favor of the automakers may have encouraged the Government to allocate overwhelmingly disproportionate sums of money to highways rather than to rail systems.

Generally, the automakers' political activities have been twofold in nature: establishment of a powerful lobbying organization to promote the public financing of highways, and participation in competing associations which favored the construction of subways.

On June 28, 1932, Alfred P. Sloan, Jr., president of General Motors, organized the National Highway Users Conference to combine representatives of the Nation's auto, oil, and tire industries in a common front against competing transportation interests.<sup>285</sup> Sloan became its permanent chairman and served in that capacity until 1948, when he was succeeded by the new chairman of GM, Albert Bradley, who continued as its chairman through 1956.<sup>286</sup> Its announced objectives were dedication of highway taxes solely to highway purposes, and development of a continuing program of highway construction.<sup>287</sup>

In a statement issued the following January, NHUC formally proclaimed its political commitment to automotive transportation: "Until now those interested in automotive transportation have fought their battles independently. Participating in the National Highway Users Conference are a large majority of the interested groups. The manufacturers of motorcars and accessories have joined with the users of their equipment in the common cause of defense."<sup>288</sup> The "interested groups" included the Motor Vehicle Manufacturers Association (representing automobile and truck companies), the American Petroleum Institute (spokesman for the oil industry), the American Trucking Association (representing the trucking interests), the Rubber Manufacturers Association (comprising the tire companies) and the American Automobile Association (purporting to speak for the Nation's millions of motorists).<sup>289</sup> Although it disclaimed any intention of lobbying on behalf of these highway interests, it proposed to serve as "an agency for the coordination of activities of interested groups" and to cooperate with "such State organizations as are set up along the same lines as the national body."<sup>290</sup> Implicitly, therefore, its function was to influence Congress and the State legislatures where it claimed "the membership may be badly informed or where a considerable part of it may yield to the influence of selfish interests."<sup>291</sup>

During the succeeding 40 years, the National Highway Users Conference has compiled an impressive record of accomplishments. Its effect, if not purpose, has been to direct public funds away from rail construction and into highway building. At the State level, its 2,800 lobbying groups have been instrumental in persuading 44 of the Nation's 50 legislatures to adopt and preserve measures which dedicated State and local gasoline tax revenues exclusively to highway construction.<sup>292</sup> By promoting these highway "trust funds," it has discouraged governors and mayors from attempting to build anything other than highways for urban transportation. Subways and rail transit proposals have had to compete with hospitals, schools and other governmental responsibilities for funding. By contrast, high-

ways have been automatically financed from a self-perpetuating fund which was legally unavailable for any other purpose. Largely as a result, highways, not subways, have been built. From 1945 through 1970, States and localities spent more than \$156 billion constructing hundreds of thousands of miles of roads.<sup>293</sup> During that same period, only 16 miles of subway were constructed in the entire country.<sup>294</sup>

Likewise, at the Federal level this organization has been very successful in promoting highways over rail transportation. For example, under the early and exceptionally capable leadership of GM's Sloan and Bradley, it became a principal architect of the world's largest roadbuilding effort, the 42,500-mile, \$70-billion Interstate Highway System. During the years prior to passage in 1956 of the Interstate Highway Act, NHUC and allied highway groups had worked assiduously building support among Congressmen, Federal administrators, academicians and engineers.<sup>295</sup> They contributed to congressional campaigns, placed their members in important administrative posts, and granted millions of dollars to highway research.<sup>296</sup>

At the time, few opposed the idea of building a system of interstate highways. Only one witness during more than 2 years of congressional hearings even raised the issue of what effect it might have on the Nation's railroads.<sup>297</sup> In retrospect, a national highway program was unquestionably needed. Whether its tremendous scope and budgetary commitment, however, might preclude Federal financing of alternative rail transport systems was a point which should have been debated at that time. The uneven distribution of political resources between automakers and rail manufacturers may explain why this important question received virtually no political attention.

When Congress finally began hearings on the Interstate Highway Act in 1956, the outcome was a foregone conclusion. Only the manner of financing the program was at issue. In the end, the National Highway Users Conference managed to persuade Congress to adopt the same trust fund arrangement which it had successfully promoted earlier to the State legislatures. The impact of the Federal Highway Trust Fund on transportation spending was similar to that which occurred at the State level. While urban rail proposals were forced to compete for funds with dozens of Federal priorities including national defense, health, and social security, thousands of miles of highways were built automatically with gasoline tax revenues unavailable for any other purpose. From 1956 through 1970, the Federal Government spent approximately \$70 billion for highways; and only \$795 million, or 1 percent, for rail transit.<sup>298</sup>

Today, the National Highway Users Conference, now known as Highway Users Federation for Safety and Mobility (HUFSA), works effectively with highway-related groups such as the Motor Vehicle Manufacturers Association (MVMA) to promote the automakers' interest in more highways and less rail transit. With combined annual budgets of nearly \$16 million, most of which comes from the Big Three auto companies, HUFSA and MVMA fight State and Federal attempts to "divert" highway funds for rail transit purposes.<sup>299</sup> In this regard they are aided by a score of allied highway interests which collectively spend an estimated \$500 million a year lobbying to preserve highway trust funds.<sup>300</sup> They are also active in financing research groups which invariably conclude that automobiles, trucks, and, if

necessary, "bus transit" complete with underground diesel "busways" can satisfy every ground transportation need.<sup>301</sup>

By comparison, the three leading transit lobby groups are financially weak and torn by the conflicting interests of their membership. The American Transit Association, the largest element of the transit lobby, operates on an annual budget of about \$700,000 which must be apportioned between the conflicting political needs of its bus and rail transit manufacturing members. The Railway Institute spends an estimated \$600,000 a year. The third and smallest element of the transit body, the Institute for Rapid Transit, operates on a meager budget of about \$200,000 a year. In short, HUFSA and MVMA alone outspend the three principal transit organizations by more than 10 to 1.<sup>302</sup> Furthermore, General Motors, whose personnel organized and continue to direct the highway lobby, has secured the power to influence the policies of two of these three transit groups. Due to its position as the Nation's largest producer of bus and rail vehicles, it is a major financial contributor to both the American Transit Association and the Railway Progress Institute. It is also an influential member of the Institute for Rapid Transit.<sup>303</sup>

Absent a powerful and unequivocal rail transit lobby, those interested in balanced transportation are no match for the organized highway interests. Legislators including Senators Kennedy, Muskie, and Weicker, citizen and municipal groups such as the Highway Action Coalition and the League of Cities, Mayors Alioto (San Francisco), White (Boston), Daley (Chicago), and numerous others have failed repeatedly to shift anything other than token amounts of State and Federal gas tax revenues from highways to rail transit.<sup>304</sup> As an apparent consequence, national transportation policy principally reflects the legislative objective of the automakers: Building more highways which sell more cars and trucks.

Publicly, the automakers proclaim their support for mass transit. They cultivate this seemingly paradoxical image for two reasons. First, a protransit posture at a time of petroleum shortages and environmental concerns is good for public relations. Second, and perhaps more importantly, they seek to control and direct the development of nonautomotive transport technology in a manner least threatening to their fundamental interest: selling cars. In this regard, Ford is developing "horizontal elevators" and PRT (personal rapid transit) vehicles capable of moving people short distances within strictly downtown areas.<sup>305</sup> Ford's transit vehicles would compete, therefore, not with automobiles but with pedestrians. Likewise, General Motors is engaged in a continuing effort to divert Government funds from rapid rail transit, which seriously threatens the use of cars in metropolitan areas, to GM buses, which fail consistently to persuade people to abandon their autos. In place of regional electric rail systems, for instance, it promotes diesel-powered "bus trains" of as many as 1,400 units, each spaced 80 feet apart.<sup>306</sup> Instead of urban electric rail, it advocates the use of dual-mode gas/electric vehicles which would be adapted from GM's minimotor homes.<sup>307</sup> In sum, the automakers embrace transit in order to prevent it from competing effectively with their sales of automobiles.<sup>308</sup>

General Motors' diversification into the bus and rail industries and the asymmetrical distribution of power between automakers and rail

builders would appear to have contributed at least in part, therefore, to the decline of competing alternatives to motor vehicles. By 1973 five different forms of nonautomotive transportation had either disappeared or been seriously impaired: electric streetcars, trolley coaches, interurban electric railways, buses, and trains. In short, diversification and asymmetry in ground transport manufacturing may have retarded the development of mass transportation and, as a consequence, may have generated a reliance on motor vehicles incompatible with metropolitan needs.

*5. Current Performance of the Ground Transportation Sector.*—Due to its anticompetitive structure and behavior, this country's ground transport sector can no longer perform satisfactorily. It has become seriously imbalanced in favor of the unlimited production of motor vehicles. Unlike every other industrialized country in the world, America has come to rely almost exclusively on cars and trucks for the land transportation of its people and goods. Cars are used for 90 percent of city and intercity travel; trucks are the only method of intracity freight delivery and account for 78 percent of all freight revenues.<sup>309</sup> This substitution of more than 100 million petroleum-consuming cars and trucks for competing forms of alternatively powered ground transportation is a significant factor in this sector's unacceptable level of inefficient and nonprogressive performance.

Efficiency in terms of market performance may be defined as a comparison of actual prices or costs with those that would obtain in a competitively structured market.<sup>310</sup> Currently, Americans pay \$181 billion per year for motor vehicle transportation.<sup>311</sup> In terms of high energy consumption, accident rates, contribution to pollution, and displacement of urban amenities, however, motor vehicle travel is possibly the most inefficient method of transportation devised by modern man.

More specifically, the diversion of traffic from energy-efficient electric rails to fuel-guzzling highway transport has resulted in an enormous consumption of energy. Rails can move passengers and freight for less than one-fifth the amount of energy required by cars and trucks.<sup>312</sup> The displacement of rails by highways, therefore, has seriously depleted our scarce supplies of energy and has increased by several billion dollars a year the amount consumers must pay for ground transportation. It has been estimated, for example, that the diversion of passengers in urban areas from energy-efficient electric rail to gasoline automobiles results in their paying \$18 billion a year more in energy costs alone.<sup>313</sup> In addition, economists have found that the inefficient diversion of intercity freight from rail to trucks costs consumers \$5 billion per year in higher prices for goods.<sup>314</sup>

The substitution of highways for rails has also reduced efficiency by imposing higher indirect costs on the public in the form of accidents, pollution, and land consumption. Rail travel is 23 times as safe as travel by motor vehicles. The diversion to highways has cost the public an estimated \$17 billion each year in economic damages attributable to motor vehicle accidents.<sup>315</sup> This figure, however, cannot reflect the incalculable human costs of motor vehicle accidents: The violent deaths each year by car and truck of 55,000 Americans, more than all who died in the entire 12 years of our involvement in Viet-

nam, and the serious injuries to an additional 5 million of our citizens.<sup>316</sup>

Likewise, the costs of urban air pollution have been greatly accentuated by the imbalance in favor of cars and trucks. Motor vehicles annually consume 42 billion gallons of petroleum within the densely populated 2 percent of the U.S. geographic area classified as urban.<sup>317</sup> The consumption of this enormous quantity of fuel in urban areas produces in excess of 60 million tons of toxic pollutants, which in turn cost urban residents more than \$4 billion in economic damages.<sup>318</sup>

The presence of high concentrations of these motor vehicle pollutants, particularly oxides of nitrogen, in densely populated areas has also generated a crisis in urban public health. In Los Angeles alone, more than 500 persons die each year of ailments attributable to motor vehicle generated smog.<sup>319</sup> The hazards of carbon monoxide and hydrocarbon emissions from automobiles have been widely acknowledged.<sup>320</sup> Less well known are the potentially more serious effects of oxides of nitrogen produced primarily by diesel trucks and buses in high concentrations on congested city streets. When inhaled, these oxides combine with moisture in the lungs to form corrosive nitric acid which permanently damages lung tissues and accelerates death by slowly destroying the body's ability to resist heart and lung diseases.<sup>321</sup> By contrast, if electric rail transportation were substituted in cities for motor vehicles, urban air pollution might be reduced substantially.<sup>322</sup> Although the burning of fuels to generate this increased electrical energy would produce some pollution, it would pose a substantially less serious hazard to public health. Electric powerplants can often be located in areas remote from population centers. Moreover, the increased pollution by generating facilities would be offset by a reduction in pollution due to oil refinery operations. Furthermore, the abatement of air pollution at a relatively small number of stationary powerplants would represent a far easier task than attempting to install and monitor devices on 100 million transient motor vehicles.<sup>323</sup>

The diversion of traffic from rail to highways has imposed a third cost on consumers—the consumption of vast amounts of taxable urban landscapes from 60 to 65 percent of our cities' land area is devoted to highways, parking facilities, and other auto- and truck-related uses.<sup>324</sup> In downtown Los Angeles, the figure approaches 85 percent.<sup>325</sup> This has led to an erosion in the cities' tax base and, concomitantly, to a decline in their ability to finance the delivery of vital municipal services. Electric rail transportation, by comparison, requires less than one-thirteenth as much space as highways to move a comparable amount of passengers or goods, and in many cases can be located underground.<sup>326</sup>

Progressiveness in terms of market performance is generally understood as a comparison of the number and importance of actual innovations with those which optimally could have been developed and introduced.<sup>327</sup> The substitution of highways for rails has resulted in a decrease in mobility and has precluded important innovations in high-speed urban and intercity ground transportation. The decrease in mobility is most acute in urban areas. The average speed of rush hour traffic in cities dependent on motor vehicles, for example, is 12 miles per hour.<sup>328</sup> Studies indicate that city traffic moved more quickly in 1890.<sup>329</sup> Moreover, 20 percent of our urban population (the aged,

youth, disabled, and poor) lack access to automobiles and, due to the nonexistence of adequate public transportation, are effectively isolated from employment or educational opportunities and other urban amenities.<sup>330</sup> Substitution of highways for rails has also retarded innovations in high-speed urban and intercity transport. Technologically advanced rail transit systems, which currently operate in the major cities of Europe and Japan, would relieve congestion and contribute to urban mobility.<sup>331</sup> High-speed intercity rail systems, such as Japan's 150-mile-per-hour electric Tokaido Express, would help relieve mounting air traffic congestion and offer a practical alternative to slower and more tedious travel by car or truck.<sup>332</sup> But the political predilections of the automakers have become the guidelines for American transportation policy. In contrast to the advanced rail transport emphasis of Europe and Japan, this country has persisted in the expansion of highway transport. As a result, America has become a second-rate nation in transportation.<sup>333</sup>

There are strong indications, moreover, that due to mounting concerns about air pollution and a worldwide shortage of petroleum, our motor-vehicle-dominated transportation system will perform even worse in the future. The Environmental Protection Agency has warned that by 1977 motor vehicle emissions in major urban areas may compel a cutback in automobile, truck, and diesel bus use of as much as 60 percent.<sup>334</sup> In addition, the Department of the Interior has forecast that the current petroleum crisis might cripple transportation and cause "serious economic and social disruptions."<sup>335</sup> More precisely, an excessive reliance in the past on fuel-guzzling motor vehicles for transport has contributed to a crisis in energy which now threatens to shut down industries, curb air and ground travel, and deprive our homes of heating oil for winter.

Despite these adverse trends, the automakers appear bent on further motorization. Henry Ford II, for instance, has noted that notwithstanding "the energy crisis, the environmental crisis, and the urban crisis" new car sales in the United States "have increased by more than a million during the past 2 model years."<sup>336</sup> General Motors' chief operating executive has predicted that soon each American will own a "family of cars" for every conceivable travel activity including small cars for trips, recreational vehicles for leisure, and motor homes for mobile living.<sup>337</sup> GM is also engaged in the displacement of what little remains of this Nation's rail systems. To that end, it is developing 750-horsepower diesel engines to haul multiple trailers at speeds of 70 miles per hour along the nearly completed Interstate Highway System.<sup>338</sup> These "truck trains" are slated to replace rail freight service. As substitutes for regional subway systems, GM is also advocating 1,400-unit diesel "bus trains," which would operate on exclusive busways outside cities and in bus tunnels under downtown areas.<sup>339</sup> Both diesel truck trains and underground bus trains, however, would seem grossly incompatible with public concerns about petroleum shortages and suffocating air pollution.

The automakers' motorization program, moreover, is worldwide in scope. The superior bus and rail systems which flourish in the rest of the industrialized world interfere with the sale of cars and trucks by the Big Three's foreign subsidiaries. "The automobile industry put America on wheels," said GM Chairman Gerstenberg in September of 1972. "Today," he added, "expanding markets all around the world give us the historic opportunity to put the whole world on wheels."<sup>340</sup>

## III. RESTRUCTURING GROUND TRANSPORTATION: A FIRST APPROXIMATION

As demonstrated in part II, the anticompetitive structure of the automobile, truck, bus, and rail industries enabled General Motors, Ford, and Chrysler to suppress price, product, and technological competition in motor vehicle production and to restrain practical alternatives to motor vehicle transportation. This section considers a first approximation at restructuring these industries. In brief, it proposes reorganization of the automobile and truck industries into their constituent elements and divestiture of General Motors' bus and locomotive production facilities. The objectives are threefold: To restore competition and innovation to the motor vehicle industries; to promote a balanced and technologically advanced ground transportation system comprising low-pollution cars, trucks, and buses, as well as high-speed rail transport; and to secure the additional social advantages of energy conservation, expanded employment, and a more favorable balance of trade.

*A. Restructuring the Motor Vehicle Industries: Automobiles and Trucks*

The economic analysis in part II concluded that high structural concentration, extensive vertical integration, multinationalization, and insuperable barriers to entry precluded the longrun survival of competitive conduct and performance in motor vehicle manufacturing.<sup>341</sup> Conversely, a competitively structured industry, with numerous firms at each stage of automobile production both at home and abroad, would behave more competitively and perform more satisfactorily. It is recommended, therefore, that this industry be restructured to permit the maximum feasible number of competitors, the minimum feasible degree of vertical integration, and the maximum feasible degree of ease of entry at every level of domestic and foreign production.<sup>342</sup>

Application of these guidelines would require dissolution of General Motors, Ford, Chrysler, and, to facilitate competition in the post-reorganization environment, American Motors. More specifically, these four multinational enterprises would be reorganized into their constituent car and truck assembly, manufacturing, distribution, financing, and related automotive as well as nonautomotive facilities.

The basis for reorganization is inherent in the decentralized method of operations adopted by the four automakers. Their economists and engineers apparently have decided that efficiency in production is maximized by assigning different functions to geographically separate and distinct facilities. Motor vehicle assembly, engine production, body stamping, and dozens of other major automotive manufacturing processes, therefore, are undertaken in hundreds of physically distinct and geographically disparate plants throughout the United States and other parts of the world. As shown in table 1, the four American automakers operate more than 300 domestic facilities in 32 different States. This study assumes the wisdom of such an arrangement. It would leave unaltered the number, size, and physical location of these plants. Instead, it would recommend a change in their ownership: each plant or group of plants now separate in fact, would become separate in law as well.

TABLE 1

LOCATION OF AUTOMOTIVE PLANTS IN THE UNITED STATES AND PUERTO RICO CURRENTLY OWNED BY GENERAL MOTORS, FORD, CHRYSLER, AMC

Location	Assembly plants	Body and engine components production facilities	R. & D. facilities <sup>1</sup>	Parts depots	Total
Alabama		1		1	2
Arizona			3		3
California	<sup>2</sup> 5	1	1	11	18
Colorado			1	4	5
Connecticut		1			1
Delaware	2			1	3
Florida			1	4	5
Georgia	3			4	7
Illinois	2	3		4	9
Indiana		16	1	2	19
Kansas	1	1		4	6
Kentucky	1			1	2
Louisiana				1	1
Maryland	<sup>3</sup> 1			1	2
Massachusetts	1			5	6
Michigan	11	74	5	13	103
Minnesota	<sup>3</sup> 1			4	5
Missouri	4	5		3	8
Nebraska				1	1
New Jersey	<sup>4</sup> 3	3		4	10
New York	1	13		6	20
North Carolina				2	2
Ohio	<sup>5</sup> 3	29		8	40
Oklahoma				1	1
Oregon				3	3
Pennsylvania		1		5	6
Puerto Rico		1			1
Tennessee		1		4	5
Texas	1			8	9
Virginia	1			4	5
Washington				1	1
West Virginia				1	1
Wisconsin	<sup>4</sup> 2	3	1	2	8
Total	44	148	13	113	318

<sup>1</sup> Includes technical centers and proving grounds.

<sup>2</sup> Includes 2 which assemble trucks also.

<sup>3</sup> Assembles trucks also.

<sup>4</sup> Includes 1 which assembles trucks also.

<sup>5</sup> Includes 1 which assembles trucks also and 1 which assembles Jeeps.

Source: Motor Vehicle Manufacturers Association, "Plants of U.S. Motor Vehicle Manufacturers in the United States" (February 1973); "Annual Reports," GM, Ford, Chrysler, AMC.

As summarized in table 2, all of the American auto industry's 44 assembly plants and 148 of its most important automotive components facilities, including all of its body stamping and engine production plants, are owned by General Motors, Ford, Chrysler, and American Motors. In addition, virtually all of its 25,000 retail car outlets are contractually tied to the 4 automakers.<sup>343</sup> Many of these facilities were once independent entities which competed with one another in the production and distribution of motor vehicles.<sup>344</sup> Now they are all owned or controlled by four corporations which eschew competition in the American automobile market. Reorganizing these corporations into their constituent parts would enable as many as 44 assembly companies to become competing producers of automobiles. They could produce automobiles with improved performance capabilities assembled from the body and engine components of competing suppliers, and retailed through independent dealers. This study, of course, does not attempt to specify the exact number of existing facilities which might be separately incorporated. Further investigation might reveal that some automotive plants would operate best if jointly owned. No preliminary studies, however, have demonstrated this to be the case.

In any event, reorganization along these general lines would allow for a greater degree of competition at every significant level of automobile production and distribution.

TABLE 2.—*Automobile industry reorganization: Ownership status of U.S. automobile facilities at each level of production*

Components production :	
GM -----	73
Ford -----	39
Chrysler -----	31
American Motors-----	5
Total <sup>1</sup> -----	148
Final assembly :	
GM -----	22
Ford -----	15
Chrysler -----	6
American Motors-----	1
Total <sup>2</sup> -----	44
Retail distribution (U.S. makes) :	
GM -----	12, 045
Ford -----	6, 684
Chrysler -----	5, 406
AMC -----	1, 947
Total <sup>3</sup> -----	25, 427

<sup>1</sup> Does not include R. & D. facilities or parts depots.

<sup>2</sup> Plants may also include some manufacturing operations.

<sup>3</sup> Big Four breakout includes 655 intercorporate duals.

SOURCE: 1972 annual reports for General Motors, Ford, Chrysler, and American Motors; various statistical reports compiled by the Motor Vehicle Manufacturers Association.

Likewise, in truck manufacturing, 19 of the industry's 41 assembly plants, many of its major component facilities (particularly GM's diesel engine plants at Detroit and Grand Rapids, Mich.) and most of its wholesale and retail outlets are owned by or contractually tied to the Big Three automakers.<sup>345</sup> Fourteen of the Big Three's 19 assembly plants produce both light trucks and automobiles. As light trucks (compact pickups) are fundamentally a variety of personal automobiles and are often run on the same assembly line as autos, there would appear to be no reason to separate their production. Accordingly, these 14 plants could become independent car/truck corporations pursuant to the auto industry reorganization. In addition, unpacking the automakers' remaining all-truck assembly plants, truck body and components facilities and retail outlets might contribute to renewed competition at each level of truck production.

Supplemental measures would be necessary to provide the newly incorporated motor vehicle assemblers and automotive components suppliers with equal access to research, engineering, and design services. GM, Ford, Chrysler, and AMC each maintain automotive design, research and engineering centers, and proving grounds.<sup>346</sup> These facilities could be reorganized into independent corporations to compete with other consulting groups in providing auto assemblers and components suppliers with design, research, and engineering assistance. In light of the critical role of these functions in automobile manufacturing, however, it is assumed that auto (and truck) assemblers might decide to undertake some of them in-house.<sup>347</sup>

The new assemblers and components suppliers as well as retail dealers would also require wholesale parts distribution services. Currently the four automakers own more than 100 automotive parts depots and operate an indeterminate number of wholesale distribution outlets. To insure that assemblers, suppliers, and dealers have adequate access to wholesale parts services, these facilities might be reorganized into independent corporations in the automotive wholesale and after-market (replacement parts) trade.

Moreover, steps should be taken to insure that independent retail dealers have equal access to adequate financing services. Currently, each of the automakers maintains a wholly owned finance company. In fact, General Motors Acceptance Corp., with assets in excess of \$12 billion, is the largest finance unit in the Nation.<sup>348</sup> Reorganizing the automakers' finance subsidiaries into several regional corporations might best serve the interests of local dealers while increasing competition in regional lending markets.<sup>349</sup>

The disposition of automobile brand names (GM, Chevrolet, Ford, Dodge, et cetera) would also affect the viability of the new car and truck assemblers. Retention of brand names currently associated with the four automakers might handicap some assemblers while favoring others. Their dedication to the public domain, therefore, would insure that no one assembler, by retaining the exclusive right to use a popular brand name (such as, Chevrolet), would enjoy an unfair advantage over another.

Our paramount concern for national security and long-term economic stability would seem also to require the eventual release of foreign automotive facilities from control by domestic makers. As the analysis in part I demonstrated, the construction abroad of motor vehicle plants can compromise U.S. national security and can undermine national economic policies. The relative ease with which automotive facilities can be converted to warplane, tank, and military transport production makes this category of multinational investment particularly hazardous to national security and foreign policy. In light of the enormous contribution of motor vehicle manufacturing to domestic employment and overall industrial growth, its movement abroad threatens domestic economic stability more than the multinational ventures of any other industry. By contrast, the sale abroad of products and services by competitively structured, nationally based motor vehicle firms would contribute immensely to domestic employment, economic stability, and a favorable balance of trade, while preserving our legitimate interests in national security. At the same time, such an arrangement would permit the sale of technological services and managerial/production know-how to less developed countries.

General Motors, Ford, Chrysler, and AMC own car and truck assembly, parts manufacturing, distribution, and finance subsidiaries in 44 foreign countries. To generate new competition in the world automobile market, discourage the export of American capital and jobs abroad, and protect our national interests in the event of international conflicts, these subsidiaries should be sold to holders of U.S. dollars abroad. United Auto Workers President Leonard Woodcock strongly supports this plan. He has suggested that the U.S. Government "encourage foreign owners of dollars to use them to acquire the assets of the subsidiaries of U.S.-based MNC's (multinational corporations)

operating within their respective national boundaries." "Those subsidiaries," he said, "would then become independent national competitors of their parent MNC's, thus reversing—at least temporarily—the trend toward world oligopoly." Woodcock's proposal would also benefit this country's balance of payments. "At the same time," he added, "a substantial part of the dollar overhang would be removed as an obstacle to reform of the international monetary system."<sup>350</sup>

In general, the management, shareholders, and employees of the four automakers, as well as consumers, would all benefit from the proposed reorganization of the motor vehicle industries. For the first time the management of hundreds of facilities formerly controlled by four corporations would now command their own companies. No longer would they be subject to the mind-dulling bureaucratization of a giant organization which, in the words of one formerly high-ranking auto executive, is "totally inconsistent with any thoughtful and creative originality."<sup>351</sup> Instead, they would decide what prices to charge, what products to make, which innovations to pursue. The assembler executives, in particular, would enjoy complete technological flexibility. They could build rotary cars, electric cars, steam cars, Freon cars, fuel-cell cars; they could stress fuel economy, or safety, or pollution control as well as style. Competition, moreover, would drive them seriously to assess technological alternatives and marketing strategies which might win consumers away from other assembler-rivals.

Nondominant shareholders would also benefit. They would maintain their continuity of stock interests in a diversified range of smaller, more aggressively competitive companies rather than in only 4 increasingly bureaucratic, moribund and unimaginative monoliths. To avoid ownership interlocks, however, dominant shareholders, directors and executives would be required to dispose of their interests in all but one of the newly created automotive companies.

Employees would also be expected to benefit from the proposed reorganization. The return of competition, particularly with respect to the automotive export market, would very likely increase production and hence employment. Competition might spur these new companies to seek novel ways of raising worker productivity, such as through the less dehumanizing production technique of team assembly or possibly through worker participation in some phases of management decisionmaking.<sup>352</sup> In short, the opportunity to work for a smaller, more innovative company should enhance employee satisfaction.

A motor vehicle industry composed of competing assemblers, independent suppliers and a network of independent retail dealers, moreover, should provide consumers with better automotive transportation. The same plants which today assemble monopolistically priced and virtually unchanged cars and trucks would after reorganization be forced to adapt to a new, competitive environment. The emergence of price and technological competition in turn should result in the development of energy-conserving, economical, safer, low-pollution vehicles powered by innovative propulsion systems. This is the quality of industry performance reorganization should engender.

### *B. Restructuring the Bus and Rail Industries*

The economic analysis in part II demonstrated that the automakers' lobbying against rail transit and General Motors' diversification into

bus and rail transportation very likely restrained these alternative forms of transport from effective competition with cars and trucks. A reduction in the automakers' resources for anticompetitive political lobbying and termination of GM's conflicting involvement in competing ground transport industries would appear, therefore, to be essential prerequisites to achieving a balanced system of ground transportation. In this regard, a three-part structural remedy is suggested. First, deconcentration of the motor vehicle industries in the manner already proposed would reduce their ability to pass on the costs of antirail lobbying to consumers in the form of higher priced cars and trucks. Second, reorganization of GM's bus and rail divisions into independent corporations would enable them to operate free from the conflict of interest which may have seriously hampered their development under GM ownership. Third, the facilitation of entry by a number of new bus and rail enterprises would provide this country with the competitive manufacturing capability necessary for the production of modern passenger and freight transport systems.

Reorganization of the automobile and truck industries as recommended would virtually eliminate the automakers' current power to raise substantial revenues for lobbying. They would no longer be able to contribute vast sums to fight rail transit by charging higher-than-competitive prices for their motor vehicles. Instead, the return of competition to this industry should force prices back into line with actual production costs. Of course, the new car and truck producers might continue to contribute some funds for antirail lobbying through an industrywide trade association. But lacking the Big Three's prior monopolistic control over prices, they would be reluctant as individual competitors to raise their costs appreciably for this nonessential purpose. Moreover, in a competitive environment, there would probably be some firms which by refusing to contribute could reduce their prices and increase their share of the market. This form of competitive discipline, therefore, would very likely bring the lobbying resources of the auto interests into more approximate balance with those of the rail interests, a situation which would better serve the public interest.

Reorganization of General Motors' bus and rail divisions into independent corporations would appear to be both desirable and precedent. It would enable these bus and rail manufacturers to develop free from the conflicts of interest which quite possibly restrained them from effective competition with cars and trucks. Separation of these facilities from the world's largest motor vehicle manufacturer, moreover, is precedent. As summarized in part I, the policy of Congress for nearly 60 years has been to maintain competition among operators of competing modes of transport by prohibiting their common control. This was the rationale underlying the Panama Canal Act of 1912 (now part of section 5 of the Interstate Commerce Act), the Motor Carrier Act of 1935, the Civil Aeronautics Act of 1938, and the Transportation Act of 1940. Segregation of GM's bus, rail, and motor vehicle facilities into independent corporations, therefore, would be in harmony with well-established pre-existing congressional policy.

Furthermore, there is some precedent for applying this congressional policy to manufacturers as well as operators of transport equipment. In 1934 Congress passed the McKellar-Black Air Mail Act, which prohibited the common ownership of aviation manufacturing

and aviation transport companies. As revealed in the floor statements of its cosponsor Senator Black, the act was specifically designed to preclude GM's control of the aviation industry. Senator Black warned that unless the proposed legislation were enacted "our aviation industry is definitely headed for General Motors' . . . control."<sup>353</sup> At the time, GM held substantial interests in both aircraft manufacturing and air transport companies, including Eastern Air Lines, Western Air Lines, TWA, and United Air Lines (aviation transport) and Douglas Aircraft, Bendix Aviation, B/J Aircraft, Allison Engineering and General Aviation Manufacturing Co. (aviation manufacturing).<sup>354</sup> Although GM's common control of competing highway, rail, and air transportation was not formally raised as an issue during the congressional debates, GM Chairman Sloan subsequently implied that it had entered the aviation industry to protect its interest in the promotion of automobiles. "[W]e got into aviation because we thought the . . . airplane would be an important competitor of the automobile . . . and we felt that we had to gain some protection by 'declaring ourselves in' the aviation industry."<sup>355</sup> Pursuant to the mandate of the 1934 act, GM disposed of its interests in the four airlines.<sup>356</sup> In sum, a reasonable reading of the policies embodied in the Panama Canal-Motor Carrier-Civil Aeronautics Acts and in the Air Mail Act would seem by analogy to prohibit the common ownership of competing ground transport manufacturing facilities.

Reorganization of GM's bus and rail facilities would be relatively uncomplicated. In general, the company has combined bus and truck manufacturing within the same facilities. Specifically, it manufactures both bus and truck diesel engines at its Detroit Diesel-Allison plant; and it engages in the final assembly of buses as well as trucks at its GMC complex in Pontiac, Mich.<sup>357</sup> These and other bus facilities, therefore, would be separated from GM ownership simultaneously with the proposed reorganization of the truck industry discussed earlier.<sup>358</sup> With regard to rail production, GM produces diesel locomotives and railcars at facilities located in LaGrange and Chicago, Ill.<sup>359</sup> These plants could be easily reorganized into independent rail manufacturing corporations.

Reorganization of GM's bus and rail facilities alone, however, cannot provide this country with the productive capacity and degree of competition requisite for a balanced system of transportation. As discussed earlier, GM has eliminated virtually all competing bus and train locomotive producers and, through joint lobbying activities and other means, has very likely restrained the growth of these and other nonautomotive methods of travel. Moreover, its own plants produce a relatively small number of bus and rail vehicles for domestic service. A third measure, Government encouragement of entry by new ground transport firms, is therefore recommended. This would involve, for example, the provision of guaranteed Government loans, tax incentives and other benefits to newcomers.

Absent GM's domination of bus and rail production and given a reduction in the automakers' antirail lobbying capabilities, these incentives should induce entry by new firms. The approximate number of additional companies needed to provide us with an adequate bus and rail building capacity may be roughly discerned by comparing the number of firms producing this transport hardware in the tech-

nologically advanced countries of West Germany, France, and Japan. Significantly, for purposes of comparison, the combined population of these three countries roughly equals that of the United States. Their systems of ground transportation, however, as discussed later in this study, are far superior to anything available in this country.<sup>360</sup> As indicated in table 3, these three nations contain more than 85 competing manufacturers of bus and rail vehicles, or more than 10 times as many as America.

TABLE 3

BUS AND RAIL INDUSTRIES: TOTAL NUMBER OF PRODUCERS<sup>1</sup> IN UNITED STATES AND WEST GERMANY-FRANCE-JAPAN<sup>2</sup>

	United States	West Germany-France-Japan
Buses: City and intercity; diesels and electric.....	3	26
Railcars: Streetcars, interurbans, subway, elevated, rapid transit, commuter railroad.....	3	23
Train locomotives: Diesels and electric.....	2	33
Totals.....	8	82

<sup>1</sup> Includes established manufacturers of production-line and revenue-service vehicles. Excludes firms solely engaged in the limited production of experimental or prototype equipment.

<sup>2</sup> Comparative indices (1972 population): United States, 203,000,000; West Germany-France-Japan (combined), 213,000,000.

As in the proposed reorganization of the automakers' motor vehicle facilities, management and employees as well as the riding public would be expected to benefit substantially from reorganization of GM's bus and rail plants into independent corporations. Management would not only be in control of their own plants, but they would also have the opportunity and incentive to experiment with more efficient production techniques and, perhaps, with innovations in motive power including steam turbine, electric and Freon engines which have been developed both here and abroad. In short, for the first time since the acquisition by GM of Yellow Coach and Electro-Motive more than 40 years ago, management would be free to promote the sale of transport vehicles without regard for the conflicting interests of a parent motor vehicle corporation. Likewise, employees should welcome the opportunity to work for a corporation whose growth and ability to innovate are unrestrained. Stockholders should also benefit through their holdings in an aggressive group of new transport companies.

Whether the automakers' nontransport facilities should also be reorganized is a question clearly beyond the scope of this study. It is recommended, therefore, that pending further investigation these facilities should continue to function as operating units of four multi-product enterprises. Thus, General Motors' household appliance (Frigidaire), aerospace, Earth-moving machinery (Terex), real estate, and other nonautomotive divisions would comprise one such enterprise; Ford's properties, including its household appliance and electronics division (Philco-Ford), and its steel, glass, and tractor production subsidiaries would constitute a second; Chrysler's glass, marine, air conditioning (Airtemp), real estate, and defense-space businesses a third; and American Motors' properties, including its computer services (AM Data Systems), car leasing (American Motors Leasing), and nonautomotive injected-molded plastics (Windsor Plastics) subsidiaries would comprise a fourth.

The proposed restructuring of the ground transport sector is based on a fundamental premise: the presence of many competing manufacturers of buses, trains, subway cars, and rapid transit vehicles as well as automobiles and trucks would help to achieve the genuinely balanced system we so desperately need. We need smaller, less-expensive cars powered by low-pollution, energy-efficient engines for use outside of central cities. We need technologically attractive bus and rapid rail equipment which can provide downtown commuters with viable alternatives to driving their own cars. We also need improved forms of rail freight delivery to reduce the number of noxious, fuel-guzzling diesel trucks on city streets. Restoring competition to those industries which produce our transportation hardware is an important prerequisite to meeting these several needs.

### *C. The Mechanics of Reorganization*

The actual mechanics of reorganization are relatively uncomplicated. Nevertheless, some of the more salient details are set forth in this section. As discussed earlier, the basic objectives are fundamentally two-fold in nature: first, to create independent and viable corporations for each physically distinct manufacturing, assembly, distribution, and financial unit currently owned by General Motors, Ford, Chrysler, and American Motors; and second, to separate foreign subsidiaries from control by these four corporations.

Before reviewing the mechanics involved in accomplishing these two objectives, some general observations should be made concerning concentrations of stock ownership and transitional planning. An effective reorganization plan must insure that the new corporations created are genuinely independent of the interests which controlled the original enterprises. Shares in the new corporations, therefore, should be distributed in such a way as to eliminate old, and preclude the emergence of new, concentrations of control in any individual or group.

In addition, it is anticipated that advance planning would minimize interference with the physical operation of plants during the transition from old to new organizational structures. Contractual arrangements with future suppliers and purchasers, reassignments of engineering, marketing and administrative personnel from central headquarters to decentralized assembly and component plants, and other transitional matters should be negotiated well in advance of the actual reorganization date. The tax and financial consequences of the recommended restructuring transactions, moreover, could be anticipated at an early stage and, through proper planning, could be used as incentives to encourage current management to contribute to the creation of independent and viable enterprises.

The creation of new corporations and severance of control over foreign subsidiaries would require seven contemporaneous transactions:<sup>361</sup> (1) Stock merger of all domestic subsidiaries into their four respective parents; (2) sale of assets of foreign subsidiaries to foreign owners of U.S. dollars; (3) proportionate assignment of all the assets and liabilities of the parents to the prospective new companies; (4) actual formation and capitalization of the new companies; (5) issuance and exchange of shares in the new companies for the assets and liabilities proportionately assigned them by the parents; (6) solicitation of parent shareholders to determine which new company (or companies) shares they wish to receive in exchange for their old parent

shares, and, to the extent possible, allocation of the new shares on the basis of shareholders' preferences, with any balance allocated by lottery; (7) complete liquidation of parents by an exchange of securities in which the shares of the new companies are exchanged for those of the old parent corporations.

Although these seven transactions might appear complex, they would amount in essence to the creation of a number of new, viable corporations to receive the current business of the four automakers. Some explanatory comments, however, are necessary. The stock merger of domestic subsidiaries into parents would result in only one set of equity securities outstanding covering each parent and its respective subsidiaries. This would facilitate the subsequent transactions: The solicitation of parent shareholders would permit the allocation of shares in the new companies to be based on the expressed preferences of shareholders. Some GM shareholders, for example, might prefer to have shares in one or more auto assembly companies; others might prefer stock participation in the new independent bus and rail corporations. To the extent that conflicts might arise in shareholder preferences, the allocation of new company shares could be determined by lottery. Provision could also be made for the tax-free exchange or sale by shareholders who are dissatisfied either with the lottery outcome or otherwise. In this fashion, shareholders might exchange their new company shares for those in companies formerly owned by any of the four automakers. A Chrysler shareholder, for example, would have the opportunity to negotiate a tax-free exchange of shares in properties formerly owned by Chrysler for those in properties formerly owned by Ford. Alternatively, shareholders would have the option of a tax-free sellout.

The sale of assets of foreign automotive subsidiaries to foreign owners of U.S. dollars, contained in transaction (2), would sever parent control over these foreign-based enterprises. It would also serve to remove a portion of the dollar overhang. In short, it would eliminate the economic disadvantages of multinationalization while contributing to international monetary stability.

Under current law, most of these transactions would be nontaxable. For example, the merger of domestic subsidiaries with the present parent companies, the transfer of assets by the parents in exchange for the stock of the new corporations, and the distribution of that stock to the present company stockholders in exchange for their old stock would all represent nontaxable transactions. Some transactions taxable under current law, however, could occur. To that extent, appropriate amendments to the Internal Revenue Code would be advisable.

Additional measures would be needed to insure the effectiveness of the reorganization. In particular, precautions would have to be taken to preclude officers, directors, and large shareholders of the new companies from attempting to reconstitute the prior anticompetitive structures. This might require, for example, that officers, directors, and large shareholders of the new companies, as well as the companies themselves, be prohibited from owning shares in any other ground transportation company. At the same time, tax and other financial incentives should be considered as a means of encouraging management, directors, and employees to dedicate their energies to the new companies. In this regard, profit-sharing, tax-delaying stock options,

deferred compensation, generous pension plans, and numerous other devices could be used effectively to link both executives and employees closely to the success of the reorganization.

Tax incentives, moreover, could be provided the new corporations to induce their modernization of production and their commitment to innovation. For the first purpose, special investment credits, accelerated depreciation, or additional first-year depreciation for plant and equipment acquired might be warranted. For the latter, special credits and amortization deductions could be granted automotive companies which engage in the development of low-emission propulsion systems. Similar incentives could be extended to nonauto ground transport firms which undertake research and development aimed at improving America's bus and rail systems.

#### *D. Some Considerations Regarding Feasibility*

Reorganization of these four ground transportation industries would appear to be feasible in light of their early structure and performance in this country, their comparative structure and performance abroad, and the subsequent experience of transport companies formerly owned by General Motors.

1. *Early Structure and Performance of the Ground Transportation Industries.*—Reorganization of these industries is feasible, first, because it would restore them to their naturally competitive states. The early automobile industry, for instance, comprised numerous firms which competed at every level of production: manufacturing, assembly, and distribution. Automobile producers were primarily assemblers of bodies and engines purchased from independent suppliers specializing in automotive parts production. Since producers had access to parts from external suppliers, they were not compelled to integrate upstream into components production.<sup>362</sup> Moreover, the availability of interchangeable replacement components obviated any need for integration downstream into extensive networks of franchised dealers with specialized repair and maintenance capabilities.<sup>363</sup> The industry's emphasis upon purchasing from external suppliers and distributing through external outlets generated two competitively beneficial effects: ease of entry and technological flexibility.

The absence of vertical integration greatly reduced the amount of initial investment required for entry and survival in the early auto industry.<sup>364</sup> The Ford Motor entry was typical. The company was incorporated in 1903 with only \$28,000 in cash (or about \$139,000 in 1973 dollars).<sup>365</sup> This ease of entry was reflected in the low level of industry concentration. In 1921, for example, 88 assemblers competed in the sale of 1.5 million passenger cars.<sup>366</sup> In 1972, by comparison, industry sales amounted to 9 million, or six times as many.<sup>367</sup> Restructuring this vastly enlarged industry into half the number of assembler-producers as existed in 1921, therefore, would not seem unreasonable.

The absence of vertical integration also provided early assemblers with a high degree of technological flexibility. The lack of enormous capital investments in components production allowed these firms virtual freedom to experiment with the alternative technological offerings of external body and engine manufacturers. As a result, the early auto industry was noted for its wide variety of fundamentally different motor vehicles. There were, for example, assemblers of electric and steam as well as gasoline-powered vehicles.<sup>368</sup> This technological com-

petition, in turn, greatly accelerated the pace of innovation, particularly with regard to alternative propulsion systems. In fact, the development of pollution-free electric cars had advanced during the 1920's to the point where the Federal Oil Conservation Board recommended in a 1928 report to the President that the economy and operating advantage of "the present type of storage-battery electric vehicle as compared with the gasoline car" warranted the substitution of electric for gasoline automobiles.<sup>369</sup> Likewise, as early as 1907, steam cars capable of speeds in excess of 190 miles per hour were available which would have met the 1975-76 clean air standards.<sup>370</sup>

Then, suddenly, the industry became collectively monopolized, and the development of alternative propulsion systems was halted. In the course of 3 years, from 1923 to 1926, 43 assemblers left the market.<sup>371</sup> By 1935, only 10 firms were producing automobiles.<sup>372</sup> Today, only four remain, with three highly integrated firms accounting for 97 percent of domestic production. General Motors, Ford, and Chrysler invested billions of dollars integrating upstream into the production of internal combustion engines.<sup>373</sup> Due to their complexity (15,000 moving parts) and high cost of replacement, it is probable that these engines contributed more to Big Three profits than would the simpler and relatively inexpensive electric or steam systems. In the process, these alternative forms of motive power vanished. To protect their substantial investments in internal combustion systems, therefore, it is suspected that the Big Three vigorously pursued the elimination of competing electric and steam car producers.<sup>374</sup> Nonetheless, GM, Ford, and Chrysler have continued cautiously to experiment with these displaced power sources (for example, the SE-101 steam and XEP-1A electric car by GM, gas turbine cars by Chrysler, and Ford's electric "commuta" car). But these projects have reportedly been undertaken primarily to enable the three automakers to claim "good faith" efforts before inquiring congressional bodies and to deter entry by prospective manufacturers of these alternative propulsion systems.<sup>375</sup>

In light of its earlier competitive structure and satisfactory performance, there is reason to believe that the industry could once again be reorganized as proposed. This would involve not a departure from precedent but a return to earlier competitive conditions. In fact, the current structure of this industry might best be perceived as a historical aberration. The trend toward concentration was the result not of natural economic forces, but rather of four artificial, concentration-increasing factors set in motion by the Big Three automakers: Acquisition of competitors, components integration, annual style change, and exclusive franchised distribution. A brief review of these factors should demonstrate that because it seeks no more than to restore competition to this industry, the reorganization proposed is well-founded.

The first concentration-increasing activity initiated by the Big Three automakers was the acquisition of competitors. At the outset, General Motors attempted to acquire all the major auto manufacturers, in the manner of Standard Oil, American Tobacco, and other great trusts of the period.<sup>376</sup> By the end of 1909, it controlled nine formerly independent automobile assemblers (including Buick, Cadillac, Oldsmobile, and Pontiac) and its board of directors had authorized the pur-

chase of a tenth, Ford.<sup>377</sup> Although Ford rejected its takeover bid, GM went on to acquire 12 more assemblers by 1920 and to make an unsuccessful bid for Dodge in 1925.<sup>378</sup> Meanwhile, Ford acquired Lincoln (1922), Chrysler acquired Chalmers (1923) and Dodge (1928), and Nash (which later merged with Hudson to form American Motors) purchased Lafayette (1922).<sup>379</sup> By 1928, these firms had acquired a total of 25 independent automobile assemblers.

The Big Three's integration upstream into components production constituted a second concentration-increasing activity. By the start of World War I, GM had acquired more than a dozen parts suppliers and Ford was busily constructing in-house components facilities. Later, Chrysler also began to purchase parts manufacturers.<sup>380</sup> By 1937, GM alone had acquired more than 40 independent producers of key automotive components.<sup>381</sup> In this fashion, the Big Three deprived unintegrated assemblers of the access to independent sources of body and engine components which was requisite for survival.

General Motors' introduction of annual style change in 1923, and the interdependent adoption of this practice subsequently by Ford and Chrysler, was a third artificial factor leading to increased concentration.<sup>382</sup> As a marketing weapon, annual style change severely disadvantaged smaller volume producers by encouraging them to integrate upstream while forcing them prematurely to scrap prohibitively expensive tools, dies and jigs. Specifically, an inevitable result of the Big Three drive to produce "all-new" cars annually was intensification of the industry trend toward components integration. The annual need to produce uniquely styled vehicles, including redesigned bodies and rearranged (although not necessarily improved) engines, encouraged producers to internalize an increasing proportion of body and engine production.<sup>383</sup> This shift from assembly of body and engine components to their integrated fabrication on an annually restyled basis, however, greatly increased the scale of production necessary for optimum efficiency.<sup>384</sup> Integrated production of annually redesigned vehicles at optimum efficiency required an annual volume of at least 250,000 units.<sup>385</sup> Operation below that volume resulted in higher average costs through the premature scrapping of expensive tools, dies and jigs which, although physically still useful, could not be used again for next year's restyled models. On the other hand, integrated operation at or above the 250,000-unit level of output required vast sums of capital. After the introduction of annual style change, therefore, entry and survival in this industry was barred to all but large, completely integrated enterprises.<sup>386</sup>

The Big Three's integration downstream into exclusive franchised distribution was a fourth factor responsible for industry concentration. Prior to 1925, there was little need for automakers to establish exclusive retail outlets. Independent retailers provided adequate sales and service for a wide variety of automobiles.<sup>387</sup> Since at least 1925, however, General Motors, Ford, and Chrysler pursued a tacit policy of prohibiting their respective dealers from handling automobiles manufactured by competing firms.<sup>388</sup> This "exclusive dealing" practice effectively foreclosed smaller assemblers from distributing their cars through thousands of previously independent dealers. In early 1933, for instance, Continental attempted to enter the automobile industry by distributing its cars through already established dealers. GM Sales

Committee Chairman Grant responded at once to the threat of new entry. On January 4, 1933, he ordered his sales representatives to block Continental's access to dealers: " \* \* \* Continental, which is attempting to get distribution through already established dealers, should not be permitted to get a foothold with General Motors dealers." <sup>389</sup> By the end of 1934, Continental was forced to withdraw from the industry. <sup>390</sup>

Moreover, the emergence of annual style change as an industry practice precluded small firms from sharing whatever independent dealers remained. Periodic restyling required differentiation of even the most minute components, which led in turn to a decline in interchangeable replacement parts. <sup>391</sup> As a consequence, automakers were required to establish nationwide dealer networks with specialized repair and maintenance capabilities, a project which small volume producers could ill afford to undertake.

By pursuing these four activities (acquisition of competitors, components integration, annual style change, and exclusive franchised distribution), the Big Three revolutionized the industry's structure. They transformed a naturally competitive industry of nearly 100 competing assemblers, thousands of parts suppliers, and tens of thousands of independent retail dealers into one dominated by three highly integrated monopoly sharing firms. They also closed the door to new competitors by raising the capital costs of entry tenfold. To enter and survive in the vertically integrated, style-changing industry of the 1970's, a prospective firm would need an estimated \$1 billion for the in-house production of specialized body and engine components, annual style changes, and a nationwide network of franchised dealers. <sup>392</sup> By contrast, had the Big Three not restructured the industry, a new firm could enter as an assembler at a cost of \$55 million, or less than one-fifteenth as much. <sup>393</sup>

Nevertheless, it has been urged that efficiency in automobile production can only be achieved by a highly concentrated, integrated industry. <sup>394</sup> It has been argued, for instance, that horizontal concentration of assembly operations in a few giant firms maximizes productive efficiency. <sup>395</sup> The preponderance of economic literature and the actual distribution of assembly facilities in the industry are to the contrary. Bain, for example, has concluded that an assembler achieves maximum efficiency within a production range of from 60,000 to 180,000 cars per year. <sup>396</sup> In their study of the British motor car industry, Maxcy and Silbertson found that scale efficiencies in assembly operations were exhausted at the 100,000 unit level; whereas Rhys has suggested that the figure might reach 200,000 units. <sup>397</sup> Reviewing German automobile production, Jurgensen and Berg stated that maximum efficiency in assembly could be realized at output levels of 25,000-50,000 units. <sup>398</sup> Significantly, these estimates of efficient production levels are no larger than the average-size American assembly plant, which in 1972 produced 200,000 cars. <sup>399</sup>

The actual distribution of American assembly operations also belies the purported need for horizontal concentration. The four automakers assemble cars not in 4 but in 44 geographically separate plants. Concentration, therefore, is limited to ownership and does not extend to production. If physically combining assembly plants enhanced efficiency, the four automakers most certainly would have combined them.

It would appear, therefore, that each of these 44 plants might be able to operate efficiently as an independent assembler of passenger cars.

Others have maintained that efficiency in automobile manufacturing requires vertical integration upstream into components and downstream into distribution.<sup>400</sup> The available literature and actual industry plant structures, however, contradict this argument. In his definitive studies of vertical integration in the American auto industry, Crandall concluded that integration was not required for optimal efficiency. More specifically, he stated that the presumed advantages of coordination and control often cited in support of integration could be realized as effectively through long-term contracts between assemblers and independent suppliers and distributors.<sup>401</sup> Moreover, at least one other student of the industry suggested that efficiency would have been enhanced had the automakers undergone "vertical disintegration" in the early 1930's.<sup>402</sup>

The actual distribution of parts manufacturing facilities in this industry also indicates that integration is, at best, unrelated to efficiency. The four automakers maintain physically separate establishments for assembly, body stamping, engine casting, transmission assembly, and myriad other parts production activities. If physical integration enhanced efficiency, the four automakers would have integrated plants as well as ownership. It is not unreasonable to propose, therefore, that these facilities, now separate in fact, could become separate in law without any loss in productive efficiency.

Likewise, the early American truck industry operated in a competitive environment. At one time, it comprised more than 100 producers which, like their counterparts in the auto industry, were primarily assemblers.<sup>403</sup> By means of acquisition, components integration, elimination of auto firms which also produced trucks, and other concentration-increasing activities, however, the Big Three automakers restructured this industry.<sup>404</sup> Today, 84 percent of total production is concentrated in the Big Three's truck divisions.<sup>405</sup> This study therefore recommends nothing more than restoring the industry's previously competitive environment.

The early bus and rail industries were also structured more competitively than today. They were not concentrated. At one time, there were more than 150 competing manufacturers of bus and rail vehicles.<sup>406</sup> In addition, they were not characterized by interindustry diversification. More specifically, neither industry was dominated by motor vehicle manufacturers.<sup>407</sup> It was during this earlier period that the development of technological alternatives flourished. There were builders, for example, of steam- and electric-powered buses, double-deck and articulated (multiple-unit) buses, electric streetcars and high-speed electric interurban trains.<sup>408</sup> The technological development of these vehicles, however, stopped suddenly in the 1930's. By this time, as carefully documented above, General Motors had diversified into bus and rail production and, with Ford, Chrysler, and other highway interests, had begun to lobby against rail transit. Since then the bus and rail industries have been largely untouched by technological progress.<sup>409</sup> By separating out GM's bus and rail facilities, reducing the auto makers' lobbying capacities, and encouraging entry by new ground transport firms, therefore, the proposed reorganization would attempt to recon-

struct the competitive conditions which generated an earlier and apparently more innovative era.

In sum, all four industries once functioned effectively within competitive structures similar in principle to those now advocated. Their departure from these structures was largely the result of concentration-increasing activities undertaken by the Big Three automakers. In light of available evidence, it may be strongly argued that the competitive reorganization of these industries would not impair productive efficiency and would very likely contribute to technological progress. This then is the first ground upon which a claim of feasibility is maintained.

*2. Structure, Conduct, and Performance of These Industries Abroad.*—It is feasible to reorganize America's ground transport industries into smaller, independent, less integrated units for a second reason: the more advanced transport industries of Europe and Japan are largely organized in this fashion. In terms of structure, they are generally less concentrated, less integrated, and, in an interindustry sense, less diversified than in the United States. In fact, several of the most innovative European and Japanese firms reflect some of the size and organizational characteristics recommended in this study for American transport firms. In terms of conduct and performance, moreover, many experts believe that these industries are superior to those operating in this country. A brief review of the structure, conduct, and performance of automobile, truck, bus, and rail industries abroad follows.

With the exception of the Big Three foreign subsidiaries, automobile manufacturing in most of Europe and Japan is characterized by lower levels of structural concentration and integration than in America. For example, in West Germany, France, and Japan, whose combined population and motor vehicle output approximate those of the United States, there are 20 competing producers of passenger cars.<sup>410</sup> Most of these producers are also considerably less integrated than General Motors, Ford, and Chrysler. They buy rather than make a large proportion of automobile parts.<sup>411</sup> This permits them to take advantage of the economies of volume realized by a parts supplier that produces interchangeable parts for the entire industry. A few, such as Germany's Porsche and Japan's Suzuki, operate primarily as assemblers, buying in all major body and engine components.<sup>412</sup> In addition, European and Japanese automakers generally distribute their products through nonexclusive independent outlets.<sup>413</sup>

The more competitively structured auto industries of Europe and Japan seem to behave and perform more satisfactorily than the American auto industry. Due to the larger number of firms, price, product and technological conduct are aggressively competitive. There is, for example, a noticeable absence of the interdependent or collusive pricing, product imitation, and suppression of technology which characterize the American Big Three. Instead, prices fluctuate in a more competitive manner, products vary remarkably in terms of both design and performance features, and advances in automotive technology are more rapidly introduced.<sup>414</sup>

This degree of competitive conduct, in turn, has resulted in a more satisfactory record of performance in terms of efficiency, progressiveness, and international competitiveness. European and Japanese manufacturers appear to have achieved high levels of efficiency through

their use of common, interchangeable components and their steadfast avoidance of the prohibitively expensive American practice of annual model changes.<sup>415</sup> Their progressiveness in several areas of public concern, particularly emission control and safety, has also become widely acknowledged. Japan's Toyo Kogyo (Mazda), Honda, Daihatsu, and Suzuki have all produced low-pollution cars which either meet or are expected to meet the 1975-76 U.S. emission standards.<sup>416</sup> Sweden's Volvo was the first to introduce safety belts, crash-absorption bumpers, interior crash padding, and collapsible steering columns as standard equipment.<sup>417</sup> Germany's Porsche has developed a "long life" car designed to last for 20 years.<sup>418</sup>

High levels of efficiency and progressiveness have also enhanced the international competitiveness of European and Japanese car industries. Both Germany and Sweden, for example, export more than half of the automobiles they produce.<sup>419</sup> Japan generally exports 20 percent of its passenger car production.<sup>420</sup> By contrast, due in large part to their extensive multinational operations, American automakers sell less than 1 percent of the cars they produce here abroad.<sup>421</sup>

Furthermore, major technological breakthroughs have been achieved by European and Japanese firms structured in a manner closely resembling that which is recommended by this study. The Wankel rotary engine, hailed by many as the most significant development in automotive propulsion since the invention of the internal combustion engine, was the product of two small, nonintegrated companies: NSU of Germany and Toyo Kogyo of Japan. When NSU first developed its rotary car in 1957, it was an unintegrated assembler producing 17,000 vehicles a year.<sup>422</sup> When Toyo Kogyo ("Mazda") began marketing an improved Wankel rotary car in 1967, the firm was primarily an assembler of only 129,000 vehicles annually.<sup>423</sup>

Likewise, Porsche's recent development of a long-life 20-year car built of materials which can later be recycled constitutes a significant breakthrough in automotive technology.<sup>424</sup> Yet, this firm is one of the world's most compact and least integrated automakers. In 1972, it produced slightly more than 14,000 cars from components nearly all of which were bought-in.<sup>425</sup> In other words, the proposed reorganization would create new auto-assembly companies which in terms of output (average of 220,000 units per annum) and absence of vertical integration would compare favorably with the most innovative producers operating abroad.

Although considerably smaller in annual output than the 220,000-unit level suggested as optimum, Porsche exemplifies the organizational model advocated by this study. It is primarily an assembler of bought-in components. It distributes its cars through a contractual arrangement with the Volkswagen distribution system.<sup>426</sup> Its only production facilities other than an assembly plant consist of a first-rate research and development center, a sheet metal pressing shop, and an administration building.<sup>427</sup> Its major production activity consists of engineering, inspecting, and assembling the parts it purchases.<sup>428</sup> As an assembler, it avoids the technological lock-in which accompanies vertical integration. "Integration," according to one high-placed Porsche executive, "is a barrier to cost reduction and technological development; it eliminates that competition among automotive parts suppliers which is essential for maximum efficiency and innovation."<sup>429</sup>

Porsche builds high-cost sport cars at a relatively low annual level of output. But the same structural advantages of deconcentration and nonintegration apply to the production of any other class of passenger car. The relevant variables are unit cost and level of output: the lower the unit cost, the higher the volume of output required to achieve economies of scale. For Porsche's high-cost sport cars, that volume would appear to be around 15,000 units a year. For lower cost passenger cars, the figure would probably reach the 220,000 annual unit level.<sup>430</sup> Higher outputs and/or vertical integration, however, cannot be justified in terms of efficiency or technological innovation. Why then have some European and Japanese firms recently increased their outputs through mergers and integrated vertically? One high-ranking Porsche executive suggested three possibilities: first, imitation of the American Big Three and their foreign subsidiaries ("if American firms are gigantic and fully integrated, then perhaps we should organize ourselves in this fashion . . ."); second, the failure to include a proper allowance for overhead costs in "make-buy" (vertical integration) decisions; and, third, the drive by management to increase their personal salaries and prestige through otherwise inexplicable corporate expansion.

Truck manufacturing in Europe and Japan is generally less concentrated and less integrated than in the United States. In West Germany, France, and Japan, for example, whose combined population and production of trucks approximate that of the United States, there are 19-competing producers, or nearly three times the number of American firms.<sup>431</sup> European and Japanese truckmakers also rely more heavily on external component suppliers and independent distributors.<sup>432</sup> This more competitive structure has generated an enviable record of performance. The Japanese, for example, were the first to develop the light utility vehicle; in fact, the Japanese firms of Isuzu and Toyo Kogyo produce GM's "LUV" and Ford's "Courier," respectively.<sup>433</sup> Toyo Kogyo is also marketing the world's first rotary-powered light trucks.<sup>434</sup> Meanwhile, Germany's Daimler-Benz, Messerschmitt, and Volkswagen have produced electric-powered trucks and vans.<sup>435</sup> The effectiveness of these less concentrated, less integrated industrial structures demonstrates in a general way the feasibility of the proposed reorganization of American truck manufacturing.

Ground transportation in Japan and most of Europe is far superior to anything available in the United States. This is due, at least in part, to the ability of their bus and rail industries to compete effectively with each other and with manufacturers of cars and trucks. Competition within the bus and rail industries is enhanced by the large number of firms involved. In West Germany, France, and Japan alone, there are 26 builders of buses, 23 producers of rail transit cars, and 33 manufacturers of locomotives.<sup>436</sup> By contrast, in America three firms assemble GM buses, only three firms still produce rail transit cars and two firms manufacture locomotives.<sup>437</sup> Competition between these industries and the motor vehicle industries is also vigorous due to the lower level of interindustry diversification and the more even distribution of political power. West Germany, France, and Japan, for example, are free of the American dilemma where a single automobile manufacturer dominates both bus and rail production. Although a few automakers such as Daimler-Benz, Toyota, and Nissan also produce buses, none of them accounts for more than 30

percent of these three countries' total bus output.<sup>438</sup> Likewise, Mitsubishi of Japan produces trains as well as automobiles, but it dominates neither industry.<sup>439</sup> The level of interindustry diversification in these countries, therefore, is sufficiently low so as to preclude automakers from restraining competition with nonautomotive forms of ground transportation.

There is also a more equal distribution of political power between auto manufacturers and competing transport interests in Europe and Japan. This is due in large part to the presence of competition in the auto industries and the absence of automaker domination of bus and rail production. The more balanced lobbying capacities of these divergent transport interests are reflected in the legislative determination regarding use of motor vehicle taxes. Unlike America, these countries are largely free of devices such as highway trust funds, which earmark moneys exclusively for highways and deprive rail systems of essential public funding. Instead, they levy motor vehicle taxes which are spent for both highways and rail systems. West Germany, for example, has a special gasoline and diesel fuel tax whose revenues are split 60 percent for highways and 40 percent for rail transit.<sup>440</sup> Roughly one-half of that country's total transportation budget, moreover, is allocated to rail systems.<sup>441</sup>

Largely as a consequence, Europe and Japan have achieved a more balanced system of ground transportation, particularly in urban areas. "All during the late 1940's, 1950's, and 1960's, while American transit systems have been allowed to decay," noted one transportation specialist, "European systems have been expanding and improving and preparing for the inevitable competition with private automobiles."<sup>442</sup> He added: "While American cities have been talking about balanced transportation, European cities have been achieving it by means of building new rapid transit lines and a network of modern highways."<sup>443</sup> No fewer than eight rapid rail systems are currently under construction in West Germany alone.<sup>444</sup>

The more competitively structured ground transport sectors of Europe and Japan perform appreciably better in terms of efficiency and progressiveness than their American counterpart. As compared with America, overall transport efficiency in West Germany, France, and Japan, for instance, is enhanced by a more balanced and workable allocation of passenger and freight traffic between highways and rails. In metropolitan areas such as Paris and Tokyo, where travel by auto is least efficient, technologically attractive bus and rail vehicles transport 80 and 90 percent, respectively, of the commuting work force.<sup>445</sup> By comparison, nonauto transportation accounts for but 50 percent of the journey to work in Metropolitan New York, and less than 15 percent in Metropolitan Los Angeles.<sup>446</sup> Likewise a larger proportion of European and Japanese freight moves by rail rather than by truck.<sup>447</sup> In short, due to their extensive use of energy-efficient, cost-saving rail systems, these foreign nations have achieved balanced systems of ground transportation far superior to anything available in the United States.

Performance is also a function of progressiveness, or the rate of technological innovation. Transport technology in Japan and most of Europe is flourishing; moreover, it is being applied. MAN and Daimler-Benz, for example, have developed noiseless, pollution-free electric

buses which are already on the streets of several German cities.<sup>448</sup> Likewise, Japanese and French producers, including Naniwa Koki and Société Sovel are producing modern electric-powered buses and trolley coaches.<sup>449</sup> Other European manufacturers build modern double-deckers and electric "flywheel" stored-energy buses.<sup>450</sup>

Rail technology in these countries is equally impressive. ANF-Frangeco, Brissoneau, and Altshom of France manufacture RTG and TGV turbine-powered intercity trains designed for speeds in excess of 150 miles per hour.<sup>451</sup> Five Japanese firms (Hitachi, Kawasaki, Kinki, Tokyu, and Nippon Sharyo Seizo) build the incredibly fast, quiet, and pollution-free electric "bullet trains" which operate without vibration on the Tokaido line at speeds of 125-150 miles per hour.<sup>452</sup> Germany's Krauss-Maffei and Messerschmitt-Bolkow-Blohm, acknowledged leaders in the development of high-speed trains powered by 250-350 miles per hour electric linear induction motors, will soon construct operational systems in Germany and Canada.<sup>453</sup> Linke-Hoffman-Busch and Düwag, also of Germany, are producing advanced light rail vehicles, and CIMT, Alsthom, M.T.E., and Brissoneau of France are building exceptionally well-engineered, rubber-tired cars for the Paris, Montreal, and Mexico City Metros.<sup>454</sup> There are, moreover, manufacturers abroad of a whole range of transportation alternatives including streetcars, trolley coaches, and interurban electric trains, which in this country were displaced years ago by General Motors.

As compared with the efficiency and performance of industrialized countries overseas, America is a second-rate Nation in ground transportation. The proposed reorganization would reverse that situation. It would restore competition to motor vehicle manufacturing; it would release the bus and rail industries from General Motors' domination; and it would reduce the Big Three's antirail lobbying capabilities. It would also encourage entry by new ground transport firms which, through the resulting competition, would contribute to the rebuilding of a technologically advanced and balanced system of transportation for this country. The comparative structure and performance of this sector in Japan and most of Europe demonstrates the feasibility of such a reorganization.

3. *Subsequent History of Companies Formerly Owned by General Motors.*—The financial success of companies formerly owned by General Motors provides a third measure of this proposal's feasibility. Reorganization is a natural and frequent occurrence among corporate enterprises. Accordingly, GM has disposed of a great number of companies which it once effectively controlled. With few exceptions, these companies have prospered subsequently. TWA, Eastern Airlines, Bendix, North American-Rockwell, and Hertz, for example, have all experienced spectacular growth since their separation from General Motors in 1936, 1938, 1948 (2), and 1953, respectively.<sup>455</sup> TWA has increased its operating revenues from a mere \$6.2 million in 1936 to \$1.1 billion in 1969; Eastern Airlines has grown from operating revenues of only \$3.8 million in 1938 to \$649 million in 1969; Bendix net sales have risen from \$162.4 million in 1948 to \$1.6 billion in 1971; North American-Rockwell has expanded from a sales volume of \$11.7 million in 1948 to \$2.2 billion in 1971; and Hertz has grown from gross vehicle revenues in 1953 of \$20.1 million to more than \$600 million last year.<sup>456</sup>

Executives, shareholders, and employees as well as consumers mutually benefited from the release of these companies from General Motors' control. The history of Hertz Rent-A-Car is illustrative. General Motors acquired Hertz in April 1925.<sup>457</sup> For the following 28 years, GM operated this company in a manner which frustrated the efforts of Hertz executives to expand operations, and, as a consequence, was contrary to the best interests of GM employees and shareholders as well as the consuming public. From 1925 until August 1953, GM imposed requirements on Hertz which virtually insured that the company would grow no more than 10-15 percent a year.<sup>458</sup> The requirements were basically twofold in nature: First, Hertz was instructed to borrow money only from GM, and was expressly prohibited from seeking any "outside" funds; second, the company was required to pay to GM an annual dividend payment out of retained earnings. By refusing to lend Hertz any funds and by gaging the required dividend payment to absorb all but a fixed portion of retained earnings, GM was able to limit Hertz' growth to 10-15 percent per annum.<sup>459</sup>

The motives underlying GM's limitation of Hertz' growth are not entirely clear. One explanation, however, seems at least plausible. During the period of GM ownership (1925-53), consumers leased cars and trucks as a less expensive alternative to buying them. In its 1958 annual report, for example, the Hertz Corp. stated that while GM owned Hertz, "the industry was patronized by non-car owners who rented for occasional local usage or vacation travel."<sup>460</sup> Conceivably, GM saw Hertz' growth as a threat to its more profitable sale of cars and trucks. The 1958 report went on to state that due principally to the growth of commercial airline operations, the industry emphasis after GM's ownership of Hertz "shifted in favor of a national market—the car-owning traveler who required an automobile at locations distant from his home."<sup>461</sup> There is reason to suspect, therefore, that GM restricted the growth of Hertz leasing concern in order to protect its sale of cars and trucks, and that in 1953 it disposed of the company because the motor vehicle rental industry no longer threatened motor vehicle sales.

The impact on executives, employees, stockholders, and consumers was considerable. GM's growth restrictions utterly frustrated the efforts of Hertz executives to expand the company's leasing business. As one former Hertz official remarked, "GM allowed us no freedom of action; Hertz was held back."<sup>462</sup> Restricted growth also resulted in restricted revenues, reduced employment, and diminished contributions to GM shareholders. In addition, Hertz' inability to expand meant that a great number of consumers were deprived of the benefits of leasing rather than owning motor vehicles.<sup>463</sup>

GM's sale of Hertz inured to the benefit of all concerned. A review of the company's growth before and after reorganization roughly demonstrates what happens to an enterprise when it becomes an independent entity. After 28 years of oppressive GM ownership, Hertz executives at last were in command of their own company. At once they began to match their marketing skills against their competition. Successfully obtaining a \$13 million line of credit, they set out to turn Hertz into an aggressive nationwide transportation enterprise.<sup>464</sup> The results were remarkable. During the last 5 years of GM ownership (1948-52), the company's annual revenue had increased from \$11

million to \$17.9 million, or by an average of only 13 percent a year. By contrast, 5 years of independent operation saw Hertz revenues soar from \$20.1 million in 1953 to \$78.9 million in 1957, or an average increase of about 58 percent a year.<sup>465</sup> Some of this growth could be attributed to acquisitions, but in large measure the company grew through internal expansion. In short, a dynamic group of previously frustrated executives had transformed a sluggish corporate stepchild of GM into a fast-growing independent concern.

An independent Hertz had a salutary effect on both employment and stock values. As it expanded nationwide, it employed more workers. The effect on stock values was also impressive. In 1958, the company reported that a holder of 100 shares since 1953 would have realized \$997 in cash dividends and a threefold appreciation in the book value of his original holdings.<sup>466</sup> Hertz had also benefited the consumer by increasing the number of cities served by car rental agencies. For the 5-year period from 1948 to 1952, GM-owned Hertz managed to augment the number of cities served by 3, from 27 to 30. By comparison, during the 5-year post-GM period of 1953-58, Hertz secured representation in 118 additional cities, or an increase from 30 to 148.<sup>467</sup>

The experience of Hertz and other companies following their separation from General Motors suggests that reorganizing GM, as well as Ford and Chrysler, into smaller, autonomous units would enable new companies to prosper in a competitive environment previously denied them. In particular, the possibility that GM may have suppressed Hertz in order to sell more motor vehicles underscores the critical need to liberate GM's bus and locomotive divisions, whose probable suppression more than likely has enhanced GM's sale of cars and trucks.

### *E. Implementation*

There are several conceivable methods of implementing this proposal. Executives of the auto companies, for instance, might themselves welcome the opportunity not only to revitalize their own industry but also to contribute to the public's interest in technologically advanced and balanced transportation. If the automakers failed to act voluntarily, the Department of Justice or Federal Trade Commission could sue under the antitrust laws to enforce the proposed reorganization of our ground transport industries. Alternatively, Congress might consider passage of legislation specifically designed to bring about a restructuring of this and other highly concentrated industrial sectors.

1. *The Prospects for Voluntary Reorganization.*—Voluntary reorganization by enlightened executives of the Big Three motor vehicle manufacturers is possible but, absent tremendous public and governmental pressures, highly unlikely. In 1956, for example, Assistant Attorney General Stanley N. Barnes suggested that General Motors ease the trend toward economic concentration by voluntarily divesting itself of some motor vehicle, bus, home appliance (Frigidaire), and finance (GMAC) operations. GS President Harlow H. Curtice termed the Antitrust Division chief's suggestion "nonsense."<sup>468</sup> Two years later, in 1958, American Motors President George Romney testified before the Senate Antitrust Subcommittee that the Big Three automobile companies should cooperate with the Government in formulating an industry dissolution plan which would restore competition to automobile manufacturing. He stated that reorganizing the Big Three into several new companies "would be in the interest of stockholders, ex-

ecutives, employees, dealers, customers, competitors, communities, States, and the Nation." He appealed directly to his industry colleagues: "If the men who have built the success of General Motors and Ford would really think it through \* \* \* what I am proposing is a means by which those who excel can continue their effort to excel without restraint."<sup>469</sup> GM President Curtice rejected Romney's suggestion, claiming instead that his company's dominant position in ground transport was "a healthy situation for the country and the industry in general."<sup>470</sup>

With but one significant exception, the automakers have demonstrated a steadfast resistance to voluntary reorganization. In 1967, the Department of Justice seriously contemplated a suit to break up General Motors' passenger car operations. The giant automaker's response reportedly was to draft a secret, detailed plan which would have divested it of Chevrolet assembly plants and supporting parts manufacturing facilities.<sup>471</sup> When Attorney General Donald A. Turner decided against the suit, however, GM shelved its divestiture proposal.<sup>472</sup> Since 1967, the automakers have taken affirmative steps to preclude any Government-imposed reorganization. By 1971, GM President Edward N. Cole confirmed that he had centralized and otherwise scrambled operations to "make it tougher for the Justice Department to break up the corporation."<sup>473</sup>

2. *The Failure of Antitrust Enforcement.*—The Department of Justice and the Federal Trade Commission share responsibility for enforcing this Nation's antitrust laws. At least with respect to the ground transportation sector, however, they have compiled a strikingly unimpressive record. Although they possess the legal authority to restructure the auto, bus, truck, and rail industries as proposed, they have failed to exercise it. This past paralysis of will, casts considerable doubt on their future ability to succeed.<sup>474</sup> The Department of Justice, for example, has filed a total of 13 cases to date against General Motors for alleged violations of the antitrust laws; the Federal Trade Commission has filed three. Nine of the cases brought by Justice and all of those filed by the FTC dealt with anticompetitive behavior rather than monopoly structure; they attacked only the symptoms of concentrated economic power without ever assaulting the existence of power itself. Thus, GM was forced to pay nominal fines for charging monopolistic prices on such products as ball bearings, clutch facings, and brake linings.<sup>475</sup> The shared monopoly structure which enabled GM to charge monopolistic prices on these and other automotive products, however, was never assailed. It is also doubtful that these fines affected GM's subsequent behavior. Given the absence of price competition in motor vehicles, fines imposed on General Motors were ultimately passed on to consumers in the form of higher-priced cars and trucks.

Of the four "structural" cases filed against General Motors by the Department of Justice, only two could be termed successful and neither of these involved GM's control of the auto, truck, bus, and rail manufacturing industries. In *Du Pont-GM*, the Supreme Court ordered Du Pont to divest itself of its 23 percent stock interest in General Motors.<sup>476</sup> In *Euclid*, a consent decree was entered requiring GM to sell its Euclid off-highway earthmoving equipment division to White Motor Co.<sup>477</sup>

Although the two remaining structural cases did involve ground transport, neither was prosecuted to a successful conclusion. On July 6, 1956, Attorney General Herbert Brownell, Jr., announced on national television the filing of a suit against GM for monopolization of the bus industry. At that time GM accounted for more than 85 percent of bus production. The Government's complaint charged that GM had used this monopoly power to drive scores of competitors from the market. For the succeeding 9 years, the case moved through a seemingly endless series of pretrial maneuvers. Finally, on November 30, 1965, just a few days before trial was to begin, Assistant Attorney General Donald Turner authorized acceptance of a consent decree which permitted General Motors to retain its bus monopoly.<sup>478</sup>

Likewise, structural suits brought against GM for monopolization of the locomotive industry were subsequently abandoned. On April 12, 1961, Attorney General Robert F. Kennedy announced that a Federal grand jury had indicted General Motors for monopolization of the locomotive industry. At that time GM accounted for 100 percent of passenger locomotives and 77 percent of all types of locomotives manufactured in the United States. The Government's complaint alleged that GM had used this monopoly power to eliminate its competitors. Two years later, on January 14, 1963, the Department followed with a civil antitrust action brought under section 2 of the Sherman Act and section 7 of the Clayton Act. After several years of protracted litigation, the Government abandoned both suits.<sup>479</sup> Since then, GM has successfully eliminated Alco Products, the country's first manufacturer of diesel-electric locomotives. By 1972, GM not only retained 100 percent of passenger locomotive production, but it also had increased its monopoly share of all types of locomotives manufactured from 77 to 83 percent.<sup>480</sup>

Significantly, not one of the many cases filed against the Big Three automakers dealt with the problem of shared monopoly in the automobile industry. In fact, the only monopoly case ever brought in this industry was filed against Checker Motors more than 25 years ago for its alleged monopolization of the taxicab market.<sup>481</sup>

The failure of both Justice and the FTC to reorganize our anti-competitively structured ground transport manufacturing sector would appear to proceed from two interrelated factors: Political paralysis and the inherently protracted nature of litigation under the existing antitrust laws. A brief review of the Justice Department's ill-fated attempt to reorganize General Motors is illustrative.

Beginning in the late 1940's, the Antitrust Division of the Department of Justice became sharply divided with respect to how General Motors might be competitively restructured. One group of staff attorneys advocated the filing of a comprehensive "big case" against GM which would seek to reorganize that corporation into more manageable and competitive parts. Another group favored bringing a series of "peripheral" cases which would seek to obtain piecemeal divestiture of selected GM facilities.<sup>482</sup>

Initially, promoters of the "big case" predominated. They sought to restructure General Motors through a two-stage process: First, separation of GM from outside control by Du Pont; and, second, dissolution of the corporation into its constituent elements. In 1949 they persuaded Attorney General Tom C. Clark to bring suit to divest Du

Pont of its 23 percent stock interest in the giant automaker. Subsequently, they began to prepare for the filing of an overall divestiture case against GM for monopolization of what they described as a "land transportation market," which included automobiles, trucks, buses, and locomotives.<sup>483</sup> In 1954, however, after an exhaustive trial, the District Court ruled against the Government in *Du Pont-GM* and dismissed the case.<sup>484</sup> The adverse decision was a serious setback to "big case" supporters. Three years later, in 1957, the Supreme Court would reverse and ultimately, in 1961, would order divestiture of Du Pont's stock holdings in General Motors. But in the meantime, the "big case" concept was shelved.

After the trial court's adverse ruling in *Du Pont-GM*, the Antitrust Division changed direction. It embarked upon a series of peripheral cases relating to General Motors' city and intercity bus manufacturing operations. At the time, many in the Division felt that the relatively large scope of *Du Pont-GM* may have contributed to the Government's defeat at trial. They urged, moreover, that the filing of less comprehensive cases might be more acceptable politically. In 1956 the Department of Justice sued GM for monopolization of the bus industry and requested divestiture of its bus production facilities.

*GM-Bus* was a failure. In the words of one former Justice official, it "was a failure before it started because there was no relief."<sup>485</sup> More specifically, General Motors had combined bus and truck manufacturing within the same facilities. Divestiture of GM bus production, therefore, would necessarily have entailed divestiture of GM truck production as well. For a judge ruling on a comprehensive ground transport case which included autos, buses, trucks, and rails, an order for divestiture of GM's combined bus/truck facilities may have been appropriate. But the judge in *GM-Bus* did not have that case before him. Rather he was confined to ruling exclusively on GM's bus operations. As a result, he lacked the power to order divestiture of GM's combined bus/truck facilities.

In short, the narrow scope of *GM-Bus* effectively precluded the achievement of adequate relief. As one veteran of *GM-Bus* subsequently observed, "it would have been much easier to dissolve General Motors as a corporation than to divest it of its bus business."<sup>486</sup> In 1965, after 9 years of protracted litigation, the Department disposed of the case by reluctantly accepting an innocuous consent decree, whose principal provisions were drafted, at least in part, by GM's antitrust attorneys.<sup>487</sup>

Three years after *GM-Bus* was filed, the Antitrust Division revived consideration of the "big case." In 1959 a large, comprehensive complaint was drafted with separate counts for each of General Motors' separate transport equipment divisions. That same year a Federal grand jury was convened in New York City to investigate GM's overall operations, including its involvement in the automobile, truck, bus, and rail equipment industries. Almost immediately, the investigation was halted. Amid what one former Department attorney described as "mysterious and unprecedented circumstances," the judge refused to allow the Government to subpoena any of GM's records.<sup>488</sup> Holding as "extravagant" the Government's request for certain policy documents, District Judge McGohey denied it access even to GM's corporate identification papers.<sup>489</sup> Eventually the Government was

able to subpoena some information relating principally to GM's locomotive operations.

This setback renewed the Antitrust Division's interest in bringing peripheral cases. Despite the unsatisfactory progress of *GM-Bus* and with the "full recognition," as one Justice attorney noted later, "that adequate relief would be difficult, if not impossible, to obtain," it brought the abortive *GM-Locomotive* cases described earlier. By 1967 both had been abandoned.

The Department never again seriously considered the multi-industry big case. Instead, its focus shifted to the automobile industry, and to the prospect of bringing yet another peripheral case against GM. This time, however, the Department rejected the possibility of securing any structural relief. Unlike its posture in the bus and locomotive cases, it sought to punish "bad" corporate practices. Accordingly, it disregarded repeated recommendations from high-level staff that the auto industry be restructured. In 1966, for example, Eugene J. Metzger assembled a massive 106-page complaint which recommended reorganization of General Motors into the dozens of automotive assembly and parts production facilities which it had previously acquired.<sup>490</sup> That same year, Breyer and Comanor recommended reorganizing GM into "two or three separate companies."<sup>491</sup> In 1968 a staff memorandum authored by Baker, Shepherd, and Hunter proposed a shared-monopoly case which would reorganize GM, Ford, and Chrysler into more manageable and competitive units. That same year, former Assistant Attorney General Donald A. Turner and Gordon Spivack separately recommended that the Department bring structural antitrust action at least against General Motors and Ford.<sup>492</sup> None of these proposals was ever acted upon.

Instead, the Department filed suits against the automobile industry which related to monopolistic symptoms rather than to the monopolistic structure which caused them. In 1969 it brought the *Smog* case, which sought to penalize the automakers for allegedly conspiring to retard the development of pollution control devices. In 1972 it sought in the *Fleet Lease* case to prevent them from allegedly conspiring to fix prices on motor vehicles sold to the car and truck lease market.<sup>493</sup> Both cases were directed at monopolistic conduct. Neither was aimed at the essential element underlying this industry's anticompetitive behavior and unsatisfactory performance: shared monopoly structure.

The Department of Justice as well as the Federal Trade Commission, therefore, have failed for more than three decades to restore competition to one of this Nation's most important economic sectors: ground transportation. To accommodate political pressures, they have avoided bringing the multi-industry suits necessary for adequate relief and have opted instead for protracted and ultimately ineffectual peripheral litigation. "They have only nibbled around the edges," observed one veteran Justice official, "bringing little piecemeal cases which consumed an enormous amount of time, which dragged on for years and years, and which ended up with a two-bit consent decree that really didn't mean anything."<sup>494</sup>

3. *The Potential for Congressional Action.*—The best chance for implementation of the proposed restructuring, therefore, may rest with Congress. By passing legislation specifically aimed at this problem, it could bypass the dual problems of political paralysis and protracted

litigation which have hampered antitrust enforcement in the past. In this regard, several high-level staff members in the Antitrust Division conceded recently that reorganization of highly concentrated industries would require new congressional action.<sup>495</sup>

In the past, however, Congress has failed to take any substantive action to restructure the highly concentrated ground transport industries. Instead, it has attempted to regulate their anticompetitive behavior and thereby to alter their unsatisfactory performance. In short, it has combined Government bureaucratic planning with private monopolistic decisionmaking to create the worst of all possible situations.

With respect to the auto industry, for example, Congress has sought to remedy unsatisfactory performance through pervasive Government control and participation. Dozens of Federal agencies have become involved in the actual design and production of automobiles and trucks. The epicenter of automotive activity, many would contend, has shifted from Detroit to Washington. Federal legislation already affects a wide range of auto and truck components including bumpers, braking systems, seatbelts, headlamps, emission control equipment, tires, ignition systems, doors, power windows, head restraints, accelerator mechanisms, steering columns, door locks, seats, windshields, wheels, and fuel tanks.<sup>496</sup> In addition, other Federal agencies are engaged in the development of advanced automotive engines.<sup>497</sup> Meanwhile, the monopoly structure responsible for the car and truck industries' unsatisfactory performance has been left intact.

Likewise, with regard to the bus and rail manufacturing industries, Congress has sought to regulate rather than to restructure. More specifically, it has authorized Federal agencies to participate in these industries to a degree which approaches nationalization. For instance, it has provided the Urban Mass Transportation Administration (UMTA) and Federal Railroad Administration (FRA) with more than one-half billion dollars to design, develop, and produce standardized buses, rail transit cars, and trains, which would become the industry standard for all federally financed equipment purchases.<sup>498</sup>

UMTA's Transbus project is illustrative of the Government's involvement in both bus and rail transportation. It has as its objective the formulation of a Federal bus design which "will be incorporated into an industry standard for future urban buses purchased under UMTA's capital grant program."<sup>499</sup> Eventually, Transbus will become the only bus available to the riding public. Since UMTA contemplates no change in the monopolistic structure of bus manufacturing, moreover, it is likely that GM will continue to dominate this field. In short, Transbus represents that unique blend of public and private monopoly which often presages the death of free enterprise and the onset of nationalization.

With respect to ground transport, therefore, the choices open to Congress are fundamentally two: competition or public ownership. The first requires new structural legislation to reorganize the auto, truck, bus, and rail industries. The second will naturally evolve in the absence of such legislation. If Congress prefers competition to monopoly, public or private, it will reverse its emphasis on regulation and take action to restructure these industries.

Structural reform, however, is only part of the solution. The long-term process of shifting our emphasis from highway to rail transport,

for example, will require a major effort on the part of industry and Government as well as the public. Reorganizing the Big Three motor vehicle manufacturers cannot by itself bring us balanced and efficient transportation; rather it is an essential first step in this direction.

The proposals outlined in this study are not lightly conceived. They are founded on the fundamental tenet of our system of free enterprise, competition; and they are designed to help restore what this country has lacked for years, balanced transportation. Their disregard could result in a development as abhorrent as it is otherwise imminent: Government ownership of the automobile, truck, bus, and rail manufacturing industries.<sup>500</sup>

## FOOTNOTES

<sup>1</sup>The most thorough treatments of the combined legal and economic implications of industrial competition are those of C. Kaysen & D. Turner, *Antitrust Policy: An Economic and Legal Analysis* 2d ed. (1965); F. Scherer, *Industrial Market Structure and Economic Performance* (1970); and J. Blair, *Economic Concentration: Structure, Behavior and Public Policy* (1972). That competition is the fundamental premise of our free enterprise economy was proclaimed early by the Supreme Court in *Standard Oil Co. v. United States*, 221 U.S. 1, 52 (1911); and more recently in *Northern Pacific Ry. v. United States*, 356 U.S. 1, 4-5 (1958): "the unrestrained interaction of competitive forces will yield the best allocation of our economic resources, the lowest prices, the highest quality and the greatest material progress \* \* \*".

<sup>2</sup>For a lucid analysis of the structure-conduct-performance analysis, see R. Caves, *American Industry: Structure, Conduct, Performance* (2d ed., 1967). A more exhaustive description of this analytic framework is provided in J. Bain, *Industrial Organization* (2d ed. 1968) especially chapter 1. For an application of this analysis to particular industries, see, e.g., W. Shepherd, *Market Power & Economic Welfare* (computers and automobiles) (1970); Snell, *The Automobile Oligopoly: Annual Style Change as an Unfair Method of Competition*, 4 *Antit. Law & Econ. Rev.* 67 (Fall 1970) and 4 *Antit. Law & Econ. Rev.* 55 (automobiles) (Winter 1970-71); and P. Costello, *The Tetracycline Conspiracy: Structure, Conduct and Performance in the Drug Industry*, 1 *Antit. Law & Econ. Rev.* 13 (drugs) (Summer 1968).

<sup>3</sup>The competitive significance of market concentration is said to lie in the fact that, as the number of firms decreases and the percentage of total industry sales held by each increases, the probability of their recognizing their "mutual interdependence," that is, starting to price like collective monopolists rather than independent competitors, begins to increase significantly beyond a critical point. C. Mueller, *The New Antitrust: A Structural Approach*, 2 *Antit. Law & Econ. Rev.* 87 (Winter 1967).

Moreover, vertical integration and barriers to entry can affect market concentration. By foreclosing supplies or services to nonintegrated firms, vertical integration can artificially increase minimum optimal plant scales and thereby heighten concentration. Sherer, *supra* note 1, at 85-87. Likewise, barriers to entry preserve market concentration by precluding the arrival of newcomers. The seminal work on entry barriers is that of J. Bain, *Barriers to New Competition* (1956) (hereinafter cited as *Barriers*).

Multinationalization may adversely affect the economic and political policies of a home country. By locating plants and transferring technology abroad, for example, multinational corporations may reduce domestic employment, contribute to balance of payments deficits, and undermine government foreign policy. See, e.g., U.S. Senate Committee on Finance, 93d Cong., 1st sess., *Report on Implications of Multinational Firms for World Trade and Investment and for U.S. Trade and Labor* (Comm. Print 1973); United Nations, *Multinational Corporations in World Development* (1973).

<sup>4</sup>As distinguished from structure and performance, "conduct" refers to actions taken by an individual firm to maximize its earnings. It involves two dimensions: (1) whether price, product or technological decisions are made independently or collusively (collusion in the economic sense, thereby including interdependent oligopoly behavior as well as conspiratorial agreement), and (2) the intent (e.g., predation) or effect (heightened interfirm rivalry or exclusion of competitors). Mueller, *supra* note 3, at 90.

<sup>5</sup>"Performance" refers to the appraisal of how much the economic results of an industry's conduct deviate from the best possible contribution it could make to achieving the general goals of a free market economic system, particularly efficiency in production and distribution, progressiveness in the development and application of technological innovation, and a favorable balance of international trade. See Caves, *supra* note 2, at 96-115, and O.E.C.D., *Technological Progress, Integration, International Competitiveness and Size*, Working Paper No. 9 of the Committee of Experts on Restrictive Business Practices 24-41 (January 1972). An industry's performance should also be evaluated with respect to whether it provides an environment conducive to our democratic political and social institutions. *Northern Pacific Ry. v. United States*, 356 U.S. 1, 4-5 (1958) and Shepherd, *supra* note 2, at 222.

<sup>6</sup>C. Mueller, *supra* note 3, at 91. "An industry which does not have a competitive structure will not have competitive behavior." *United States v. du Pont* (Cellophane), 351 U.S. 377, 426 (1956) (opinion of Chief Justice Earl Warren).

<sup>7</sup>See, e.g., Erickson, *The Economics of Price Fixing*, 2 *Antit. Law & Econ. Rev.* 94 (Spring 1969); Mueller, *supra* note 3, at 90-91; Weiss, *Average Concentration Ratios and Industrial Performance*, *J. of Indus. Econ.* (July 1963); Collins & Preston, *Concentration and Price Margins in Food Manufacturing Industries*, *J. of Indus. Econ.* 226 (July 1966); Stigler, *A Theory of Oligopoly*, 72 *J. Pol. Econ.* 44 (1964); Mann, *Seller Concentration, Barriers to Entry, and Rates of Return in Thirty Industries, 1950-1960*, *Rev. of Econ. & Stat.* 296-307 (August 1966) and W. Mueller, *Monopoly and the Inflation-Unemployment Problem*, 5 *Antit. Law & Econ. Rev.* 15 (Summer 1972). See generally

Machlup, Oligopoly and the Free Society, 1 *Antit. Law & Econ. Rev.* 11 (July-August 1967); Blair, supra note 1, Scherer, supra note 1, and Shepherd, supra note 2. A voluminous compilation of economic studies concerning the effect of high industry concentration on market competition and performance is contained in Hearings on Economic Concentration Before the Subcomm. on Antitrust and Monopoly of the Senate Comm. on the Judiciary, 89th Cong., 1st sess. (1965) (hereinafter cited as 1965 hearings).

<sup>8</sup> Kaysen & Turner, supra note 1, at 266-72; Blair, supra note 1, at 7, 12. See also C. Mueller, supra note 3, at 116-117. Other economists set the critical four-firm concentration ratio for dissolution purposes at 70 percent. Report of the White House Task Force on Antitrust Policy 12-15 (released May 21, 1969) (hereinafter cited as the Neal Report).

<sup>9</sup> Galbraith refers to this form of price and output behavior as "oligopolistic rationality." Hearing on Planning, Regulation and Competition in the New Industrial State, Before Subcomm. of the Select Comm. on Small Business, U.S. Senate, 90th Cong. 1st sess. 8 (1967). In ruling on mergers, the Supreme Court has acknowledged the problem of mutual interdependence in highly concentrated industries. It has noted that as industries become more highly oligopolistic " \* \* \* the greater is the likelihood that parallel policies of mutual advantage, not competition, will emerge." *United States v. Aluminum Co. of America*, 377 U.S. 271, 280 (1964).

<sup>10</sup> Kaysen & Turner, supra note 1, at 105; Mueller, supra note 3, at 114-16. "Dominant firms in stable, asymmetrical oligopolies now carry a presumption of technical inferiority." Shepherd, supra, note 2, at 247. With regard to the depressive effect of high concentration on international competitiveness, see the Neal Report, supra note 8 at 5.

<sup>11</sup> Mueller, supra note 3, at 115.

<sup>12</sup> See Blair, supra note 1, at 25-40.

See also, Scherer, supra note 2 at 69-70, 85-88 ("(r)esource allocation in a market framework is normally guided and directed by the price mechanism, but within the firm the job is done by the conscious decisions and commands of management."); and Caves, supra, note 2, at 51-52.

<sup>13</sup> Scherer, supra note 2, at 69-70.

<sup>14</sup> *Id.* See also Caves, supra note 2, at 50-52.

<sup>15</sup> Vertical integration has been defined as "the preemption of the price system by the firm". R. Crandall, *Vertical Integration in the U.S. Automobile Industry 9-10*, 69 (microfilmed doctoral dissertation) (1968). Vertical integration however, may result in inflated costs absent the discipline of the price mechanism. In Coase's word, " \* \* \* the costs of organizing certain transactions within the firm may be greater than carrying out the same transactions in the open market." Coase, *The Nature of the Firm*, in Stigler (ed.), *Readings in Price Theory* 336 (1952).

The tendency of vertical integration to inflate costs has been well-documented by Blair, supra note 1, at 34-39. This cost-inflation factor has been recognized in the literature for many years, see e.g. J. M. Clark, *The Economics of Overhead Costs* 136-140 (1923); J. Robinson, *The Economics of Imperfect Competition* 339-340 (1933). Oxenfeldt attributes this otherwise irrational practice to "very strong pressures" (which in most business firms (are) reinforced by tradition, folklore, and prejudices" 1965 Hearings, supra note 7, at 1584-88. Dixon suggests that failure to include a proper allowance for overhead costs has given many manufacturers the mistaken impression that it is cheaper to "make" in-house than to "buy" from independent suppliers. *Id.* at 1671-77. In this regard, see statement of Porsche executive at text accompanying note 431 *infra*.

<sup>16</sup> "(L)arge firms in a highly concentrated industry have a strong vested interest in existing technology and therefore act as a brake rather than an accelerator to technological progress. An essential reason for this is that the existing equipment is obsoleted by changeovers to new production methods." O.E.C.D., supra note 5, at 21. Likewise, a prominent economist has written: "The big firms in oligopoly industries devote a great deal of effort to suppressing new innovations that would require them to write off as losses their heavy investments in plants rendered obsolete by the inventions and innovations developed by the medium- and smaller-sized firms in their industries." (emphasis in original) C. Mueller, *Rapping the System: Reform or Revolution*, 3 *Antit. Law & Econ. Rev.* 15, 39, (Summer 1970). For some specific examples of suppression by concentrated industries, see Blair, supra note 1, at 229-236.

<sup>17</sup> See Caves, supra note 2, at 22-28. Established firms in persistently concentrated industries have accomplished this by erecting obstacles that impose on newcomers higher costs per unit than those encountered by firms already in the industry. Mueller, supra note 3, at 89 n.7.

<sup>18</sup> Thus, it has been suggested that where an industry's concentration ratio has been at 70 percent or more for 7 of the past 10 years, substantial barriers can be presumed. The Neal Report, supra note 8 at 5-7, 15.

<sup>19</sup> See generally Barriers, supra note 3. In his extensive survey of 20 American industries, Professor Bain found that entry was extremely unlikely where extensive vertical integration had increased minimum optimal scales appreciably (i.e. to 5 percent or more of national sales volume). *Id.* at 81. Tremendous promotional expenditures which compel newcomers to outspend established firms by an additional 5 percent or more of unit retail price in countervailing promotion represented a further impediment to new competition. *Id.* at 127. Moreover, when the initial capital required for entry into an industry at an efficient level of production and distribution exceeded \$100 million, entry was highly improbable. *Id.* at 158.

<sup>20</sup> Mueller, supra note 3, at 124. See Barriers, supra note 3, at 170.

<sup>21</sup> See testimony of Woodcock, in Hearings before the Subcomm. on International Trade of the Senate Comm. on Finance, *Multinational Corporations*, 93rd Cong. 1st Sess. (1973), at 281. (Hereinafter cited as 1973 Hearings.)

<sup>22</sup> See, e.g., R. Barber, *The American Corporation*, ch. 17-18 (1970).

<sup>23</sup> See generally, AFL-CIO study on multinationals, reprinted in 1973 Hearings, supra note 21, at 450-454.

<sup>24</sup> See e.g., Kaysen & Turner, supra, note 1, at 266-272; Blair, supra note 1, at 614-620; C. Mueller, supra note 16, at 25-28; S. Smith, *Antitrust and the Monopoly Problem*, 2 *Antit. Law & Econ. Rev.* 19, 20-21 (Summer 1969). With respect to the divestiture of foreign subsidiaries, see testimony of Woodcock in 1973 Hearings, supra note 21, at 283-284.

<sup>25</sup> This issue is often posed generally in terms of "substitute products" and "cross-elasticity of demand." See Scherer, supra note 1, at 213-16; *United States v. du Pont de Nemours & Co.* (cellophane) 351 U.S. 377, 393 (1956). The pioneering work in this area is that of E. Chamberlin, *The Theory of Monopolistic Competition* 67, 82-83 (1947).

With respect to beer can/beer bottle competition, see, e.g., *Beer Into Cans*, Fortune, January 1936, at 75-84, and text accompanying notes 33-39, infra.

<sup>26</sup> These and other examples of interindustry competition may be found in Scherer, supra note 1, at 214.

<sup>27</sup> General Motors, *The Automobile Industry: A Case Study of Competition*, 27 (Oct. 18, 1968). "Plenty of evidence of the competitive impact of automobiles on other industries is to be found in the competition of passenger cars and buses with railway passenger service and municipal streetcar systems, and in the battle of truck against rail transportation of freight." S. Whitney, *Antitrust Policies* 515 (1958).

<sup>28</sup> The competitive significance of multi-industry firms has received a great deal of attention in the literature on conglomerate concentration. See, e.g., Blair, supra note 1, at 41-59, and 1965 Hearings, supra note 7, particularly part 1. The instant memorandum, however, represents the first known application of the structure-conduct-performance analytic model to a multi-industry group. See, however, the discussion of concentration within industry groups in Blair, supra, note 1, at 12-18.

<sup>29</sup> Generally, diversification implies the movement by firms into new and different product lines. Scherer, supra note 1, at 67-69. "Interindustry diversification" is used here to describe the movement by firms into competing products which are produced by different industries and which are used for similar purposes. See also M. Gort, *Diversification and Integration in American Industry*, 8-9 (1962).

<sup>30</sup> "Asymmetry" has been used to describe the extent to which leading firms in a concentrated industry are larger and more powerful than rival firms. Shepherd, supra, note 2, at 40, 120-122. Here the term is employed to denote an imbalance in the economic resources available to competing industries for anticompetitive political activities, particularly lobbying.

<sup>31</sup> The tendency for diversification (structure) to generate the economic suppression of rivals (conduct) and in turn the elimination of competing alternatives (performance) is explored, for example, in a recent essay on diversification and intermodal ownership by surface transportation companies. D. Pegrum, *Restructuring the Transport System*, 74-77, in E. Williams, Jr., *The Future of American Transportation* (1971). See also, text accompanying notes 40-43 infra.

<sup>32</sup> See generally, Caves, supra note 2, 96-115; Shepherd, supra note 2, 181-222.

<sup>33</sup> *United States v. Continental Can*, 378 U.S. 441 (1964).

<sup>34</sup> The Government's contention in the U.S. District Court is reported at 217 F. Supp. 761, 785 (1963).

<sup>35</sup> See *Beer Into Cans*, Fortune, January 1936, 75-84.

<sup>36</sup> Id. at 75.

<sup>37</sup> See e.g., text accompanying note 25, supra. "Glass containers have distinct physical characteristics . . . unlike many cans (they) can be easily resealed after they have been opened . . . (and they) are suitable for re-use by bottlers and are returned by consumers to the bottler for such re-use." 217 F. Supp., 761, 772 (1963).

<sup>38</sup> 378 U.S. 441, 463 (1964).

<sup>39</sup> Id. at 465 (1964).

<sup>40</sup> For an excellent discussion of these intermodal ownership provisions, see P. Locklin, *Economies of Transportation* 860-868 (7th ed. 1972).

<sup>41</sup> *Rock Island Transit Co.—Purchase—White Line Motor Freight Co., Inc.*, 40 MCC 457, 461 (1946).

<sup>42</sup> Locklin, supra note 40 at 862.

<sup>43</sup> *Lake Line Applications under the Panama Canal Act*, 33 ICC 700 (1915); Locklin, supra note 40, at 863.

<sup>44</sup> For a discussion of this metaphor, see M. Mintz and J. Cohen, *America, Inc.*, 2, 6 (1971). The translation of concentrated economic power into political influence is brilliantly described in R. Engler, *The Politics of Oil: A Study of Private Power and Democratic Institutions* (1961). See also, Hearings before the Subcom. on Antitrust and Monopoly of the Senate Comm. on the Judiciary on the Economic, Social and Political Effects of Economic Concentration, 92nd Cong. 2d Sess. (1972). The use of concentrated economic power for political objectives has been most recently displayed in ITT's attempts during 1970-1971 to overthrow the Allende government in Chile. For a detailed account, see Hearings before the Senate Subcommittee on Multinational Corporations of the Committee on Foreign Relations, on the International Telephone and Telegraph Company and Chile, 1970-71, 93rd Congress, 1st Session, Part 1 & 2 (1973); and A. Sampson, *The Sovereign State of ITT*, Ch. 11 (1973). The resort to political warfare as a substitute for price and technological competition is evident, for example, in the political efforts of the television broadcasting industry to block the development of cable television.

<sup>45</sup> This is an established tenet of modern economics. E.g., "Price is a parameter to the competitive seller—it is determined by market forces, and not subject to the individual seller's conscious control." Scherer, supra note 1, at 9.

<sup>46</sup> The exercise of "overwhelming influence upon a legislature or government official to induce a government-created restraint of trade . . . might effectively vitiate the impact of competing lobbies and thereby distort the operation of the political process. . . ." Note, *Application of the Sherman Act to Attempts to Influence Government Action*, 81 Harv. L. Rev. 847, 857 (1968).

<sup>47</sup> In this regard, consult Engler, supra note 44.

<sup>48</sup> "The American automobile industry . . . is the most prominent tight oligopoly in the United States—probably in the world—and its behavior fits many of the predictions for such an asymmetrical tight oligopoly." Shepherd, supra note 2, at 232. See also, Bain, supra note 2, at 137-38, 285-287, 346-347.

<sup>49</sup> *Automotive News* (1973 Almanac Issue), at 48. The market shares by producers for 1972 were as follows: General Motors—54.10%, Ford—27.20%, Chrysler—15.48%, American Motors—3.16%. Although generally considered a producer of taxicabs rather than private passenger cars, Checker Motors accounted for the 0.06% remainder of 1972 domestic production.

<sup>50</sup> See note 8 supra.

<sup>61</sup> See, e.g., Shepherd, supra note 2, at 39-40.

<sup>62</sup> L. White, *The Automobile Industry Since 1945*, 82 (1971); Crandall, *Vertical Integration and the Market for Repair Parts in the United States Automobile Industry*, 16 *J. Indus. Econ.* 212 (July 1968). For a breakdown of these firms' assembly and parts production facilities, see figure 1, infra.

<sup>63</sup> See B. Pashigian, *The Distribution of Automobiles: An Economic Analysis of the Franchise System*, 122 (1961). Boyle, *Restructuring the Automobile Industry: "Exclusive Dealing" as an Unfair Method of Competition Under the FTC Act*, 5 *Antitrust Law & Economics Review* 30 (Fall 1971).

<sup>64</sup> L. Weiss, *Economics and the American Industry*, 375 (1966). Bain concludes that obstacles to entry into the industry are "insuperable." Industrial Organization, supra note 2, at 287. Economists Schupack and Carroll describe the wall surrounding the automobile industry as "insurmountable" and "impregnable," respectively. Hearings before Subcomm. of the Senate Select Comm. on Small Business on Planning, Regulation, and Competition in the American Industry, 90th Cong. 2d Sess. 907, 920 n. 6 (1968) (hereinafter cited as 1968 Hearings.).

<sup>65</sup> Minimum optimal plant scales for a vertically integrated production complex require that, merely to survive, a firm must capture from 4 to 8 percent or more of total sales. These percentages were derived from Bain's minimum integrated scale economy estimates of 300,000-600,000 unit production per year, as applied to 1972 industry production of 8.8 million. Industrial Organization, supra note 2, at 286. *Automotive News* (1973 Almanac Issue), at 48. For an important observation related to the fact that these estimates assume vertical integration, see Scherer, supra note 1, at 85-86. This integrated scale economy disadvantage was found by Bain to be one of the most formidable of its kind in American industry. See note 19 supra. Promotional losses, resulting particularly from price concessions necessary to maintain a solvent national dealer system, would likely average at least 5 percent of factory price over the first 5 to 10 years. Industrial Organization, supra note 2, at 285-286. This represents the severest of promotional disadvantages revealed in Bain's studies. See note 19 supra. The absolute minimum amount of capital required for efficient production and distribution on a fully integrated basis has been estimated at \$779 million, or more than 7 times larger than the amount considered by Bain as making entry highly improbable. See note 19 supra. Others place the capital requirements for entry at from \$1 to \$2 billion. See, e.g., Romney's estimate in Senate Subcomm. on Antitrust and Monopoly, 85th Cong., 2d Sess., Report: *Study of Administered Prices in the Automobile Industry*, 16 n. 23 (Comm. Print, 1958) (hereinafter cited as 1958 Report); testimony of Arkus Duntov in Hearings on the Role of Giant Corporations before the Subcomm. on Monopoly of the Senate Select Comm. on Small Business, 91st Cong., 1st Sess. 406 (1969) (hereinafter cited as 1969 Hearings.).

<sup>66</sup> Vatter, *The closure of entry in the American automobile industry*, 4 *Oxford Economic Papers* 213 (1952). In other words, entry has been limited to the marketing of imported vehicles. As yet, no foreign producer has entered at the production stage. See Volvo's announcement that it will establish an assembly plant at Chesapeake, Va. *Wall Street Journal*, Sept. 14, 1973 at 9.

<sup>67</sup> During the Nixon administration the automobile industry has been favored with extensive White House intervention against imported cars. *Wall Street* auto analyst David Haly has termed the 1971-72 new economic policy of that administration "the auto industry relief act." More specifically, in August 1971 President Nixon sought and obtained from Congress a 10 percent surcharge on imports which he conceded was primarily designed to aid the auto industry by discouraging imports. *Newsweek*, Dec. 6, 1971 at 87. A few months later the administration began pressuring the Japanese Government to impose voluntary quotas on their export of passenger cars to the United States. *Wall Street Journal*, Oct. 22, 1971 at 4. One year later, Japan imposed export controls on motor vehicles. *Wall Street Journal*, Nov. 27, 1972 at 5. Largely as a result of these actions, the percentage of the U.S. market captured by imports declined in 1972 for the first time in a decade. Ward's 1973 *Automotive Yearbook* 31. GM chief executives Gerstenberg and Cole acknowledged that due to President Nixon's intervention 1972 had broken all sales and profits records: "The inroads of foreign manufacturers in the American automobile market have been checked, and new car and truck sales in 1972 are estimated to be at record levels for both General Motors and the industry." *Wall Street Journal*, July 31, 1972, at 4.

<sup>68</sup> See note 141 infra.

<sup>69</sup> World automobile production amounted to 28 million in 1972. Ward's 1973 *Automotive Yearbook* at 85. GM, Ford and Chrysler, and their respective multinational subsidiaries, produced a total of 14 million cars that year. Annual reports 1972: GM, Ford, Chrysler. The Big Three accounted for 93.43 percent of Canadian car production. *Automotive News* (1973 Almanac issue) at 52. In Australia, the Big Three produced 93.49 percent of all automobiles. *Automobile International*, the World Automotive Market 1972, at 3. GM and Ford subsidiaries alone account for the largest share of German production (38.4 percent); and GM-Opel has captured the largest share of sales (exceeding those of Volkswagen). The (London) *Financial Times*, April 26, 1973 at 18. In Britain, the Big Three subsidiaries shared 52.3 percent of 1972 sales.

<sup>70</sup> Annual reports 1972: GM and Ford.

<sup>71</sup> See note 139 infra; the accelerated trend to multinational expansion is noted, for example, in GM's annual report for 1972, at 25.

<sup>72</sup> Shepherd, supra note 2, at 234-243.

<sup>73</sup> Testimony of Thurman Arnold in hearings before the Subcommittee on Antitrust and Monopoly of the Senate Committee on the Judiciary on Automobile Financing—S. 838, 86th Congress, 1st Session (1959), at 263.

<sup>74</sup> The term "administered prices" is generally interpreted to mean that leading firms in concentrated industries possess discretion over the prices they will choose. For a detailed exposition of this view, see Means' testimony in Hearings before the Senate Subcommittee on Antitrust and Monopoly, Committee on the Judiciary, on Administered Prices: Opening phase—economists' views, 77-84, 85th Cong. 1st Sess. (1957). Administered prices are particularly prevalent in the automobile industry. Shepherd, supra note 2, at 237-238. General Motors, the effective price leader in the automobile industry, has not always been the first to announce. "In seeking to create the impression of an intensely competitive industry, General Motors sometimes considers it expedient for the initial announcement to be made by one of its rivals." Blair, supra note 1, at 502. If the

announcements by Ford or Chrysler fall below or exceed GM's target return formula. GM's subsequent announcement will prompt revisions in the earlier stated prices of Ford and Chrysler. Id. GM reportedly sets prices in order to achieve a target rate of return on investment of roughly 20 percent. Id., at 471. For a detailed account of price leadership in this industry, see 1958 report, supra note 55, at 65-76. Some economists suggest that the pricing pattern is in fact the result of collusion among the Big Three automobile companies. See, for example, Boyle & Hogarty, Pricing behavior in the American automobile industry, 1957-71, unpublished manuscript (1972).

<sup>65</sup> *United States v. General Motors Corp., et al.*, Cr. No. 47-140 (E.D. Mich.). See especially, the "summit meetings" reported in the bill of particulars filed by the government on January 2, 1973, at 133-136. For a summary of the 270-page bill of particulars, see Wall Street Journal Jan. 18, 1973, at 4.

<sup>66</sup> *Federal Trade Commission v. General Motors Corp.* (unnumbered docket) (February 1968).

<sup>67</sup> See, for example, Industrial Organization, supra note 2, 240-242, 423-25; Mueller, Sources of Monopoly Power: A Phenomenon Called "Product Differentiation," 2 Antitrust Law and Economic revision 59, 90-91 (summer 1969).

<sup>68</sup> New York Times, May 14, 1971 at 55.

<sup>69</sup> Ammunition (a monthly bulletin of the UAW-CIO research and engineering department), "A motor car named desire," January 1949, 24-30. The Big Three originally planned to build small cars for domestic consumption. "Light autos, originally planned for the U.S., will make their debut abroad. Ford is putting one out in France. Australia's upcoming Holden, the first native-built car, will have many of the features of the cheaper Chevrolet which was at one time destined for the home market. General Motors-Holden is a GM subsidiary." Wall Street Journal, Oct. 7, 1948, at 1.

<sup>70</sup> The Society of Automotive Engineers conducted a study of car drivers in 16 typical American cities to determine if Americans wanted a small light car. Six out of 10 responded that they believed the car manufacturers should produce such a vehicle. Ammunition, Jan. 1949 at 24.

<sup>71</sup> Weinberg, U.S. Economic Policies and Labor, (a paper prepared for the German-American Forum) 4 (May 2, 1972). With respect to the Big Three disregard of import competition, one economist has observed: "In view of the greater profitability of the higher-price lines, a monopolist should rationally focus its production and sales effort on them, even if it entailed some loss of sales in the lower-price lines. This is what the leading firms, and particularly General Motors, have indeed done until the turnaround announced for 1970. In effect, Ford and Chrysler have jointly chosen during much of the 1960's (as they did in the mid-1950's) not to break the shared-monopoly ranks through innovation into the low-price markets. Instead, with General Motors, they largely abandoned it to imports." Shepherd, supra note 2, at 240.

<sup>72</sup> Industrial Organization, supra note 2, at 425.

<sup>73</sup> Fortune, September 1973, at 264.

<sup>74</sup> As one student of this industry has pointed out:

"The leading firms took a common attitude discouraging the introduction of safety features for many years. And when compulsory action became likely, in recent years, they attempted to establish a common industry group to develop, impose and control standards." Shepherd, supra note 2, at 241-242. In 1959, Volvo of Sweden was the first company to install seat belts as standard equipment. By the time the U.S. Congress started hearings on auto safety in 1965, Volvo already offered collapsible steering columns, interior crash padding, burst-proof door latches, and energy-absorbing front and rear bumpers. Business Week, Sept. 21, 1968, 140, 142. For a discussion of disc brakes, radial ply tires and other safety features first introduced on foreign automobiles, see testimony of R. Millet in Hearings before the Senate Subcommittee on Antitrust and Monopoly of the Committee on the Judiciary, Automotive Repair Industry, 91st Cong. 1st sess. part 2 at 862 (1969).

<sup>75</sup> Between 1900 and 1915 some 100 manufacturers put electric cars on the market. Blair, supra note 1, at 134. Manufacturers of steam cars were also prevalent at that time. 1969 hearings, supra note 55, at 345-347.

<sup>76</sup> F. M. Jones of Ann Arbor, Mich., received a U.S. patent for a stratified-charge engine on November 15, 1927. U.S. Patent Office, Patent No. 1,649,700 (application filed April 23, 1924).

<sup>77</sup> See testimony of Arkus-Duntov in 1969 hearings, supra note 55, at 401-406; Blair, supra note 1, at 140-144; Fortune, "A Car That May Reshape the Industry's Future," July 1972, 74, 76-78.

<sup>78</sup> "A big manufacturing complex is committed to existing facilities and products \* \* \* Changeovers to new products, which obsolete existing equipment, which is carried on the books at considerable value, is a very major undertaking, and not likely to occur without strong competitive reasons. If you add to this the additional problem of distribution and servicing of a radically new product, the reluctance and resistance against it becomes indeed comprehensible." Testimony of Arkus-Duntov in 1965 Hearings, supra note 7, at 2780-2781. This technological inertia on the part of the Big Three automakers has been recognized by others. "Ever since the drive for a nonpolluting and safer car began, the great, gleaming laboratories of the big automakers have rolled out a succession of developments, new type engines, and experimental electric cars, all of them seeming to prove only that nothing can soon replace the present, polluting internal-combustion engine—which may be just what the companies wanted to prove." Fortune, "Why the U.S. Lags in Technology," April 1972, at 149.

<sup>79</sup> See, e.g., the Government's civil complaint in 1969 charging the Big Three with collusive suppression of automotive emission control development. *United States v. Automobile Mfrs. Ass'n, Inc., et al.* (D. Cal. Jan. 10, 1969). A criminal complaint proposed by the Department of Justice and based on evidence presented to a Federal grand jury which reviewed the alleged conspiracy is reprinted in the Congressional Record for May 18, 1971, at H4063-H4074. Subsequently, the Department of Justice decided to proceed solely with a civil case, which was ultimately settled in a consent decree entered on Oct. 29, 1969.

<sup>80</sup> To date, States and municipalities have sued the automakers for conspiring to retard the development of emission control devices. In *re Multidistrict Vehicle Air Pollution* cases, M.D.L. No. 31, Central District of California.

<sup>81</sup> Eight-cylinder engines were first introduced in 1914; automatic transmissions in 1939; and power brakes in 1933. 1965 Hearings, supra note 7, at 1123-1124.

<sup>82</sup> See "Highlights of the Past 50 Years," Automotive Industries, Mar. 15, 1968, 4 ff.; 1965 Hearings, supra note 7, at 1123-24.

<sup>83</sup> White, supra note 52, at 212-213.

<sup>84</sup> Finley, "Editor's Forum," Automotive News, Oct. 27, 1969, at 3, 74.

<sup>85</sup> See Shepherd, supra note 2, at 240-243.

<sup>86</sup> Mueller, supra note 3, at 87-92.

<sup>87</sup> A confidential study undertaken by the Federal Trade Commission's Bureau of Economics in 1972 estimated that the monopoly overcharge on motor vehicles (cars and trucks combined) amounted to 9.1 percent of the total value of shipments, or \$2,487 billion in 1971. Multiplying the FTC-adjusted monopoly margin for autos (9.1 percent) by the value of automobile shipments in 1972 (\$22,896,000) yields an estimated monopoly overcharge of \$2.1 billion. This figure, when divided by the total number of U.S. passenger cars shipped in 1972 (8,823,938), amounts to more than \$230 per car. The FTC estimates of monopoly margin for the motor vehicle industry are reported at 5 Antit. Law & Econ. Rev. 33 (spring 1972). The value and number of 1972 automobile shipments are contained in Automotive News 2 (1973 Almanac issue). According to FTC staff economists, moreover, the estimate "grossly understates the real monopoly overcharges \* \* \* The real figures will undoubtedly be some substantial multiple of the ones we have in our report; what we don't know is the size of the multiple." 5 Antit. Law & Econ. Rev. 26 (spring 1972). One student of the industry has estimated that the total wealth impact (i.e. redistribution of income from nine million auto purchasers to several hundred thousand significant shareholders) may amount to as much as \$4 to \$8 billion. Shepherd, supra note 2, at 242.

<sup>88</sup> FTC studies suggest that consumers pay monopoly overcharges amounting to at least \$1.4 billion annually to the automotive parts industry, which is dominated by the Big Three automakers. Hearings before the Special Subcommittee on Small Business and the Robinson-Patman Act, Select Committee on Small Business, U.S. House of Representatives, on Small Business and the Robinson-Patman Act, 91st Cong., 2d sess. 725-727 (1970). That dealers are effectively leveraged into using their respective manufacturers' replacement parts through implicit threats of retribution (e.g. withdrawal of financing, late delivery of new models, or termination of franchise) has been demonstrated in Crandall, supra note 15, at ch. 6. As a result, dealers purchase more than 80 percent of their parts from the Big Three. *Id.* The Big Three's monopoly overcharge on parts may be computed in a second manner. Currently, these three firms account for roughly 49 percent of all automotive parts shipments. Crandall, supra note 52, at 228. The value of 1971 auto parts shipments amounted to \$16.3 billion. Bureau of the Census, Annual Survey of Manufactures, 33 (1971). The Big Three automakers, therefore, accounted for \$8 billion worth of parts sales in 1971. Sales by the Big Three of replacement parts are at least twice as profitable as sales of finished motor vehicles. Crandall, supra note 52, at 226-229. A monopoly margin of about 18 percent would thus seem reasonable in light of the FTC estimates for monopoly profit margins in motor vehicle sales. See note 87, supra. By these calculations, the Big Three's monopoly overcharge on \$8 billion worth of parts sales could amount to as much as \$1.44 billion.

<sup>89</sup> The costs of model changes are closely reflected by the Big Three automakers' amortization of special tools and equipment. See Blair, supra note 1, at 337-338; and testimony of auto executives as summarized in 1958 Report, supra note 55, at 121-124. In 1972 this figure amounted to \$1.53 billion. Annual Reports 1972: General Motors, Ford, and Chrysler. Given domestic sales in 1972 of approximately 9 million units, this would average out to \$170 per car.

<sup>90</sup> The BLS reported a net performance increase in 1969 automobiles of \$1 which included, however, a \$4 expenditure to meet higher Federal safety standards. Nonmandated performance changes, therefore, amounted to \$3. U.S. Department of Labor, Preliminary Report on Prices of Passenger Cars, USDL-9994 (Oct. 7, 1969). BLS performance data, computed for every model year since 1968, moreover, indicated that the 1969 results were not exceptional. The value of nonmandated performance improvements in 1968 through 1972 models averaged \$8.25 per automobile each year, or less than 5 percent of the Big Three's total model change expenditures during that period. See Snell, supra note 2, at 577 n.45 (average adjusted for 1972 BLS performance figures).

<sup>91</sup> Turner has framed the cost savings loss argument in the following manner: The major producers evolved a policy of annual model changes that, by accelerating the scrapping of expensive machine tools and dies, substantially increased the cost of automobiles. Since all of the major producers pursued this policy, and since the products of small producers were for a variety of reasons unappealing to most consumers, buyers were never given a choice between purchasing the same model as last year's at a lower price and a new model at a higher price. Conglomerate Mergers and Section 7 of the Clayton Act, 78 Harv. L. Rev. 1313, 1335 (1965).

<sup>92</sup> These figures were derived as follows: 1972 passenger car consumption at 70 billion gallons, with average mpg of 13.7 for 954 million miles travelled. Motor Vehicle Manufacturers Association, Motor Truck Facts 1973, at 36. Assuming a national average pretax pump price of \$.30 per gallon, this would amount to \$21 billion. The average mpg for GM's Vega and Ford's Pinto is 24. EPA, Gas Mileage Guide for Car Buyers (1973). Thus,

$$\frac{3}{4} \left( 70 \text{ bil. gal.} - \frac{954 \text{ bil. mi.}}{24 \text{ mpg}} \right) = 22.3 \text{ bil. gal.} \times \$ .30 = \$ 6.69 \text{ bil.}$$

<sup>93</sup> Industrial Organization, supra note 2, at 419-421.

<sup>94</sup> The United States faces the prospect of serious petroleum shortages over the next few decades. Office of Emergency Preparedness, The Potential for Energy Conservation 1-2 (Oct. 1972). The balance of payments implications of this situation alone are staggering. Assuming the availability of foreign oil supplies, the oil imports projected for 1985 will cost the United States nearly \$15 billion. Sansom, The Automobile as a Social Machine, 4 (EPA paper delivered at the International Automotive Engineering Congress, Jan. 10, 1973). Motor vehicle pollution damage estimate reported in W. Owen, The Accessible City 46 (1972).

<sup>95</sup> See, e.g., statement of Orr in joint hearings before the Senate Committee on Commerce and the Subcommittee on Air and Water Pollution of the Senate Committee on Public Works on the Automobile Steam Engine and Other External Combustion Engines,

90th Cong., 2nd sess. 63 (1968); Federal Power Commission, "Development of Electrically Powered Vehicles in joint hearings before the Senate Committee on Commerce and the Subcommittee on Air and Water Pollution of the Senate Committee on Public Works, on Electric Vehicles and Other Alternatives to the Internal Combustion Engine," 90th Cong., 1st sess., 29 (1967). A law-emission Freon-Rankine engine can also be mass produced for from \$20 to \$25. Its relative simplicity (only two moving parts) would result in low maintenance costs. Minto, in Hearing before the Panel on Environmental Science and Technology of the Subcommittee on Air and Water Pollution of the Senate Committee on Public Works, 92nd Cong., 2nd sess., 64-72 (1972).

<sup>96</sup> Testimony of Luntz in 1969 Hearings, supra note 55, at 468-70.

<sup>97</sup> Insurance Information Institute, Insurance Facts—1972 edition, at 48. Senator Nelson cites the automobile industry for its failure to use energy-absorbing bumpers and crash bars in their products, 1969 Hearings, supra note 55, at 542. Several years ago the U.S. Steel Corporation developed an automobile body with complete perimeter crash protection including steel roll bars front and rear. N.Y. Times, Oct. 12, 1970, at 37.

<sup>98</sup> The Big Three's combined current investments in upstream integration (i.e. engine and body components) probably amount to considerably more than \$6 billion. This figure assumes that roughly one-half of the current book value of the Big Three's manufacturing facilities (i.e. real estate, plants and equipment minus accumulated depreciation and obsolescence) is devoted to engine and body production. See 1965 Hearings, supra note 7, at 18. As of December 31, 1972, the book value of these assets was reported by the companies at \$12.4 billion. Annual Reports 1972: General Motors, Ford, Chrysler. Thus, one-half this amount would equal \$6.2 billion.

<sup>99</sup> Generally, see testimony of Arkus-Duntov in 1969 Hearings, supra note 55, at 402-03. More specifically, if the chrome over galvanized steel treatment discussed in the text were utilized, for example, automobiles would physically deteriorate less than half as rapidly. Presumably, industry sales would therefore fall as the demand for replacements declined. The failure of this industry to adopt measures such as these which would improve the durability of its products, coupled with its promotion of psychological deterioration through annual style changes, has led many economists to charge the Big Three with "planned obsolescence." See, e.g., Lanzillotti, "The Automobile Industry" in W. Adams, The Structure of American Industry, 344-45; Dowd in 1969 Hearings, supra note 55, at 524. Moreover, it has been suggested that the Big Three are reluctant to introduce steam or electric vehicles because the number of parts required for these propulsion systems is far less than those needed for conventional gasoline engines. Since these firms derive a substantial amount of profit from "aftermarket" (i.e., replacement parts) sales, they are unwilling to produce pollution-free vehicles which have a significantly smaller aftermarket. J. Esposito, Vanishing Air 35 (1970); Arkus-Duntov, in 1969 Hearings, supra note 55, at 402-406. "The electric car, with its simpler propulsion system, would last longer and the replacement market would decrease." Netschert, The Economic Impact of Electric Vehicles, Bulletin of the Atomic Scientists, May 1970, at 33. There is perhaps another reason for this reluctance. It has been suggested that were the Big Three to produce electric vehicles, for example, industry barriers to entry would decline due to lower production costs and minimum scale economies. Ayres, J. Hearings—Steam, supra note 95, at 8.

<sup>100</sup> See note 99 supra.

<sup>101</sup> The combined expenditures for annual restyling by the Big Three during the period 1967-71 amounted to \$7.1 billion. See Annual Reports for 1967-71: General Motors, Ford and Chrysler. The combined emission control expenditures by the Big Three during this same period amounted to \$832.6 million, or 11.8 percent of annual restyling expenditures. Environmental Protection Agency staff report derived from section 3 of Applications for Suspension of 1975 Motor Vehicle Exhaust Environmental Standards by Ford, General Motors and Chrysler (1973).

<sup>102</sup> Honda's stratified-charge engine already meets the Clean Air Act's 1975 standard and "bids fair" to meet the tough 1976 NOX standard. By the mid-1980's it would add only \$7.5 billion a year to the consumers' bill, compared to the dual catalysts' \$23.5 billion. National Academy of Sciences, Report by the Committee on Motor Vehicle Emissions (Letter of Transmittal, at 4) (1973); see also editorial, Wall St. Journal, May 21, 1973, at 14. The automakers also contend that catalytic introduction will jeopardize business stability: "If GM is forced to introduce catalytic converter systems across the board on 1975 models," Ernest S. Starkman, GM vice president for environmental activities, said in May of 1973, "the prospect of business catastrophe and massive difficulties with these vehicles in the hands of the public must be faced." Transcript of EPA Hearings, Statement for General Motors Corp. by Ernest S. Starkman, March 12, 1973, at p. 29. See also Washington Post editorial "Auto Makers and Business Catastrophes," May 16, 1973, at p. A-18.

<sup>103</sup> EPA internal memorandum of Stanley M. Greenfield, dated May 9, 1973.

<sup>104</sup> Environmental Protection Agency, Automobile Emission Control: The State of the Art, February 1973, at 2-6; Innovative Cars, September 1973, at 2. See also Business Week, February 24, 1973, at 70.

<sup>105</sup> See note 7 supra.

<sup>106</sup> Washington Post, May 16, 1973, at p. A-18.

<sup>107</sup> *Id.*; see also testimony of Woodcock in 1973 Hearings, supra note 21, at 281.

<sup>108</sup> The U.S. trade deficit amounted to \$6.9 billion in 1972. U.S. Department of Commerce, Survey of Current Business, Dec. 1972. In 1972, the Big Three produced 11 million motor vehicles in the United States with a domestic labor force of 900,000 employees. This represents a productivity ratio of roughly 1 man for each 12 cars produced. Imported motor vehicles amounted to 1,759,000 in 1972. If these cars had been produced here, they would have generated a minimum of 100,000 jobs in motor vehicle production alone (1,759,000 divided by 12=146,583). See also Fenster, "Detroit Goes Multinational", The Nation 326-329 (March 12, 1973). In addition, for every job in the motor vehicle manufacturing industry more than 16 others are generated in allied industries. Motor Vehicle Manufacturers Association, 1973 Automobile Facts & Figures (1973). The U.S. balance of payments (current and long-term capital) deficit equaled \$9.8 billion in 1972. Imported motor vehicles amounted to \$7.9 billion. U.S. Dept. of Commerce, Survey of Current Business, July 1973, at S-3, S-23.

<sup>109</sup> Fortune, Sept. 1973, at 264.

<sup>110</sup> The largest proportion of the automakers' advertising dollar is spent for TV advertising. National Automobile Dealers Association, Franchised New Car & Truck Dealer Facts 17 (1973). Most of this is devoted to the promotion of large cars. From January to June 1972, for example, the Big Three spent \$50,278,800 on TV ads. Only \$4,960,200, or about 9.9 percent of this amount, was spent on advertising Big Three compacts (GM-Vega, Ford-Pinto, Chrysler-Colt/Cricket); GM allocated a mere 5.2 percent of its TV auto budget for the Vega. National Advertising Investments (Jan-June 1972). By comparison, from January to June 1973 the Big Three again spent 9.9 percent of their network TV auto budget on advertising their compact cars (a total of \$5,489,000 out of \$55,368,700). GM increased its allocation for the Vega from 5.2 percent to 9.8 percent of its TV auto budget, while Chrysler's advertising budget for compacts decreased because it stopped advertising the Cricket. *Id.* (Jan.-June 1973).

<sup>111</sup> Washington Post, December 4, 1973 at A6.

<sup>112</sup> Automotive News, October 15, 1973 at 3. See also, 1973 Hearings, *supra*, note 21, at 451.

<sup>113</sup> This position is less dramatically repeated in General Motors' prewar annual reports. <sup>114</sup> A. Sloan, My Years With General Motors 325-327 (1973); Automotive Industries, March 30, 1929, at 510-11, 516.

<sup>115</sup> GM operated assembly plants in Berlin, Russelsheim and Brandenburg, Germany; other installations were located at Aachen, Breslau, Dusseldorf and Magdeburg, Germany; Vienna, Austria; Antwerp, Belgium; Warsaw, Poland; Riga, Latvia; Shanghai, China; and Osaka, Japan. U.S. Foreign Claims Settlement Commission, in the Matter of the Claim of General Motors Corporation and General Motors Overseas Corporation, claim No. W-10619, Decision No. W-21487 (May 10, 1967). Ford operated plants, for example, in Cologne, Berlin, Derschlag, Friedrichstadt and Dummlinghauser, Germany; Antwerp, Belgium; Vienna, Austria; and Budapest, Hungary. U.S. Foreign Claims Settlement in the Matter of the Claim of Commission, Ford Motor Company, claim No. W-17536 (1967) United States Strategic Bombing Survey, Ford Plant—Antwerp 4-5 (Feb. 1945); U.S. Department of Justice, Economic Warfare Section, Report on Ford Motor (Reszveny Tarsasag)—Hungary 4-6 (May 18, 1943). Chrysler operated facilities in Antwerp, Belgium. Report of the American Consulate General, Antwerp, Belgium to the U.S. Secretary of State, Washington, D.C. entitled Protection of the Interests of the General Motors, Chrysler, and Ford Companies in Antwerp (dated June 5, 1940).

<sup>116</sup> For a detailed description of General Motors' Nazi warplane production, see U.S. Strategic Bombing Survey, Munitions Division, Motor Vehicles and Tanks Plant Report: Adam Opel—Russelsheim, Germany 1-26 and exhibits D-1, E-1 through E-4 (18 August 1945; Confidential; declassified June 22, 1973) (hereinafter cited as Strategic Bombing I). By 1943, GM's Russelsheim plant was producing 9,030 JU 88 propulsion systems annually. *Id.* at exhibit E-1. Between October 1944 and May of 1945, when Germany surrendered, GM manufactured 954 ME-262 jets for the Luftwaffe. *Id.* at exhibit E-4. For an excellent discussion of GM's American warplane production, see Sloan, *supra*, note 114 at 377-386, Strategic Bombing I and other World War II intelligence reports cited hereinafter have only recently been available to the American public. The general declassification and release of World War II military documents was authorized in 1972 by Executive Order No. 11652.

<sup>117</sup> The investment reported by Ford Dearborn (U.S.A.) in Ford-Werke A.G. (Germany), as of 1944, amounted to \$8,385,442. Chrysler reported no investments in Germany. By comparison, GM Detroit (U.S.A.) reported an investment of \$52,002,562 in Adam Opel A.G. (Germany). U.S. Foreign Economic Administration, Business Holdings in Germany of U.S. Firms (October 1944).

<sup>118</sup> In 1935, GM constructed a major truck facility in Brandenburg, which was 200 miles from the main plant in Russelsheim. According to intelligence reports, this was in accord with government efforts to "move important truck facilities to the less vulnerable sections of central Europe . . . in anticipation of war." U.S. Strategic Bombing Survey, Munitions Division: German Motor Vehicles Industry Report 6 (3 November 1945) (hereinafter cited as Strategic Bombing II).

<sup>119</sup> PM New York Daily, August 9, 1940 at 9.

<sup>120</sup> U.S. Strategic Bombing Survey, Ford Motor Company A.G.—Cologne 4-5 (October 1944).

<sup>121</sup> M. Wilkins & F. E. Hill, American Business Abroad: Ford on Six Continents 1964, at 382; PM New York Daily, August 9, 1940 at 9.

<sup>122</sup> Strategic Bombing I, *supra* note 116 at exhibit D-1.

<sup>123</sup> *Id.* at 4.

<sup>124</sup> R. Wagner and H. Nowarra, German Combat Planes 298 (1971).

<sup>125</sup> Strategic Bombing I, *supra* note 116, at 4.

<sup>126</sup> Wagner and Nowarra, *supra* note 124, at 370. Production on Germany's first ME-262 jets was scheduled to begin at GM's Russelsheim plant with 200 units in August 1944; however, actual deliveries were not made until October. "The revised schedule was 10 units in September increasing to 1,000 units in December, indicating the critical need of the Luftwaffe for this unit." Strategic Bombing I, *supra* note 116, at exhibit E-3. The ME-262 first entered operational service during the autumn of 1944. See also J. R. Smith and A. Kay, German Aircraft of the Second World War 531 (1972).

<sup>127</sup> Wagner and Nowarra, *supra* note 124, at 373.

<sup>128</sup> America's first operational jet-propelled combat aircraft, the Lockheed P80a, was not produced until after World War II. See, e.g. Jane's All the World's Aircraft 204c, 205c, 271c, 272c (1945-46 ed.).

<sup>129</sup> Strategic Bombing II, *supra* note 118, at 13-14. In 1943, for example, Ford's Cologne plant produced 59.9 percent of the Wehrmacht's 3-ton halftracks; GM's Brandenburg facilities accounted for an additional 26.6 percent. GM's contribution in terms of military trucks consisted of an "annual war-time production of 25,000-30,000 Opel Blitz 3-ton trucks manufactured at Brandenburg. This represented some 35 to 40 percent of German truck production." Strategic Bombing I, *supra* note 116, at 3. By 1943 GM and Ford accounted for 71.4 percent of medium and heavy truck production. Strategic Bombing II, *supra* note 118, at 14, 19, and exhibit B. Ford's principal truck plant in Germany was located at Cologne. It operated plants in several other Axis-controlled territories, however, including Hungary, Rumania, Poland, and Austria. Strategic Bombing II, *supra* note 118, at 14.

<sup>130</sup> For a complete record of GM's investment in the erection of tetraethyl plants for Nazi Germany, see Hearings before the Senate Committee on Agriculture and Forestry on Industrial Alcohol and Synthetic Rubber, 77th Cong. 2nd Sess. (1942) pt. 4, at 1198-99. See also Engler, supra note 44, at 102-104.

<sup>131</sup> *Id.*

<sup>132</sup> Hearings before a Subcomm. of the Senate Comm. on Military Affairs on the Elimination of German Resources for War, 79th Cong. 2d Sess. (1946), pt. 10, especially at 1305-06.

<sup>133</sup> *Id.*

<sup>134</sup> Germany declared war on the United States on December 11, 1941. Eleven months later, on November 25, 1942, Dr. Carl Luer was appointed as Russelsheim's administrator. See note 135, infra.

<sup>135</sup> General Motors has owned 100 percent of Adam Opel A.G. continuously since 1929. Accordingly, it selected the Board of Directors and appointed the management which supervised wartime operations of all Opel plants, including the aircraft production facility at Russelsheim. Alfred P. Sloan, Jr., Board Chairman of GM-USA, and GM vice presidents, James D. Mooney, John T. Smith, and Graeme K. Howard, served on the GM-Opel Board of Directors throughout the war. "Foreign Economic Administration, Business Holdings in Germany of United States Firms," 3-4 (Oct. 1944). GM continued to operate its Opel plants after the United States had formally declared war on Germany without any apparent interference by the German government up until Nov. 25, 1942. At that time Prof. Dr. Carl Luer was appointed as an administrator of the Russelsheim warplane plant. The Darmstadt Provincial Court of Appeal stressed in its appointment of Luer, however, that "the authority of the board of directors shall not be affected by this administrative decision \* \* \*". Resolution, Handling of Enemy Property: Adam Opel A.G. Company in Russelsheim a. Main (transmitted by the Darmstadt Provincial Court of Appeal to the Reich Commissioner for the Handling of Enemy Property, Berlin W.8, on Nov. 25, 1942). In fact, the only noticeable wartime change in plant operations was the departure of American personnel. The GM-appointed directors and management remained. "The management during the war remained essentially the same as prewar, with the exception of American personnel." Strategic Bombing I, supra note 116, at 7. Nevertheless, GM sought and obtained a \$35 million tax write-off in 1942 from the U.S. Treasury Department. Sloan, supra note 114, at 331.

Communications as well as materiel continually flowed between GM plants in Allied countries and GM plants in Axis-controlled areas, presumably in direct violation of trading with the enemy legislation. Telegram, U.S. Secretary of State, Washington, to American Legation, Bern (Switzerland) Doc. No. 508163, (sent) July 7, 1943, 2 p.m. A review of the Opel-Russelsheim financial records also reveals that this plant was dealing with GM companies in Axis and Allied countries all over the world including General Motors Japan (Osaka), General Motors Continental (Antwerp), General Motors China (Shanghai and Hongkong), General Motors Uruguay (Montevideo), General Motors do Brazil (Sao Paulo), General Motors Overseas Corp., (Detroit). Adam Opel Aktiengesellschaft-Russelsheim Am Main. Jahresbericht Und Bilanz Fur Das . . . Geschäftsjahr 1944.

<sup>136</sup> U.S. Foreign Claims Settlement Commission, (GM claim) supra note 115.

<sup>137</sup> U.S. Foreign Claims Settlement Commission (Ford claim) supra note 115.

<sup>138</sup> See note 59 supra.

<sup>139</sup> In 1972, foreign investment by the Big Three amounted to an estimated \$4 billion. Fenster, supra note 108, at 28.

<sup>140</sup> See note 59 supra.

<sup>141</sup> Motor Vehicle Manufacturers Association, Motor Vehicle Manufacturing and Assembly Plants of U.S. Manufacturers in Foreign Countries, excluding Canada (1971; updated to 1973). General Motors intends to construct a \$40 million auto assembly plant in Saudi Arabia. Wall St. Journal, Sept. 19, 1973, at 2. It is negotiating with the Soviet Union for construction in Siberia of a \$2 billion truck plant, which would be the largest such facility in the world. Wall St. Journal, Sept. 24, 1973, at 10; Automotive News, Oct. 1, 1973 at 8. In Oct. 1973, GM confirmed that it had been holding preliminary discussions with officials of the East German government regarding the possible establishment of automotive production facilities there. It confirmed as well that it had been negotiating with the Soviet Union for construction of a massive truck plant in Siberia. CCH, 247 Common Market Reports No. 223 (Oct. 11, 1973) at 5. In 1970, when U.S. forces were fighting in Indochina, Secretary of Defense Melvin Laird strongly objected to Ford's proposed construction of truck facilities in the U.S.S.R. More specifically, he stated that he did not want Ford-built trucks to be used by communist forces in Vietnam. As a result, Ford withdrew its proposal. Automotive News, Oct. 1, 1973, at 38.

<sup>142</sup> Motor Vehicle Manufacturers Association, supra note 141.

<sup>143</sup> Given the employee productivity ratio of one man for every 12 cars developed in note 108 supra, 5 million automobiles would generate 400,000 jobs in automobile manufacturing; these in turn would create an additional 6 million jobs in allied industries. Assuming the 16 jobs are created in allied industries for each new job in automobile manufacturing (see note 108 supra), we might expect overall domestic employment to rise by an additional 6 million. Moreover, Big Three foreign subsidiaries realized more than \$12 billion in their production and sale abroad of 5 million vehicles. Annual reports 1972: General Motors, Ford, and Chrysler. Had these vehicles been built here, and exported for sale abroad at competitive prices, they would have generated billions of dollars in motor vehicle and automotive parts exports.

<sup>144</sup> With the exception of the Big Three truck divisions, only International Harvester and AMC enjoy market shares in excess of 1 percent. In 1972, their market shares in terms of total industry production amounted to 8.6 and 4.4 percent, respectively. Truckmakers accounting for less than 1 percent of total production in 1972 include: Mack (0.90 percent), White (0.90 percent), and Diamond Reo (0.20 percent). Ward's 1973 Automotive Yearbook 127.

<sup>145</sup> 1972 market shares for the Big Three: General Motors (Chevrolet and GMC)—39.0 percent, Ford—32.2 percent, Chrysler (Dodge)—13.2 percent. *Id.*

<sup>146</sup> See note 8 supra.

<sup>147</sup> Industry data provided by confidential sources (1973).

<sup>148</sup> As of January 1, 1973 only 1,196 out of a total of 22,265 truck dealers sold products from more than one manufacturer. Automotive News (1973 Almanac Issue) 62.

<sup>149</sup> More than 96 percent of all truck diesel engines are produced by four firms: General Motors (Detroit Diesel)—37.2 percent, Cummins—33.9 percent, Mack—14.8 percent, and Caterpillar—10.5 percent. In 1971 Ford accounted for 0.1 percent of diesel truck engines; in 1972 it ceased production. Ward's 1973 Automotive Yearbook 119.

<sup>150</sup> See generally, Whitney, supra note 27, at 470-471.

<sup>151</sup> Automotive News (1973 Almanac issue) 26-27; Ward's 1973 Automotive Yearbook 213-224. It should be noted, however, that in May of 1971 White sold its Diamond Reo division, which should now be considered a separate truck manufacturer. Id. at 215. In addition, Mercedes-Benz has exported a small number of light duty (pickup and delivery) midrange diesel trucks to the United States market. Automotive News, Aug. 6, 1973 at 4, 33.

<sup>152</sup> The same pattern of price followership characteristic of auto price announcements occurs with respect to new truck price announcements. See note 64 supra.

<sup>153</sup> See *United States v. General Motors Corp. et al.*, Cr. No. 47-140 (E. D. Mich.) (Bill of Particulars: filed Jan. 2, 1973) at 59-61, 138.

<sup>154</sup> Gas turbine power plants, however, have been installed in a handful of GM heavy duty trucks. But see note 158 infra.

<sup>155</sup> Minipickup imports from Japan grew from a mere 2,755 in 1964 to 64,618 in 1970. Ward's 1971 Automotive Yearbook at 11. Ward's 1966 Automotive Yearbook at 51. In 1971, GM introduced LUV (manufactured by GM-Isuzu); Ford introduced Courier (manufactured by Toyo Kogyo); and Dodge introduced Colt (manufactured by Chrysler-Mitsubishi).

<sup>156</sup> Federal Motor Vehicle Safety Standard (FMVSS) No. 210 extended safety belt requirements to trucks; door locks were extended to trucks by FMVSS No. 206. post-crash fuel system integrity will be extended to trucks in 1976 by FMVSS No. 301.

<sup>157</sup> Although Ford manufactured a limited number of "model 707" gas turbine truck engines, it abandoned production in 1973. Automotive News, Oct. 1, 1973, at 8-10.

<sup>158</sup> Toyo Kogyo (Mazda) is already marketing rotary-driven pickup trucks. Dun's, May 1973, at 144. Daimler-Benz, Messerschmitt, and Volkswagen have developed electrically-driven trucks. See note 435 infra. General Motors' Detroit Diesel Division has produced 129 gas turbine engines for truck installation facilities in Aug. 1971. But GM officials project that the turbine's "best prospects" are in boat and industrial rather than truck applications. Automotive News, Oct. 1, 1973, at 8, 10.

<sup>159</sup> See generally, White, supra note 52 at 199. Antiskid braking devices were developed by independent truck components suppliers, including Kelsey Hayes, Eaton, Bendix, Westinghouse, and Rockwell-Standard. Automotive News, Sept. 3, 1973, at 6. Likewise, semiautomatic transmissions for heavy duty trucks were first developed by Dana and Eaton, two major suppliers of truck companies. Semiautomatic operation is achieved with an electric clutch, electric brake, air controls, and solid-state electronic system components designed into the unit to control synchronizing and shifting functions. The advantages of semiautomatic over automatic transmission in the heavy duty truck market include lower initial price and maintenance costs, better gas consumption—in short the virtues of a mechanical gearbox coupled with the ease of automatic operation. Automotive News, June 18, 1973, at 6, 16; July 16, 1973, at 6, 69. Smaller truck producers have also made significant contributions. Mack, for instance, has developed a six-cylinder heavy duty diesel engine (Maxidine-300) which is reportedly quieter than those offered by GM's Detroit Diesel Allison Division. Automotive News, April 2, 1973, at 8.

<sup>160</sup> Multiplying the FTC's monopoly margin of 9.1 percent for motor vehicles (see note 87 supra) by the value of truck shipments (excluding city and intercity buses, see note 168 infra) in 1972 (\$7,200,000,000) yields an estimated monopoly overcharge of \$655.2 million. Automotive News (1973 Almanac issue) 2.

<sup>161</sup> In 1971, trucks consumed 27.09 billion gallons of motor fuel, or more than one-fourth of the 97.55 billion gallons of fuel consumed by all motor vehicles. Motor vehicle manufacturers Association, 1973 Motor Truck Facts 36 (1973).

<sup>162</sup> "A truck emits in the range of 10 times the pollutants as a car does." Congressional Record, Oct. 25, 1973 (daily ed.) at 47. With respect to the adverse health effects associated with diesel pollutants, see e.g. Satterfield, "Nitrogen Oxides: A Subtle Control Task," Technology Review (Oct. Nov. 1972) 10-16; Shy, C. et al., "The Chattanooga School Children Study: Effects of Community Exposure to Nitrogen Dioxide," 20 Journal of Air Pollution Control Association 539 (1970); and L. Nystrom, American Public Health Association—Energy Policy Project (1973 working draft). See also note 321 infra.

<sup>163</sup> Current market shares obtained from confidential sources. For a recent antitrust class suit filed by New York City on behalf of all the Nation's cities against General Motors for alleged monopolization of the bus industry, see Complaint, *City of New York v. General Motors Corp.*, 72 Civ. 4213, Oct. 4, 1972, in U.S. District Court for the Southern District of New York. On Aug. 10, 1973, District Court Judge Robert L. Carter ruled that New York City could represent 177 cities in 38 states and Puerto Rico in the pending antitrust action. N.Y. Times, Aug. 10, 1973, at 1, 48. It should be noted that the U.S. Justice Department filed a civil antitrust suit in 1956 against GM for alleged bus monopolization. That litigation ended with the Government's acceptance in 1965 of an innocuous consent decree which permitted GM to retain its monopoly of bus manufacturing. *United States v. General Motors Corp.*, 1965 Trade Cases, para. 71,624.

Flxible was incorporated in Ohio on Apr. 9, 1914. Moody's Industrial Manual 1966, 127. Its first president, Charles F. Kettering, subsequently joined the General Motors Corporation in 1916 and interlocked the two firms. A. Pound, *The Turning Wheel 273-74* (1934). From that date forward, GM acquired through Kettering the power to influence the policies of what became its only remaining competitor in the production of city buses. Mr. Kettering was a vice president, director, and shareholder of GM from 1929 until 1958. During that period of time he also held the following positions with the Flxible Company: President, from 1915 to 1940; Chairman of the Board, from 1940 to 1958; Director, from 1915 to 1958; and the largest individual stockholder, from 1915 to 1958. Standard & Poor's Register of Corporations, Directors and Executives (1958); Government's Pretrial Proposed Findings of Fact and Conclusions of Law, *United States v. General Motors Corp.*, Civ. Action No. 15816 (E.D. Mich.) filed: January 14, 1958, at 23-24, (hereinafter cited as G.M.-Streetcar, Findings of Fact).

<sup>164</sup> Motor Coach Industries is the bus manufacturing subsidiary of Greyhound Corporation. Moody's Transportation Manual 1972 at 1603. There is evidence that from 1926 until at least 1957 GM manufactured virtually all of Greyhound's intercity buses. G.M.-Streeter, Findings of Facts, supra note 163, at 8-12; Complaint, *United States v. Greyhound Corp.*, 57 Civ. 1107, filed June 27, 1957 (N.D. Ill.). As a result of a consent decree entered the same day that the Greyhound complaint was filed, Greyhound agreed to purchase its buses from additional companies, and 1962 established its own manufacturing subsidiary, MCI (Motor Coach Industries). To date, however, MCI has relied upon GM for diesel engines and other major components. Confidential interviews.

<sup>165</sup> On April 12, 1961, Attorney General Robert F. Kennedy announced that a federal grand jury had indicted General Motors for monopolization of the locomotive industry. At that time, GM accounted for 100 percent of passenger locomotives and 84 percent of all types of locomotives manufactured in the United States. Indictment, *United States v. General Motors Corporation*, 61 Cr. 356, filed April 12, 1961 (S.D.N.Y.) at 9. Two years later, on January 14, 1963, the Department of Justice followed with a civil antitrust action. Complaint, *United States v. General Motors Corporation* 63, Civ. 80, filed January 14, 1963 (N.D. Ill.). Both suits were subsequently abandoned. On December 28, 1964, the government's motion to nolle prosequi the criminal suit was granted; on June 2, 1967, the government's motion to dismiss the civil action was granted. See also, Kheel & Snell, Memorandum to Senator Edward M. Kennedy re Antitrust Implications of General Motor's Control of Automobile, Bus and Locomotive Production, November 1972.

<sup>166</sup> See text accompanying notes 33-43 supra.

<sup>167</sup> See text accompanying notes 44 through 47 supra.

<sup>168</sup> The Big Three's combined automotive sales in 1972 amounted to \$51.8 billion. Annual reports 1972: GM, Ford and Chrysler. Bus sales that year amounted to approximately \$170 million, of which GM's share was about \$120 million (assumes an overall market share of 70 percent for both city and intercity bus production; although GM's share of the intercity market is considerably less than 70 percent, it manufactures all the diesel engines (which represent 60 percent of the cost of an intercity bus) used by its assembler-competitor MCI). Therefore, the Big Three's combined motor vehicle and parts sales equal \$51.7 billion (\$51.8 billion minus GM's \$120 million bus sales). The combined sales of trains, buses, subway and rapid transit cars by Pullman, Budd, Rohr-Flexible and General Electric in 1972 amounted to an estimated \$2 billion. This figure was derived in the following manner: Rohr-Flexible bus sales—\$50 million; General Electric locomotive deliveries—\$117.8 million; Pullman, Budd, Rohr and GE railcar (passenger and freight) deliveries—\$1.47 billion. U.S. Bureau of the Census, Annual Survey of Manufacturers: Value of Shipments (1970 and 1971).

<sup>169</sup> Big Three employment amounted in 1972 to 1,447,400: General Motors, 760,000; Ford, 442,600; Chrysler, 244,800. Annual Reports 1972: General Motors, Ford, and Chrysler. By comparison, the four principal ground transport rivals reported their 1972 employment at 415,600: General Electric—369,000, Pullman—19,900, Budd—15,900, Rohr—10,800. Moody's Industrial Manual 1973 and Annual Reports 1972: General Electric, Pullman, Budd, Rohr. A listing of Congressional Districts with GM plants is contained in Fowlkes, Washington Pressures GM, National Journal 54, 69 (1971).

<sup>170</sup> In 1973, the Big Three automakers contributed virtually all of the estimated \$12.6 million expended that year by one motor vehicle manufacturer's association (MVMA). See note 299 infra. They also contributed an estimated \$1.5 million to the prohighway Highway Users Federation for Safety and Mobility (HUFSA). This estimate is projected from figures contained in HUFSA's 1972 IRS federal tax return, which indicated that MVMA contributed \$1,395,365 and GMAC an additional \$18,000 of HUFSA's 1972 budget of \$3,153,380. IRS form 990 for HUFSA fiscal year 1972, schedule No. 1-A. By contrast, the three principal rail transit lobbies raised only an estimated \$1.6 million in 1972. (IRS forms 990 indicate 1971 receipts of \$726,872 for the American Transit Association, \$604,564 for Railway Progress Institute and \$174,331 (fiscal year 1971) for the Institute for Rapid Transit). As General Motors is a member and major contributor to these rail transit lobbies, it can be reasonably assumed that Pullman, Budd, Rohr, and General Electric accounted for no more than \$1 million of the combined \$1.6 million estimated receipts of the three organizations. See notes 302 and 303 infra.

<sup>171</sup> According to a management press release, Budd Co. moved its corporate headquarters in 1972 from Philadelphia to Troy, Mich., near Detroit, in order "to consolidate management in the heart of the automotive industry," sales to which account for 80 percent of Budd's total corporate sales. Wall Street Journal, Mar. 3, 1972, at 15. For Rohr's relationship with General Motors, see note 163 supra. In 1972, Pullman revenues for truck trailer container deliveries amounted to \$264,531,000; its revenues from railroad cars and parts amounted to only \$178,364,000. Annual report 1972. Pullman income derived from the sale of railway equipment in 1972 amounted to \$178 million. By comparison, income derived from its sale that year of truck trailer equipment amounted to \$265 million. SEC 10-K form: 1972 at 1. It has been on the verge, reportedly, of leaving the railcar business in favor of automotive operations. In 1971 it sold its Michigan City freight car plant and acquired a 50-percent interest in Mahon Industrial Corp., which supplies equipment and services to automotive concerns. Standard & Poor's (June-July 1971) 8136. In addition, its Swindell-Dressler engineering division is active in building foundries for truck plants, notably the USSR Kama River foundry. Annual report 1972. In 1972, General Electric reportedly accounted for about 80 percent of all automotive lamps produced in this country.

<sup>172</sup> "One bus eases congestion and pollution by taking approximately 35 cars off the road." Testimony of American Transit Association in hearings before the Subcommittee on Housing of the House Committee on Banking and Currency on Urban Mass Transportation, 92d Congress, 2d session 83 (1972). The old PCC streetcar as well as proposed modern versions can accommodate from 52 to 68 seated patrons and as many as 70 additional standees. Railway Age, Mar. 12, 1973, at 33. One transit car during rush hour usually carries as many riders as 50 autos. General Electric, Clean Power for America's Future (brochure: December 1972). The displacement potential of passenger and freight trains was derived from information supplied in 1973 by AMTRAK and the American Association of Railroads.

<sup>173</sup> The last streetcars built in the United States were manufactured by the St. Louis Car Co. in 1952. Wall Street Journal, March 30, 1970, at 8. Subsequently, in April 1973

St. Louis Car retired from railcar manufacturing. *Railway Age*, July 30, 1973, at 8. Note, however, that Boeing-Vertol has won a contract to build 230 light rail vehicles for Boston and San Francisco, with expected delivery in 1975. *Wall Street Journal*, Feb. 23, 1973, at 6. The last electric trolley coaches were manufactured in 1955 by Marmon-Herrington, which then withdrew from the bus industry. *Motor Coach Age*, Oct. 1971, at 23; Plaintiff's Supplemental and Amended Answers to Defendant's Interrogatories, *United States v. General Motors* (GM-Bus case) 11 (filed June 21, 1965). Note, however, that a Canadian manufacturer, Flyer Industries Ltd., the only company in North America that is presently making new electric buses, has produced a prototype electric trolley bus for Dayton, Ohio. *Transport Central*, January 1972 3-4. The last interurban cars were built in 1947 by the St. Louis Car Company, which withdrew from all railcar activities in 1973. G. Hilton & J. Due, *The Electric Interurban Railways in America*, 223, 425. As of 1973, only three experienced railcar builders were intent on remaining in the market. Pullman, General Electric, and Rohr. Budd has stopped building self-propelled cars and has served notice that its Railway Division will be phased out. *Standard & Poor's 1310* (June-July 1971). St. Louis Car withdrew in 1972. General Electric, however, recently entered the market with its delivery of commuter cars to the New York MTA. *Railway Age*, April 9, 1973 at 22; see also *Wall Street Journal*, November 7, 1973, at 1. During the period 1964-69 GE built only 20 electric locomotives for installation on U.S. railroads. ICC *Transport Statistics* (1969). AMTRAK, however, has ordered 15 high-speed electric locomotives from GE. *Wall Street Journal*, March 26, 1973 at 5. In 1971 America's city bus fleet was at its lowest point since the early years of World War II. American Transit Association, *Transit Fact Book 1971-72* (1972) at 20. Likewise, its diesel locomotive fleet in the early 1970's was smaller than at any time since 1955. Association of American Railroads, *Railroad Facts 49* (1972).

<sup>174</sup> See, e.g., General Motors: "To a considerable degree, of course, the declining popularity of rail transportation is attributable to the increasing availability, lower cost and attractiveness of air transportation for long runs and of personal transportation by automobile for short runs." General Motors, *The Locomotive Industry and General Motors 35* (May 1973) (hereinafter cited as GM-*Locomotive*). "(T)he motor vehicle in surprisingly short time became the dominant element in urban transportation . . . Its first conspicuous effect was on existing transit systems. Two forces were at work here. First, as automobile ownership increased, people used their own cars for trips that they would formerly have made on public transportation. Second, railborne transit, especially streetcar and interurban lines, found itself in a losing contest with the motor bus, which was cheaper to operate and also enjoyed a flexibility that no railborne system could have." J. Rae, *The Road and the Car in American Life 208-209* (1972: financed by a research grant from the Motor Vehicle Manufacturers Association).

<sup>175</sup> "Until the early 1920's there were large numbers of potential new car buyers indicated by the wide gap between the number of households and total registrations . . . but it is clear that from about 1923 on, most new car sales had to be the old car owners. This 'saturation' of the automobile market was a common subject of concern in the industry in the 1920's." L. Weiss, *Economics and American Industry 332-333* (1966). See also Sloan, *supra* note 114, ch. 9.

<sup>176</sup> See, e.g., Lanzillotti, *supra* note 99, at 320.

<sup>177</sup> GM-Streetcar, *Findings of Fact*, *supra* note 163, at 20.

<sup>178</sup> Greyhound was organized in 1926 under the name Motor Transit Corporation as a \$10,000,000 holding company to establish a nationwide system of intercity buses. *Bus Transportation*, Dec. 1926, at 707; GM-Streetcar, *Findings of Fact*, *supra* note 163, at 8. GM personnel were actively involved in the formation and expansion of the Greyhound company and combined with it for the purpose of establishing a system of GM-equipped and Greyhound-operated intercity buses throughout the United States. I. B. Babcock, for instance, president of GM's bus manufacturing subsidiary, served simultaneously on the Greyhound Board of Directors until 1937 and was instrumental in developing the southeastern portion of the Greyhound bus network. GM-Streetcar, *Findings of Fact*, *supra* note 163, at 11; Complaint, *United States v. Greyhound Corp.* 57 Civ. 1107 (filed: June 27, 1957; consent decree entered same day) at 6, 7; *Bus Transportation*, Dec. 1926, at 707. See also notes 183-84 *infra*.

<sup>179</sup> See note 192 *infra*.

<sup>180</sup> See note 214 *infra*.

<sup>181</sup> See note 178 *supra*.

<sup>182</sup> Complaint, *United States v. Greyhound Corp.*, *supra* note 178, at 7-8; GM-Streetcar, *Findings of Fact*, *supra* note 163, at 9.

<sup>183</sup> "Since 1928 the company's policy has been to invite railroads to participate with it in the ownership of bus lines, with a view to developing coordinated passenger transportation." *Moody's Manual of Investments—Public Utilities 1940*, at 1178. The policy of "coordinated passenger transportation" was more carefully defined during Greyhound's negotiations with the New York Central Railroad in 1935. On June 18, 1935, Greyhound announced that it had submitted to the N.Y. Central a "plan for coordinated passenger transport." Under the proposal, the N.Y. Central would purchase part control of Eastern Greyhound (a subsidiary) which in turn "would provide highway service to replace branch line trains and local mainline trains . . ." *Moody's Manual of Investments—Public Utilities 1935*, at 1812. In September 1935, Central Greyhound was formed as a joint venture of Greyhound and N.Y. Central R.R. *Moody's Manual of Investments—Public Utilities 1940*, at 1181.

<sup>184</sup> See *Moody's Manual of Investment—Public Utilities 1935 and 1940 at 1807-1812 and 1178-1184*, respectively. From the outset, Greyhound involved railroad executives in its conversion program. See generally, *Bus Transportation*, June 1929, at 350-352. With respect to railroad stock participation in specific subsidiaries, see the following issues of *Bus Transportation*: Pennsylvania Greyhound (March 1929, at 168-169; July 1929, at 408; February 1931, at 100-101); Northland Greyhound (August 1929, at 457; September 1929, at 509-510) and Pacific Greyhound (March 1931, at 128).

One of the methods apparently used by Greyhound to coerce railroad participation in its conversion program was to operate bus lines which paralleled main rail lines. This procedure was employed successfully, for example, against the N.Y. Central R.R. and led to the formation of Central Greyhound in 1935. See note 183 *supra*. In January 1928 Greyhound sought and obtained over the formal protest of the N.Y. Central a certificate from

the Ohio Utilities Commission to operate an interstate bus line between Detroit, Michigan and Covington, Kentucky by way of Toledo and Cincinnati, Ohio. The bus routes paralleled the N.Y. Central's rail lines. Bus Transportation, January 1928, at 49. Subsequently, in September of 1932, Greyhound obtained over the N.Y. Central's protest a certificate from the New York Public Service Commission to operate a bus route parallel to the main line of the N.Y. Central between Syracuse and Rochester, New York. Bus Transportation, September 1932, at 404. Three years later, the N.Y. Central was willing to enter into an agreement with Greyhound to convert main and branch line passenger rail service to Greyhound bus operations through the formation of Central Greyhound. See note 183 supra. There is some evidence, moreover, that Greyhound undertook the direct acquisition and conversion of several electric interurban commuter railways including portions of the world famous high-speed Chicago North Shore Line, Interurbans, January-February 1948, at 4: Hilton & Due, note 173 supra, at 232, 392.

<sup>185</sup> All Class I Railway carried 466,753,000 revenue passengers in 1950. Moody's Transportation Manual 1952 at 26. Greyhound carried about 210 million revenue passengers that year. Derived from Annual Report 1952: Greyhound, and Nambo, Bus Facts 1972 at 26.

<sup>186</sup> GM-Streetcar, Findings of Fact, supra note 163, at 10-11. In December 1929, one month after General Motors contracted to be a virtually exclusive supplier of buses to the Greyhound companies, it organized a holding company, the National Highway Transport Corporation (NHTC), to establish an intercity bus system in the southeastern part of the United States. It placed I. B. Babcock, H. E. Listman and H. C. Grossman, officers of its bus division, on the Board of Directors of NHTC. Subsequently, beginning in 1931 NHTC was merged into Greyhound as the Atlantic Greyhound Lines. GM retained operating control of Atlantic Greyhound until 1934, when it transferred all of its stock interest to Greyhound. *Id.*, at 25-26.

<sup>187</sup> *Id.*, at 11.

<sup>188</sup> *Id.*: Moody's Manual of Investments—Public Utilities 1940, at 1178.

<sup>189</sup> Complaint, *United States v. Greyhound Corp.*, supra note 178, at 2-3.

<sup>190</sup> Hogan (General Counsel—General Motors), Statement of the Facts from the Court Records Regarding General Motors in the National City Lines Cases, as reported in Hearings before the Subcom. on Antitrust & Monopoly of the Senate Comm. on the Judiciary, on A Study of the Antitrust Laws—General Motors, 84th Cong., 1st Sess., at 3920 (1955) (hereinafter cited as 1955 Hearings).

<sup>191</sup> *Id.*

<sup>192</sup> "In 1932 defendant (GM) organized the United Cities Motor Transit Company (UCMT) as a wholly-owned subsidiary of Yellow, to acquire and develop these local transit companies. As in the case of Atlantic Greyhound, the operating committee consisted of major officers of Yellow: I. B. Babcock, P. W. Sells, H. E. Listman, H. C. Grossman, and D. L. Tate. M. D. Mills, formerly a regional sales manager for Yellow, was president of UCMT. All of UCMT's acquisitions were to be financed by defendant." GM-Streetcar, findings of fact, supra note 163, at 26.

<sup>193</sup> *Id.*

<sup>194</sup> Hogan, in 1955 Hearings, note 190 supra, at 3920. United Cities Motor Transit acquired and converted electric streetcars to GM buses in Kalamazoo, Michigan and Springfield, Ohio in 1932 and 1934, respectively. *Id.* at 26-27; Bus Transportation January 1934, at 34.

<sup>195</sup> GM-Streetcar Findings of Fact, supra note 163, at 27.

<sup>196</sup> *Id.* at 12-16.

<sup>197</sup> Control of the Omnibus Corporation was rumored to have passed to General Motors in 1930. In any event, John A. Ritchie served simultaneously as chairman of GM's bus division and president of Omnibus from 1926 until well after the motorization was completed. Bus Transportation, July 1926, at 339; *Id.*, April 1930, at 231; Moody's Manual of Investments—Public Utilities (1935), at 2467. "Ever since the motorbus had come on the scene in the early 1920's, Yellow had been the leader in sales, its primary job had been to equip the fleets of GM's own transit companies controlled via its subsidiary, the Hertz Omnibus Corporation." R. Solomon & A. Saltzman, History of Transit and Innovative Systems 1-19 (1971).

<sup>198</sup> See e.g., Solomon & Saltzman, supra note 197, at 1-20; Yellow Truck & Coach, Fortune, July 1936, at 61, 63.

<sup>199</sup> GM-Streetcar, Findings of Facts, supra note 163, at 17, 27-28. "It also caused M. D. Mills, former employee of defendant (GM) and president of UCMT, to become president of National City Lines." *Id.* at 25.

<sup>200</sup> For a detailed description of NCL's origin, scope, purpose and method of operation, see testimony of Dixon in 1955 Hearings, supra note 190, at 2595-2621; and Staff of Senate Antitrust Subcommittee, a Case Study of General Motors Corp., S. Rept. No. 1879, 84th Cong., 2d Sess. (1956) at 46-53 (hereinafter cited as 1956 Staff Report). The U.S. Department of Justice brought a criminal antitrust action against General Motors and allied automotive suppliers (including Standard Oil of California, Firestone Tire and Phillips Petroleum) for their participation in the NCL scheme. See, *Indictment, U.S. v. National City Lines*, Cr. No. 19270 (CD Cal: filed April 10, 1947). These suppliers contributed a total of \$9,029,557.67 to the NCL rail-bus conversion program. Brief for the United States, *U.S. v. National City Lines*, Nos. 9943-9953 at 23 (7th Cir. Oct. 20, 1959) (hereinafter cited as U.S. Streetcar Appellate Brief). The 16 states involved were as follows: Maryland, Florida, Alabama, Texas, Illinois, Indiana, Michigan, Ohio, Iowa, Oklahoma, Nebraska, Missouri, Mississippi, Utah, Washington and California.

<sup>201</sup> *United States v. National City Lines*, 1951 Trade Cases, para. 62,757 at 64,237 (ND Ill.).

<sup>202</sup> For an excellent description of the Pacific Electric System, consult Hilton & Due, supra note 173 at 406-413, and S. Crump, Ride the Big Red Cars (1962).

<sup>203</sup> Pacific City Line (PCL) was organized in 1938 by GM and Standard Oil of California as an NCL affiliate for the purpose of acquiring and converting electric railway properties on the West Coast. US Streetcar Appellate Brief, supra note 200, at 7. A preliminary meeting between General Motors and Standard Oil took place in Chicago in October 1937 regarding "plans for the acquisition of local transit operating companies in the Pacific Coast area. . . . It was understood at this meeting that the petroleum products business of such companies would go to Standard and the bus business to General Motors." *Id.* at 3. Subsequently, other corporations were invited to participate in the project. The presi-

dent of General Motors' bus division wrote to Standard Oil of New Jersey, for example, on January 23, 1939, and requested their stock investment. But they declined. *Id.* at 14. Ultimately, Greyhound and Firestone Tire joined GM, Standard of California and some other companies in the PCL undertaking. *Id.* at 10-12.

Pacific City Lines commenced doing business in January 1938, *Id.*, at 7. During that year, it received \$300,000 from GM. GM-Streetcar Findings of Fact, supra note 163, at 28. Shortly thereafter, it began acquiring electric interurban railroads from the Southern Pacific R.R. and converting them to bus operation. In 1939, for example, it acquired, scrapped and substituted bus lines for three northern California electric railways: Fresno Traction Co., San Jose R.R., and Stockton Electric R.R. Co. Moody's Manual of Investments—Public Utilities 1940, at 1747. n 1940, GM, Standard and Firestone "assumed the active management of Pacific (City Lines)" in order to supervise its California operations more directly. US Streetcar Appellate Brief, supra, note 200, at 18. That year the Pacific Electric, whose chairman was also a director of Pacific City Lines, announced that PCL would acquire, scrap, and replace with bus service the PE's electric interurban service to Glendale, Burbank, Pasadena and San Bernardino. Moody's Manual of Investments—Public Utilities 1940, at 19. Between 1940 and 1946, GM contributed an additional \$1 million to help finance PCL's conversion of Pacific Electric properties. GM-Streetcar, Findings of Fact, supra note 163, at 28-29. At the time of these acquisitions, the Pacific Electric was the world's largest interurban electric railway. Railway Age, October 27, 1952 at 43. The system extended from Los Angeles for a radius of more than 75 miles reaching north to San Fernando, east to San Bernardino, and south to Santa Ana; it operated in excess of 3,000 quiet, pollution-free electric trains daily among the region's 56 incorporated cities. Hilton & Due, supra note 173, at 406-413. By 1954, largely as a result of PCL intervention, nearly all passenger service had been abandoned. That year, another NCL affiliate, Metropolitan Coach Lines, purchased and scrapped what little remained of the Pacific Electric passenger system. *Id.* at 409.

<sup>204</sup> American City Lines (ACL) was organized and began operations August 31, 1943, with stock commitments from General Motors, Standard Oil of California and Firestone. The proceeds therefrom were to be used in the acquisition and conversion of rail transit systems throughout the United States. US Streetcar Appellate Brief, supra note 200 at 20. Between 1943 and 1946, GM invested about \$1,450,000 in ACL; Standard contributed an additional \$1,074,000. *Id.*, at 20. In December 1944, ACL acquired the Los Angeles electric transit system. *Id.*, at 19. Four months later ACL announced a "motorization" program for converting 19 of 25 streets railway lines to bus operation. Moody's Manual of Investments, 1945—Public Utilities, at 601. In 1944, the electric street railway carried more than 200 million revenue passengers. *Id.*

<sup>205</sup> Motorization of the L.A. streetcar system had a direct impact on the operation of the regional Pacific Electric. As the Pacific Electric shared downtown tracks with the L.A. streetcar company, motorization of the latter impeded the continued performance of the former. See Hilton & Due, supra note 173, at 50-52.

<sup>206</sup> Hilton & Due, supra note 173, at 409.

<sup>207</sup> *Id.*

<sup>208</sup> N.Y. Times, April 20, 1963, at 20.

<sup>209</sup> Southern California Rapid Transit District, Rapid Transit for Los Angeles: Summary report of Consultants' Recommendations, July 1973, at 45.

<sup>210</sup> *United States v. National City Lines, Inc.*, 186 F. 2d 562 (7th Cir. 1951); *certiorari denied*, 341 U.S. 916 (1951).

<sup>211</sup> *Id.*: see also, Bus Transportation, May 1949, at 80. H.C. Grossman was a director of Pacific City Lines from January 27, 1942 to October 17, 1946, and during the same period was an officer of General Motors. Government's Trial Brief, *United States v. National City Lines, Inc.* 49 Civ. 1364, at 32 (ND Ill., filed 1955).

<sup>212</sup> See Dixon testimony in 1955 Hearings, supra note 190, at 2607-2608.

<sup>213</sup> Streetcars numbered 37,868 on December 31, 1936; 5,300 on December 31, 1955. Transit Journal, January 1937, at 13; American Transit Association, Fact Book '71-'72, at 20.

<sup>214</sup> Statement by Roger M. Kyes, Vice President, General Motors Corporation, reported in 1955 Hearings, supra note 190, at 3927.

<sup>215</sup> G. Smerk, Urban Transportation 50 (1965).

<sup>216</sup> See *e.g.*, Hilton & Due supra note 173, at 119-148.

<sup>217</sup> Railway Age, October 27, 1952, at 44.

<sup>218</sup> Hilton & Due, supra note 173, at 50-52.

<sup>219</sup> From 1941 until December 1951, General Motors held sizable stock interests in Consolidated Freightways, a trucking company which as of July 31, 1951, served 11,788 route miles in California, Idaho, Minnesota, Montana, Nevada, North Dakota, Oregon, Utah, Washington, Wisconsin and Illinois. 1955 Hearings, supra note 190, at 3846-3847; Moody's Manual of Investments—Transportation 1952, at 69. From 1941 until August 1950, General Motors also retained stock interests in Associated Transport, a trucking company operating in 18 States in the Middle Atlantic, Eastern and Northeastern States. 1955 Hearings, supra note 190, at 3844; Moody's Manual of Investments—Transportation 1952, at 68.

<sup>220</sup> See note 218 supra.

<sup>221</sup> GM Interoffice Memorandum from F. J. Limback to E. P. Crenshaw, dated January 26, 1954, and entitled "Operating Report—1953."

<sup>222</sup> Rounds and Pearsall (GM Research Staff), Diesel Exhaust Odor, SAE paper No. 863, November 1-2, 1956, at 10.

<sup>223</sup> *Id.* at 10-12.

<sup>224</sup> See note 221 supra. Several groups continued during the 1950's to oppose GM's replacement of electric streetcars with diesel buses. See, *e.g.*, the Philadelphia County Medical Society's recommendation that the city halt the replacement of streetcars with diesel buses "until the problem of poisonous exhausts had been solved." N.Y. Times, November 11, 1956, at 15.

<sup>225</sup> GM-Streetcar, Finding of Fact, supra note 163, at 30.

<sup>226</sup> *Id.* at 9.

<sup>227</sup> In the early 1950's, General Motors manufactured an advanced intercity bus for Greyhound which it refused to sell to Continental Trailways. As a consequence, Trailways was forced to import buses first from Kassbohrer, a German manufacturer, and later from Bus & Car, a Belgian bus manufacturer. This placed Trailways at a distinct competitive

disadvantage. In the 1950's, imported buses were subject to a tariff duty of 10 1/2% and the transportation cost of the Kassbohrer buses was approximately \$1,650 each. GM-Streetcar, Findings of Fact, supra note 163, at 12; Holiday Inns (parent company of Trailways), Joint Proxy Statement Re Proposed Acquisition of Trailways, at 42 (filed with SEC on December 30, 1968); Government's Post-Trial Reply Brief on the Relevant Market Issue, *United States v. General Motors Corp.* (GM-Bus case), Civ. No. 15816, at 10 (ED Mich: August 18, 1961).

<sup>228</sup> Mr. Charles W. Perelle testified in 1955 that when he was vice president in charge of operations at Consolidated Vultee, he was asked in 1944 or 1945 by the Greyhound Corporation to design a bus for them. Consolidated Vultee was at the time looking for some postwar products and, because of their background and knowledge in the fabrication of aluminum, became interested in the possibilities of applying "aircraft techniques to the design of buses." At Greyhound's suggestion, Consolidated entered into the preliminary stages for design of a light-weight aluminum bus powered by a "revolutionary air-cooled engine," but dropped the project when it discovered the sales commitment between Greyhound and General Motors. Mr. Perelle stated that the Douglas Aircraft Company was also planning to enter intercity bus production with an innovative light-weight aluminum design, but abandoned the project for the same reason. He stated that since Greyhound was by far the single largest purchaser of intercity buses, denial of access to this market due to the GM-Greyhound tie-up was a powerful deterrent to potential intercity bus manufacturers. Perelle, in 1955 Hearings, supra note 190 at 2648-48; see also 1956 Staff Report, supra note 200, at 54.

<sup>229</sup> See GM-Streetcar, Finding of Fact, supra note 163, at 18-19, 30.

<sup>230</sup> Automotive Council for War Production, Twenty Years Progress in Commercial Motor Vehicles 214 (1942); Complaint, *City of New York v. General Motors Corp.*, 72 Civ. 4213 at 8 (SDNY: filed October 4, 1972).

<sup>231</sup> Complaint, *City of New York v. General Motors*, supra note 230, at 8-9; GM-Streetcar, Findings of Fact, supra note 163, at 23.

<sup>232</sup> Wall Street Journal, December 7, 1972, at 20; and March 22, 1973 at 33.

<sup>233</sup> *Confidential with former Department of Justice in April 1973.* The only result of the government's antitrust suit in 1956 against GM for bus monopolization was a consent decree entered on December 31, 1965, which required GM to supply diesel engines, transmissions and other major components to two bus assemblers, Flexible and Motor Coach Industries. *United States v. General Motors Corp.*, 1966 Trade Cases para. 71,624. (ED Mich: December 31, 1965). The Consent decree expires on December 31, 1975. *Id.* at 81,805. After that date, GM will no longer be obligated to supply these firms with components which it alone continues to manufacture.

<sup>234</sup> See, e.g. allegations in the recent class action brought by New York City against General Motors for bus monopolization: "26. The effects of the aforesaid offenses and violations by defendant, among others, have been and are:

\* \* \* \* \*

"(d) To cause and maintain excessive and non-competitive prices to be paid by bus operators and others, including plaintiff and the other members of the class, for new city buses and bus parts; \* \* \*

"(g) To compel plaintiff and the other members of the class to rely upon General Motors, whose primary economic incentives are to expand passenger car sales, for the supply and technological development of mass public transportation alternatives to passenger cars, including city buses; \* \* \*"

Complaint, *City of New York v. General Motors Corp.*, 72 Civ. 4213 at 12-13. GM's monopoly overcharge on the sale of city buses alone has been estimated as amounting to in excess of \$30 million annually. Statements of N. Redlich and B. Snell, press conference following filing of the New York City complaint, October 4, 1972.

<sup>235</sup> ACF-Brill, St. Louis Car and Pullman-Standard built electric streetcars as well as electric trolleybuses. Transit Journal, October 15, 1932, at 444, and September 14, 1935, at 346; S. Crump, Locomotive, Trolley, and Rail Car Builders 4, 51-52, 55 (1965). Marmon-Herrington and Twin Coach manufactured electric trolleybuses. Bus Transportation, February 1949, at 66.

<sup>236</sup> The Doble Steam Motors Company of Emeryville, California, for example, produced 61-passenger, double-deck, steam-driven buses as early as 1928. Bus Transportation, January 1928, at 5-7. At one time, White Motor also produced steam buses. Scientific Analysis Corporation, Steam Bus Symposium proceedings 51 (1971).

<sup>237</sup> "The advantages of steam as a motive power have been long recognized. Its smooth, speedy acceleration, its flexibility, its freedom from noxious exhaust gases and its comparatively small number of slow moving parts are among the factors which make the noiseless steam engine ideal for bus service." Miller (Engineer-in-Charge, Detroit Motorbus Company, Detroit, Michigan), Steam Bus in Actual Service, Bus Transportation, January 1928, at 5. The advantages of electric bus operation over motor bus operation have also been acknowledged since at least the 1930's: "The principal advantages of the trolley bus as compared with the motor bus are: (1) smoother operation; (2) freedom from vibration, obnoxious gas fumes and engine heating; (3) more uniform control of power costs; (4) performance characteristics of electric motor superior to those of gasoline engine." Transit Journal, October 15, 1932, at 479. "As compared with the motor bus, the trolley bus gives greater comfort with less noise and no odors." Transit Journal, October 15, 1932, at 483. These past assessments of electric bus operations have validity today as well. According to a recent study of GM's most advanced "EIP" city buses, the U.S. Department of Transportation concluded that "the most significant direction for future bus development is in the use of electric power. Such a vehicle would be both pollution free and as nearly silent as possible." DOT, Urban Mass Transportation Administration, San Francisco EIP Project: Final Report 41 (April 1972). See also the 1971 recommendation of the Philadelphia Department of Public Health that the regional transportation authority (SEPTA) phase out diesels in favor of electric buses in order to eliminate "the localized smoke and odor nuisances which are now causing numerous citizen complaints." City of Philadelphia, Department of Public Health, Statement to SEPTA on Environmental Impact of Purchase of 100 "New Look" (Diesel) buses 2 (March 3, 1971).

<sup>238</sup> In the early 1930's General Motors did build a small number of electric buses for the Wisconsin Gas & Electric Company. Transit Journal, October 15, 1932, at 444. GM also

delivered some "all service" gas/electric combination buses to Public Transport of New Jersey in 1935. The hybrid buses were used in Public Transport's streetcar conversion program, which was financed and managed in part by General Motors. Transit Journal, May 1935, at 169; and July 1935, at 209; GM-Streetcar, Finding of Fact, supra note 163 at 18-19.

<sup>239</sup> Lear Motors Corporation has developed a steam turbine bus which is one-third quieter than diesel buses and whose exhaust emissions are well within the rigorous 1975 emission standards established by the State of California for heavy duty vehicles. Lear Motors Corporation, Progress Report (March 1973). Similarly, Mercedes-Benz has developed a hybrid OE prototype which runs silently and exhaust-free on battery power in town and recharges on diesel electric power in less-populated exurban areas. Significantly, Mercedes sells buses in over 130 other countries, but does not market city or intercity buses in the United States.

<sup>240</sup> See note 236 supra.

<sup>241</sup> See note 173 supra.

<sup>242</sup> San Francisco, Seattle, Boston, Philadelphia and Dayton operate electric bus fleets; all but Dayton's system, however, are small in number. Address of Clark P. Turner, Trackless Transit Vehicles, 27th Annual Ohio Transportation Engineering Conference (April 1973). Streetcars (all built before 1954) are operated on a marginal basis in Boston, Cleveland, Newark, Philadelphia, Pittsburgh, New Orleans, San Francisco, and El Paso, Der Stadtverkehr, May-June 1972, at 176. Attempts by General Motors to dieselize electric transportation in both Dayton and Seattle have been reported.

<sup>243</sup> This comparative revenue estimate is derived in the following manner: Due to its larger carrying capacity, one bus can supplant 35 automobiles. See note 172, supra. The price for an average city bus is about \$40,000. American Transit Association (1973). The estimated average retail selling price for new automobiles is \$3,700. National Automobile Dealers Assoc., The Franchised New Car and Truck Dealer Story (1973). The average life of a diesel bus is 18 years. Toronto Transit Commission Report No. 5 (November 5, 1969). The average life of an automobile is about 5 years. Motor Vehicle Manufacturers Association, 1972 Automobile Facts and Figures 31 (1973). Thus, during the life of one \$40,000 bus, GM could realize instead \$466,200 in automobile sales ( $\$3,700 \times 35 \times 18/5 = \$466,200$ ), or more than 10 times the bus revenue.

<sup>244</sup> The Toronto Transit Commission in its recent study of diesel vs. electric bus operation assumes a useful life of 18 years for diesel and 25 years for an electric bus. See note 243 supra. Thus, the economic life of a diesel is 28 percent less than that of an electric bus. Toronto operating costs indicate the diesel at 22.41 cents per mile vs. 16.02 for electric buses, or 40 percent higher. *Id.* As measured in terms of acceleration, diesel bus productivity is 9 percent lower than electric bus productivity. Derived from Dayton City Transit Fleet study (1972). The fundamental reason for the comparatively inferior performance of diesel buses arises from the nature of this type of motive power. Inherently, a diesel engine is less efficient in terms of the conversion of energy to work-output than an electrically driven vehicle. "(A) Vehicle powered by a prime mover having only one, perfectly balanced moving part and operating at less than 300° Fahrenheit (i.e., electric motor), cannot possibly be more expensive to operate and maintain than one having hundreds of moving parts and operating in excess of 1700° Fahrenheit." Washington Society of Professional Engineers, Paper No. CA-172 at 2 (January 1972). More specifically, the tractive efficiency of the GM diesel bus has been estimated at only 10.6% as compared with the 83.4% tractive efficiency of electric-powered buses. Washington Society of Professional Engineers, Paper No. CA-165 at 20-21 (December 1966). In other words, due to the tremendous loss in conversion, fuel costs and hence overall operating costs are much higher for diesel buses. As one group of engineers has observed, "even if motor fuel were free, it would still be cheaper to power a trolley or even a streetcar." *Id.* at 23.

<sup>245</sup> With respect to the public's reaction to diesel bus smoke, see e.g. EPA's statement that it "receives more complaints on diesel odor than on any other pollution problems." Business Week, June 3, 1972, at 54d; the City of Philadelphia's Air Management Service recommendation in favor of electric rather than diesel-powered buses because of "localized smoke and odor nuisances which are now causing numerous citizen complaints." See note 224 supra, at 2. The average noise level of electric buses has been measured at about 65 decibels compared with 94-95 decibels for a GM diesel bus. Robert M. Towne & Associates, Inc., Seattle Transit Noise Study (March 3, 1970); DOT, Urban Mass Transportation Administration, San Francisco EIP Project: Final Report 22-23 (April 1972). The correlation between acceleration, faster schedules and ridership has long been recognized. See note 237 supra. It is not surprising, therefore, that in a recent poll conducted in Dayton (which operates both diesel and electric (trolley) buses) 70 per cent of those interviewed stated that they preferred electric to diesel buses. Dayton Daily News, October 24, 1972, at 3.

<sup>246</sup> It has been suggested, therefore, that dieselization results in "certain bankruptcy of urban transit systems." Washington Society of Professional Engineers, Paper No. CA-172 at 8 (January 1972). Since 1955, when GM ceased its overt dieselization programs, 530 bus companies have abandoned operations, leaving many cities without any transportation alternative to the automobile. Bus Transportation, February 1956, at 26; American Transit Association, '72-'73 Transit Fact Book 3 (1973).

<sup>247</sup> City and intercity motor bus ridership in 1952 amounted to 8.4 billion. Bus Transportation, February 1953, at 30-33. By 1972, city motor bus ridership had declined to 4.5 billion and intercity motor bus ridership had fallen to 125 million, or a combined loss since 1952 of 3.8 billion passengers. American Transit Association, '72-'73 Transit Fact Book 8 (1973); National Association of Motor Bus Owners, Bus Facts 13 (1975). Bus sales have declined, from 8,450 city and intercity buses in 1951 to 3,735 in 1972, or by about 56 percent. Bus Transportation, February 1956, at 38-39; American Transit Association, '72-'73 Transit Fact Book 17 (1973); National Association of Motor Bus Owners, Bus Facts 4 (1973).

<sup>248</sup> Ward's Automotive Yearbooks: 1956, at 168; 1973, at 131.

<sup>249</sup> GMC motor homes "are produced and assembled at a completely re-equipped GMC plant in Pontiac, whose history dates back 50 years and where transit coaches, military vehicles and light-duty trucks were formerly built." Automotive News, January 8, 1973, at 8.

<sup>250</sup> Complaint, *United States v. General Motors Corp.* (GM-Locomotive civil antitrust suit), 63 Civ. 80, at 11 (ND ILL: filed January 14, 1963); "The Winton Engine Company is unquestionably the outstanding Diesel engine manufacturer in the United States." Letter from J. L. Pratt, GM Vice President, to GM Operations and Finance Committees, dated October 21, 1929, and reprinted in *1955 Hearings*, supra note 190, at 4338.

<sup>251</sup> *Complaint*, GM-Locomotive civil suit, supra note at 11; see also, extract from Minutes of GM Finance Committee Meeting of October 16, 1930, reprinted in *1955 Hearings*, supra note 190, at 4345.

<sup>252</sup> Since 1937, GM has been the nation's largest manufacturer of locomotives; from 1945 to date, it has secured from 57 to 84 per cent of industry sales. General Motors, the Locomotive Industry and General Motors 75 (May 1973).

<sup>253</sup> Comparative gross revenue figures were derived in the following manner: One GM-powered passenger train can supplant 1000 cars. Association of American Railroads (1973). One GM-powered freight train can displace a fleet of 150 GM heavy freight trucks. Association of American Railroads (1973). The average price of a diesel locomotive is approximately \$300,000; the average price for an over-the-road diesel truck tractor (GM builds truck tractors; other firms produce the trailer, or freight-carrying section) is roughly \$25,000. American Trucking Association (1973); Association of American Railroads (1973).

The average economic life of a diesel locomotive is 15 years; the average life of an automobile is slightly more than 5 years; the average life of a heavy duty truck is 7 years. Association of American Railroads (1973); Motor Vehicle Manufacturers Association, 1973 Motor Truck Facts at 26 (1973); During the life of a single \$300,000 GM diesel locomotive, therefore, GM could realize  $(\$3,700 \times 1,000 \times 15/5)$  \$11.1 million instead on the sale of automobiles, or (if the locomotive was for freight service) it could realize  $(\$25,000 \times 150 \times 15/7)$  \$8.0 million instead on the sale of diesel truck tractors. Thus, its revenues were 37 times larger for cars, and 27 times larger for trucks, than for train locomotives.

<sup>254</sup> It is significant to note that if electric locomotives (which have a 30-year life) are considered, the comparative revenue figures for cars and trucks as measured against locomotives become 70 times and 50 times larger, respectively. See note 272 infra.

<sup>255</sup> In 1935, GM accounted for 2.4 percent of total U.S. locomotive deliveries. General Motors, the Locomotive Industry and General Motors 75 (May 1973). That year, there were 842 electric and 113 diesel locomotive units in service on American railroads, or a ratio of more than 7 to 1. ICC, Transport Statistics in the United States: Railroads, at 8 (1969). At that time, General Electric was in the process of completing 5,000 horsepower steam turbine-electric locomotives for the Union Pacific. 1955 Hearings, supra note 190 at 3982-83.

<sup>256</sup> "In November 1935, defendant's (GM) subsidiary, Electro-Motive Corporation, issued standing instructions to the effect that its railroad freight shipments should be subject to the jurisdiction of its locomotive sales department . . . the effect . . . has been to inject traffic considerations into the locomotive purchasing decisions of railroads." Government's Answers to General Motors' Interrogatories, *United States v. General Motors Corp.*, (GM-Locomotive civil suit), 63 Civ. 80, at 115-116 (ND ILL: filed February 3, 1966). From 1935 to date, GM has been the nation's largest shipper of freight over railroads accounting during the 1950's for about 15 million tons annually, and during the 1960's and early 1970's for about 20 million tons a year. Indictment, *United States v. General Motors Corp.*, (GM-Locomotive criminal suit), 61 Cr. 356, at 4 (SDNY: filed April 12, 1961); Railway Age, June 26, 1972, at 28. 1971 GM rail freight bill; Railway Age, September 25, 1972, at 14.

<sup>257</sup> GM locomotive market share reported of 80.1 percent in General Motors, supra note 252, at 75 (May 1973). As of December 31, 1970 the American locomotive fleet consisted of 26,796 diesel, 252 electric and 13 steam units, respectively. Association of American Railroads, 1972 Yearbook of Railroad Facts 49 (1972).

<sup>258</sup> Interoffice Memorandum from Mr. Franklin P. Auwarter to Messrs. Leo F. Tierney, Bryson P. Burnham, Lee N. Abrams, entitled *United States v. General Motors (Locomotives): Reciprocity as Proof of Offense of Monopolization under Section 2 of the Sherman Act*, and dated September 13, 1963.

<sup>259</sup> Confidential interview of March 1973 with former Department of Justice official.

<sup>260</sup> Indictment, GM-Locomotive criminal antitrust suit, supra note 256, at 17.

<sup>261</sup> "In the field of transportation, Westinghouse pioneered in railway electrification, developing the now widely used single-phase alternating-current system . . ." Moody's Industrial Manual, 2105 (1939).

<sup>262</sup> Indictment, GM-Locomotive criminal suit, supra note 256, at 6.

<sup>263</sup> *Id.*

<sup>264</sup> Confidential interview of February 1973 with former Department of Justice official.

<sup>265</sup> As of December 31, 1972, the American locomotive fleet consisted of 26,830 diesel, 212 electric, and 13 steam units. Association of American Railroads, Yearbook of Railroad Facts 50 (1973). GE accounted for about 17% of all railroad locomotives in 1971. Confidential sources 1972.

<sup>266</sup> G. Rogers, Memorandum on Operation of American Railroads by Diesel Power 37 (unpublished) (May 1973); Conway, The Electrification of American Railroads, 29 Annals of the American Academy of Political and Social Sciences 266, 267-272 (1907).

<sup>267</sup> Transit Journal, January 1932, at 35.

<sup>268</sup> Confidential interview with former New Haven R.R. official in 1973.

<sup>269</sup> See note 283 infra, and Brown & Marmaros, The Financial Return on Railway Electrification, Proceedings of the AIEE July 1958, at 165.

<sup>270</sup> See note 272 infra.

<sup>271</sup> Interstate Commerce Commission, Passenger Fares: The New York, New Haven and Hartford Railroad, Docket No. 33332, at 26 (1960) (hereinafter cited as ICC Report).

<sup>272</sup> *Id.* at 29, 41.

<sup>273</sup> *Id.* at 27, 35-36. GM's representations are found in its report entitled Application of General Motors Diesel Motive Power on the New Haven Railroad (Oct. 1957), and filed in Docket 33332 as ICC Exhibit 28.

<sup>274</sup> "In disregarding the advice of independent engineering consultants, the New Haven appears to have relied almost exclusively on the advice of General Motors, the diesel-electric locomotive manufacturer. The savings anticipated from a progressive elimination of electric locomotive operations proved to be a mirage." *Id.* at 27.

<sup>275</sup> The ICC cited approvingly from a Gibbs & Hill study requested by the New Haven which concluded that abandonment of electrification in favor of the GM diesels "will result in a much higher investment and also higher operation, maintenance and depreciation expense." ICC Report, *supra* note 271, at 32. The ICC found that the New Haven experienced substantial losses following its dieselization in 1956 "as a result of a decline in freight and passenger traffic, not offset by corresponding decreases in operating cost." *Id.* at 14.

<sup>276</sup> ICC Report, *supra* note 271, at 15.

<sup>277</sup> *Id.*

<sup>278</sup> Moody's Transportation Manual 879-880 (1970).

<sup>279</sup> Report of the Commission, 314 I.C.C. 377, 386-87 (1961).

<sup>280</sup> *Id.*

<sup>281</sup> *Id.* at 387.

<sup>282</sup> Railway Age, July 9, 1973, at 26-27.

<sup>283</sup> Rail passenger figures contained in Association of American Railroads, Yearbook of Railroad Facts 30 (1973). Freight revenue figures by mode reported in American Trucking Association, American Trucking Trends 16 (1973). The decline in rail passenger traffic has been attributed, at least in part, to dieselization. According to a report prepared by the U.S. Department of Commerce, GM-powered diesel trains, such as the Aerotrains, discourage patronage: "people began to object to the level of noise and vibration at the higher speeds . . . breakdowns were so numerous that passengers stayed away because of unreliability." U.S. Department of Commerce, Transportation Research Staff, "The Rate of Technological Progress in the Railroad Industry," contained in Hearings before the Subcomm. on Transportation and Aeronautics of the House Comm. on Interstate and Foreign Comm. on H.R. 5863, 89th Cong., 1st sess., at 50 (1965).

<sup>284</sup> Mr. Brown was for many years associated with the firm of Gibbs & Hill, Consulting Engineers (New York-Los Angeles), which was cited approvingly by the ICC for its recommendation opposing GM's dieselization of the New Haven RR. See note 275 *supra*. For an excellent exposition of the comparative costs of diesel versus electric railway operation, see his presentation before the British Institution of Mechanical Engineers, Economic Results of Diesel Electric Motive Power on the Railways of the United States of America, 175 Proceedings of the Institution of Mechanical Engineers 257 (1961). See also, Brown and Kimball, A Reappraisal of the Economics of Railway Electrification, Paper 54-29 AIEE (presented at the AIEE Winter General Meeting January 18-22, 1954); Brown, Railway Electrification in the United States: Has It A Future? (presented to the New York Section AIEE-Transportation Group, December 13, 1961).

<sup>285</sup> Bus Transportation, August 1932, at 368.

<sup>286</sup> Bus Transportation, July 1956, at 47.

<sup>287</sup> Federal Trade Commission, Report on the Motor Vehicle Industry 64 (1939). (hereinafter cited as FTC 1939 Report)

<sup>288</sup> Britton, The Little Man's Stake in Motor Legislation, Bus Transportation, January 1933, at 54.

<sup>289</sup> *Id.*, at 52, 54.

<sup>290</sup> *Id.*

<sup>291</sup> *Id.*

<sup>292</sup> *Id.*

<sup>293</sup> B. Kelley, the Pavers and the Paved 50 (1971); As of October 1972, 45 of the 50 States had either constitutional or statutory restrictions on the use of gasoline taxes for any purpose except highway construction and maintenance. Shannon, The Untrustworthy Highway Fund, The New York Times Magazine October 15, 1972, at 120.

<sup>294</sup> According to the financial and accounting section of the Federal Highway Administration, the total non-federal capital outlays for state, city and county roads during the period 1945-70 amounted to \$155.46 billion.

<sup>295</sup> W. Owen, the Accessible City 27 (1972). The highway lobby's opposition to rail transit continues unabated. In 1970, San Francisco's Mayor Joseph Alioto, for example, criticized the efforts of the auto lobby to defeat proposals to finance BART, a regional subway system still under construction. He cited the "attempts of the automobile lobby to kill off BART" because it "looks on BART as competitive with their automobiles." Alioto, testimony in Hearings before the House Subcom. on Housing of the Comm. on Banking and Currency, on Urban Mass Transportation 91st Cong. 2nd sess. at 162. (1970); Forbes October 1, 1968, at 42.

<sup>296</sup> See generally, H. Leavitt, Superhighway-Superhoax ch. 2 and 136-139 (1970); Kelley, *supra* note 292, at 50; and the testimony of dozens of member organizations of NHUC including the Automobile Manufacturers Association, the American Automobile Association, the American Trucking Association, the Automotive Safety Foundation, and the American Petroleum Institute in Hearings before the House Committee on Public Works on Federal Aid Highway Act of 1954 83rd Cong. 2nd Sess. (October 1954) and 84th Cong. 1st Sess. (April, May, June 1955).

<sup>297</sup> Campaign contributions have remained a key element in the highway lobby's political strategy. According to Forbes, for example, 13 of the 34 members of the House Public Works Committee, which has jurisdiction over highway legislation, received campaign contributions in 1968 from the highway lobby ranging from \$500 to \$3,000. It is also an accepted practice for NHUC to ask key members of Congress to address their meetings for a fee that may run as high as \$5,000. Forbes, The US' Lopsided Transportation Budget, October 1, 1968, at 42. See also Leavitt, *supra* note 295 at 139-140 (1970). HUFSA lobbying operations at the state level are considerable, as indicated by an interoffice memorandum to HUFSA president Yule Fisher from field representative J. R. Justice, dated August 25, 1971: "We have a base and breadth of contact in the states and at the local level that is the envy of every organization that is aware of our work. With this already available to us, we could get the highway transportation story across to the news media in a personal and thorough manner." . . . "Another consideration is the vast potential within our own state highway user family that remains fertile soil for cultivation. Most of the organizations with which we work at the state level have some sort of newsletter, magazine or other type of printed communication." . . . "There is some question in my mind, too, as to why we should want to pay for advertising when such great opportunities exist for free time on the air and in the press just for the taking."

During the debates on the establishment of a National Defense Interstate Highway Program, the presence of ex-GM vice president Charles E. Wilson in the Eisenhower Ad-

ministration as Secretary of Defense was of an inestimable value to the highway lobby. In this regard, see Leavitt, *supra* note 295, at 45. Since at least the late 1930's, the Motor Vehicle Manufacturer's Association (successor to the Automobile Manufacturers Association) has contributed vast sums of money both to NHUC and to purportedly unbiased academic/engineering groups such as the Automotive Safety Foundation and Harvard University Traffic Bureau. FTC 1939 Report *supra*, note 207, at 47 (1949). For an illuminating discussion of the lobbying activities of the Automotive Safety Foundation, see Kelley, *supra* note 292, at 45-50.

<sup>297</sup> An economist from the Association of American Railroads raised the question of the possible adverse effects on railroads of boosting highway transport. Leavitt, *supra* note 295, at 40.

<sup>298</sup> Shannon, *supra* note 292, at 122.

<sup>299</sup> On January 7, 1970, the affiliation of the National Highway Users Conference and the Automotive Safety Foundation was made official at a press conference in the Mayflower Hotel in Washington, D.C. The resulting organization was named Highway Users Federation for Safety and Mobility. Kelley, *supra* note 292, at 55. The pro-highway, anti-rail objectives of the predecessor NHUC organization were assumed by the new HUFSA group. Wall Street Journal, February 17, 1972 at 1. HUFSA's annual budget amounts to roughly \$3 million a year, of which more than half comes from GM, Ford and Chrysler. See note 170 *supra*. The 1973 budget of the Motor Vehicle Manufacturers Association amounts to \$12,600,000. Automotive News, November 27, 1972, at 3.

<sup>300</sup> One commentator has estimated that the auto companies and related highway interests spend \$100 million annually lobbying for highways. Cameron, How the Interstate Changed the Face of the Nation, Fortune, July 1971, at 125. Another has placed the figure at \$500 million a year. The US' Lopsided Transportation Budget, *supra* note 296, at 42.

<sup>301</sup> In response to recent public pressures for opening up the Highway Trust Fund to rail transit construction, HUFSA and MVMA have modified their automobile-and-trucks-only policy to allow for possible public funding of "bus transit." The rationale has been explored elsewhere:

"The obvious ploy is to meet mass transit halfway, or seem to: Rising public complaints about the inadequacy of roads for moving large numbers of people are neatly soothed away; the small public revenues for mass transit are partly siphoned over to roads; and the gigantic public revenues for roads stay with the roads."

Railway Age, January 10, 1972. For the automakers and their highway allies, "bus transit" is a far more preferable alternative than rail transit. As one article has noted, "of course, buses require highways." Wall Street Journal, February 17, 1972, at 17. Buses, moreover, contribute to the sales of the industrial members of the highway lobby: they are manufactured by General Motors, fueled by oil companies, fitted with the tires of rubber manufacturers and operated over asphalt highways produced by oil company subsidiaries. Furthermore, bus transit could actually generate greater sales of cars and trucks. More specifically, HUFSA and MVMA are suggesting the displacement of rail subways by underground diesel busways. See, e.g., MVMA, The Potential for Bus Rapid Transit 48-50 (1970). It is not unreasonable to conclude, however, that the poisonous exhausts and tremendous noise of diesel buses in underground tunnels would very soon divert even the most dedicated transit patrons to automobiles.

<sup>302</sup> Annual budgets for the ATA, RPI and IRT are reported in I.R.S. forms 990—Return of Organization Exempt from Income Tax. See note 170 *supra*.

<sup>303</sup> *Id.* Confirmed in telephone interviews during 1973 with personnel at the three respective organizations.

<sup>304</sup> In July 1973, a House-Senate Conference Committee voted to permit limited monies from the \$5 billion-a-year Federal Highway Trust Fund to be spent for rail systems beginning in fiscal 1976. But the token amount of assistance involved (\$800 million) and the innumerable qualifications on its use (e.g., cannot be diverted from an interstate highway project) limited the value of the legislation for rail transit development.

<sup>305</sup> See, e.g., Ford's proposed construction of a 3/4 mile horizontal elevator system for Bradley International Airport at Hartford, Connecticut. Automotive News, August 27, 1973.

<sup>306</sup> See note 339 *infra*.

<sup>307</sup> GM was awarded \$500,000 by DOT to design a dual mode transit bus based on the GMC motor home. Washington Post, September 24, 1973 at A3.

<sup>308</sup> Given their control over ground transport, the automakers do not seem concerned that rail transit will displace their automobiles. As Henry Ford II noted recently, "cars are here to stay." Editorial, New York Times, November 28, 1973 at C45.

<sup>309</sup> Automobiles account for 85.2 percent of all personal trips, 82 percent of all work trips and 87.1 percent of all intercity travel. Motor Vehicle Manufacturers Association, Automobile Facts 35-37 (1972). Truck freight revenues in 1971 amounted to \$79.7 billion, or 78 percent of total freight revenues for all transport modes. Motor Vehicle Manufacturers Association, Motor Truck Facts 32 (1973).

<sup>310</sup> See note 86 *supra*.

<sup>311</sup> Private automobile transportation accounted for \$101 billion in 1971; highway movement of freight by truck cost an additional \$80 billion. Motor Vehicle Manufacturers Association, Motor Truck Facts 49 (1973).

<sup>312</sup> Comparative energy-consumption figures obtained from Rice, System Energy and Future Transportation, Technology Review, January 1972, at 31, 34.

<sup>313</sup> This diversion figure is derived as follows. One rail transit car during rush hour will carry as many urban riders as 50 automobiles. See note 172 *supra*. It will consume less than one-fifth the basic energy. Rice, *supra* note 312, at 34; see also Office of Emergency Preparedness, The Potential for Energy Conservation, C-5-C-7 (October 1972). Currently, consumers of \$10.5 billion (assuming a pretax pump price of \$0.30 per gallon). Equivalent capacity urban rail would consume one-fifth as much energy, or a saving of \$8.4 billion a year.

<sup>314</sup> "Most misallocated freight traffic over medium and long distances has been moved by truck at higher unit costs than it could have been moved by rail. \* \* \* Conservatively, the cost of this misallocation amounts to \$5 billion per year in added freight costs to the prices of the goods, and it might double that amount or more." Nelson, Toward Rational Price Policies, in Williams, *supra* note 31, at 115-116.

<sup>315</sup> A comparison of passenger fatalities to passenger miles from 1961 through 1970 shows train travel to have been 23 times as safe as traveling by private automobile. Association of American Railroads (April 1972). Economic damages attributable to automobile accidents in 1971 amounted to an estimated \$16.9 billion a year. Insurance Information Institute, Insurance Facts 48 (1972).

<sup>316</sup> *Id.* at 46; Sansom (EPA), *The Automobile as a Social Machine*, address delivered at Detroit Jan. 10, 1973.

<sup>317</sup> Private automobiles within the 2 percent of the U.S. continental area classified as urban used 35 billion gallons of fuel, 60 percent in trips of 2½ miles or less. Urban trucking and parcel delivery consumed 5.4 billion gallons and institutional vehicles accounted for an additional 1.8 billion gallons of fuel, or a combined total of 42.2 billion gallons for urban motor vehicle transportation. By comparison, 41 billion gallons were burned in the other 98 percent of the country. Rice, note 312 *supra*, at 31-32.

<sup>318</sup> In 1970, cars and trucks produced 120 million tons of carbon monoxide, hydrocarbons, oxides of nitrogen, and atmospheric lead emissions. An estimated 55 percent, or 66 million tons, was released in urban areas. Sansom (EPA), *The Automobile as a Social Machine*, *supra*, note 316.

<sup>319</sup> 119 Congressional Record S3559 (daily ed. Feb. 28, 1973).

<sup>320</sup> See, e.g., Goldsmith, J. R., and S. A. Landau, CO and Human Health, 162 Science 1352-1359 (December 1968); Astrup, P., et al., Effects of CO Exposure on the Arterial Walls, paper presented at the New York Academy of Sciences Conference on the Biological Effects of Carbon Monoxide (Jan. 12-14, 1970); L. Nystrom, American Public Health Association—Energy Policy Project (working draft: 1973).

<sup>321</sup> See, e.g. the conclusions of one expert: "Nitrogen dioxide . . . from the diesel engine . . . dissolves in the moist mucous of our lungs to form nitric acid. This very powerful irritant in significant concentration has a severely damaging effect on the cilia and lining membranes of the lungs . . . (and) contributes significantly to the rapidly rising incidence of pulmonary emphysema, an affliction fast becoming one of the major crippling diseases." Letter from Dr. Robert L. Reeves, MD, Virginia society's major research center, dated July 11, 1968. With respect to the carcinogenic effects Mason Research Center, another expert working in England has found that ". . . in one of diesel emissions, another expert working in England has found that ". . . in one of diesel lorry expels four times the cancer-producing substances as are contained in the smoke of 350,000 cigarettes . . ." Dr. Paul Kotin, National Underwriters Magazine, July 17, 1964. The tendency for motor vehicle emissions to accelerate death by slowly destroying the body's ability to resist disease, causing people to die earlier of heart disease and chronic lung disease, has been noted by Dr. Bertram W. Carnow, chief of the environmental health section of the University of Illinois College of Medicine. Los Angeles Times, Nov. 5, 1971. See also, note 156 *supra*.

<sup>322</sup> See e.g., Netschert, *supra* note 99, at 32.

<sup>323</sup> [T]he indirect route of fuel consumption via the central station is vastly more efficient than the direct route of fuel consumption in the vehicle. Therefore, even though electrification may add to the pollution problems involved in power generation, there cannot fail to be a net benefit for pollution abatement." *Id.*

<sup>324</sup> Fitch, *Improving Urban Transportation*, in Williams, note 31 *supra*, at 175 (1972).

<sup>325</sup> W. Fiser, *Mastery of the Metropolis* 29 (1962).

<sup>326</sup> In fact, one authority places the space-equivalency figure for rail transit at one-sixteenth that of highways. Telephone interview, Mr. Robert Coultas, Executive Director, Institute for Rapid Transit (1973).

<sup>327</sup> See note 93 *supra*.

<sup>328</sup> DOT, Urban Planning Division, telephone interview, October 11, 1973, with reference to downtown urban area during rush hours.

<sup>329</sup> W. Owen, *The Metropolitan Transportation Problem* 89 (1966).

<sup>330</sup> "Many people do not drive or do not have access to automobiles and cannot afford taxis. About 5 percent of the population is above 70 years of age; another 15 percent is in the 10-17 age bracket. A considerable number in the 17-10 age bracket cannot drive because of physical disabilities or for other reasons." Fitch, *Improving Urban Transportation*, in Williams, note 31 *supra*, at 173. "Public support of auto-highway oriented transportation in urban areas has greatly disadvantaged the poor . . . less than half (of) those with poverty-level incomes (under \$3,000) own an automobile. Most new jobs for unskilled and semi-skilled workers now being created are in the suburbs. The core-city unemployed are, therefore, compelled to use low quality, increasingly costly public transit to seek work and often no transit is available at all. Their economic and social isolation solidifies." Urban Mass Transportation Administration, *Program Background* (April 1972). See also Wilson, *The Goals of Transportation Policy*, in Williams, *supra* note 31, at 38; see also Senator E. M. Kennedy, *Needed: Mass Transit as Well as Highways To Serve the People*, 26 *Lithophilin* 42, 44 (1972).

<sup>331</sup> See text accompanying notes 451-3 *infra*. In addition, new urban rail freight delivery systems are needed. As one student has observed, trucks are an important factor in the unsatisfactory performance of our ground transportation system: "our truck transport system contributes importantly to air, noise, and visual pollution along with its passenger-carrying counterparts, the automobile and the bus. And in our cities, where virtually all freight movements are by trucks, congestion is very much a by-product of freight as well as passenger transport." Lang, *Demand and Supply: The Technology of Transportation*, in Williams, note 31 *supra*, at 47, 55-56.

<sup>332</sup> See text accompanying note 454, *infra*.

<sup>333</sup> One of the participants in a May 1973 Rail Transit Seminar Tour of Western Europe by American industry and government transportation officials said: "Europe is surpassing the United States as far as moving people is concerned. They have technologically outdistanced us and we have little to give them." *Railway Age*, June 11, 1973, at p. 24.

<sup>334</sup> According to the EPA plans, all automobile traffic could be barred from Los Angeles by 1977; in addition, Los Angeles might have to achieve a 60 percent cutback in the use of diesel-powered vehicles by that date. Similar, albeit less drastic, transportation controls were proposed by EPA for application to 16 other metropolitan areas. *Wall St. Journal*, June 18, 1973, at 2.

<sup>335</sup> *Voluntary Public Cutbacks to Conserve Gasoline*, Department of the Interior Press Release, Office of the Secretary, May 1, 1973.

<sup>336</sup> Editorial by Henry Ford II, *New York Times*, *supra*, note 308.

<sup>327</sup> The Washington Post, June 20, 1973, at A6.

<sup>328</sup> Triple-trailer truck trains, which occupy 100 feet of highway, are already in operation in California, Nevada, and Oregon, The Nation, March 5, 1973.

<sup>329</sup> General Motors apparently proposed bus trains as early as 1967 in a study for the Southeastern Wisconsin Regional Planning Commission. General Motors, Metro-Mode: A New Approach to Rapid Transit (1967). The idea was presented subsequently in more detail by the predecessor organization to the MVMA, Automobile Manufacturers Association, the Potential for Bus Rapid Transit (1970). The concept of 1450-unit bus trains and their operation in tunnels is described therein, particularly at 38-56.

<sup>330</sup> R. C. Gerstenberg, Remarks at the National Press Club Luncheon, Washington, D.C., Sept. 22, 1972, p. 8.

<sup>331</sup> See pp. 12-35, supra.

<sup>332</sup> This concept is replicated in S. 1167, the Industrial Reorganization Act, introduced by Senator Philip A. Hart in March of 1973. If enacted, the bill would empower a special Commission to determine for each of seven concentrated industries (including automobiles):

(A) the maximum feasible number of competitors at every level without the loss of substantial economies;

(B) the minimum feasible degree of vertical integration without the loss of substantial economies; and

(C) the maximum feasible degree of ease of entry at every level.

<sup>333</sup> 119 Congressional Record S4361, S4363 (daily ed. Mar. 12, 1973).

<sup>334</sup> For a list of all automobile assembly and component plants, as well as proving grounds and technical centers, owned by these four corporations, see Motor Vehicle Manufacturers Association, Plants of U.S. Motor Vehicle Manufacturers in the United States and Canada (February 1973).

<sup>335</sup> See text accompanying notes 362-363 infra.

<sup>336</sup> For a list of all truck assembly plants, see Ward's 1973 Automotive Yearbook 118.

<sup>337</sup> See note 343 supra.

<sup>338</sup> See, e.g., description of Porsche operations at p. 98 infra.

<sup>339</sup> As of December 31, 1972, General Motors Acceptance Corp. reported assets amounting to \$12.145 billion. Annual report: General Motors.

<sup>340</sup> Since at least 1925, GM has allegedly coerced its dealers into using its finance subsidiary (GMAC). 1956 Staff Report, supra note 200, at 67-76. This practice, which is presumably pursued by Ford and Chrysler as well, has had the effect of injuring competition in the automobile-finance lending market and depriving dealers and the consuming public thereby of access to alternative sources of financing. See, e.g., 1968 Hearings, supra note 54, at 147-151. Separation of these auto finance subsidiaries from their auto manufacturing parents, therefore, would appear to be in the best interest of both dealers and public. *Id.* There is also some evidence that the large size of these companies generates diseconomies of scale. The annual interest cost burden of GMAC and other finance companies in the mid-1950's, for instance, indicated that GMAC's costs were actually higher than those of its major competitors. 1956 Staff Report, supra note 200, at 76. Reorganizing the automakers' finance subsidiaries into several regional corporations, therefore, might be the best method of providing dealers and customers with adequate access to efficient finance alternatives.

<sup>350</sup> 1973 Hearings, supra note 21, at 283.

<sup>351</sup> Statement of ex-GM vice president, John Z. DeLorean in *Fortune*, September 1973, at 266.

<sup>352</sup> Sweden's Volvo and Saab, for example, have introduced team assembly production techniques in their respective automotive facilities. See, e.g., *New York Times*, July 31, 1972, at 37; the *London Financial Times*, Mar. 12, 1973, at 12.

<sup>353</sup> Congressional Record, Apr. 26, 1934, at 7435.

<sup>354</sup> *Id.* at 7434-7439; 1955 hearings, supra note 190, at 4292-4293, 4294, 4305-4307.

<sup>355</sup> Sloan, supra note 114, at 341, 363.

<sup>356</sup> 1955 Hearings, supra note 190, at 4306-4307.

<sup>357</sup> Industry data provided by confidential sources (1973).

<sup>358</sup> See text accompanying notes 345-347 supra.

<sup>359</sup> Industry data provided by confidential sources (1973).

<sup>360</sup> See text accompanying notes 436-454 infra.

<sup>361</sup> The mechanical problems involved in effective industrial reorganization have only recently been explored in the antitrust law and economics literature. See, for example, Baldwin, *Selective Divestiture by Spin-Off and Lottery: A Modest Proposal*, 6 *Antitrust Law & Economics Review* 108 (Winter 1972-73); Pfunder et al., *Compliance With Divestiture Orders Under Section 7 of the Clayton Act: An Analysis of the Relief Obtained*, 17 *Antitrust Bulletin* 19 (Spring 1972); Elzinga, *Mergers: Their Causes and Cures*, 2 *Antitrust Law & Economics Review* 53 (Fall 1968).

<sup>362</sup> Bain, *Industrial Organization*, supra note 2, at 296; Vatter, supra note 56, at 213.

<sup>363</sup> As a result, automobile manufacturers generally distributed their products to independent wholesalers and retailers who resold to the public. FTC 1939 report, supra note 287, at 106-110.

<sup>364</sup> Engaged only in the assembly and sale of completed vehicles, early producers were therefore able to shift the financial burdens of automobile production to owners of already existing capital equipment: the specialized parts manufacturers. L. Seltzer, *A Financial History of the Automobile Industry* 19 (1928); Lanzillotti, supra note 99, at 314. The assemblers were able to reduce their capital requirements further by purchasing parts on credit and then selling cars to dealers on a cash basis. Seltzer, supra, at 20-21; FTC 1939 report, supra note 287, at 108. Many of these firms were able to lower startup costs even further by leasing rather than purchasing assembly facilities. Vatter, supra note 56, at 217.

<sup>365</sup> Of the \$100,000 in stock originally subscribed to by a dozen people, \$72,000 was paid in the form of patents, machinery and supplies. Seltzer, supra note 364 at 88n.5. In 1973 dollars, this entry cost would have amounted to approximately \$139,000. Department of Commerce: Bureau of Labor Statistics, *Purchasing Power of the Consumer Dollar*, Based on the Estimated Consumer Price Index, adjusted by CPI "All Items" July 1973.

<sup>306</sup> The number of assemblers for 1921 is reported in R. Epstein, *The Automobile Industry 176* (1928). Automobile factory sales that year amounted to 1,468,067. Automobile Manufacturers Association, *1971 Automobile Facts & Figures 3* (1972).

<sup>307</sup> In 1972, automobile factory sales amounted to 8,823,938. *Automotive News* (1973 Almanac Issue) 2 (1973).

<sup>308</sup> During the period 1900 to 1915, there were over a hundred assemblers of electric cars, including Detroit Electric Car (1906-23), Woods Motor Vehicle (1913-18), Borland-Grannis (1913-16) and Ohio Electric Car (1910-18). J. Hearings—Electric, supra note 95, at 15; Epstein, supra note 366, at 377-382. Likewise there was a sizable number of steam car assemblers. In 1900, at the first American automobile show, nearly two-thirds of the show space was devoted to steam cars. Seltzer, supra note 364, at 18.

<sup>309</sup> Hearings before the Senate Subcomm. on Antitrust and Monopoly of the Comm. on the Judiciary on Governmental Intervention in the Market Mechanism—*The Petroleum Industry*, 91st Cong., 1st sess. 580 (1969).

<sup>370</sup> A Locomobile Stanley Steamer achieved a top speed of 195 m.p.h. in tests at Ormond Beach, Fla., in 1907. The steam automobile had only 37 moving parts—fewer than the carburetor on some 1972 automobiles. It also would have surpassed the 1975-76 exhaust-emission requirements of the Clean Air Act. National Observer, April 29, 1972, at 1, 16.

<sup>371</sup> Epstein, supra note 366, at 176.

<sup>372</sup> 1958 Report supra note 55 at 8-9.

<sup>373</sup> See note 98 supra.

<sup>374</sup> By 1926, electric car manufacturers had ceased production, although Detroit Electric still made cars on special order in the 1930's. J. Hearings—Electric, supra note 95, at 15; *Automotive News* (1973 Almanac Issue) 24-25 (1973). Locomobile, manufacturer of the "Stanley Steamer", ceased production in 1927. *Automotive News* (1973 Almanac Issue) 24-25 (1973).

<sup>375</sup> "Ever since the drive for a nonpolluting and safer car began, the great, gleaming laboratories of the big auto makers have rolled out a succession of developments, new type engines, and experimental electric cars, all of them seeming to prove only that nothing can soon replace the present, polluting internal-combustion engine—which may be just what the companies wanted to prove." Lessing, *Why the U.S. Lags in Technology*, supra note 78, at 146.

<sup>376</sup> See FTC 1939 Report, supra note 287, at 421-423; Lanzillotti, supra note 99 at 317.

<sup>377</sup> Lanzillotti, supra note 99, at 317. In addition to those listed, the assemblers acquired consisted of Elmore Manufacturing, Ewing Automobile, Marquette Motor, Rainier Motor Car, and Garland Motor. FTC 1939 report, supra note 287, at 442-455.

<sup>378</sup> The 12 additional assemblers acquired were Cartercar, Randolph Motor Car, Welch Motor Car, Chevrolet Motor of Delaware, Chevrolet Motor of California, Chevrolet Motor of Michigan, Chevrolet Motor of New York, Chevrolet Motor of Texas, Little Motor, Interstate Motor Car, Scripps-Booth and Industrial Terminal-Saxon. FTC 1939 report, supra note 287, 442-482. GM's unsuccessful bid to acquire Dodge is alluded to in Lanzillotti, supra note 99, at 321.

<sup>379</sup> FTC 1939 report, supra note 287, at 643 (acquisition of Lincoln); 539-565 (acquisition of Chalmers and Dodge properties); 695 (acquisition of stock control of Lafayette).

<sup>380</sup> GM's pre-World War I automotive acquisitions included W. F. Stewart Co. (1908: bodies), Northway Motor & Manufacturing Co. (1909: motors, transmission, gears), Michigan Auto Parts Co. (1909: motors, transmissions, gears), Saeger Engine Works (1909: motors, transmissions, gears), Weston-Mott Co. (1909: wheels, axles), Dow Rim Co. (1909: wheel rims), Heany Lamp Co. (1910: automotive lamps), Heany Electric Co. (1910: automotive lamps), Tipless Lamp Co. (1910: automotive lamps), Novelty Incandescent Lamp Co. (1910: automotive lamps), Champion Ignition Co. (1910: spark plugs), Jackson-Church-Wilcox (1910: motors, transmissions, gears), and Michigan Motor Castings Co. (1910: motors, transmissions, gears). *Id.*, at 442-482. The original plan of the Ford Motor Co. was to "purchase from various manufacturers the engines, bodies, wheels, tires, and other parts and to assemble these into the complete machines, according to plans worked out by Henry Ford." *Id.* at 625. But Ford reversed this policy and, with the construction of facilities at Highland Park (near Detroit), began intensive inhouse integration upstream into components production. *Id.* 626-633. Chrysler's 1928 acquisition of the assets of Dodge Bros. Inc. included several automotive component production plants. *Id.*, at 554-556.

<sup>381</sup> In addition to the acquisitions listed in note 380 supra, the following automotive parts companies were purchased by General Motors prior to 1937:

Armstrong Spring Co. (1923: auto springs); Brown-Lipe-Chapin Co. (1922: largest manufacturer of differential gears); Crosley Radio-Kokomo plant (1936: auto radios); Day Fan Electric Co. (1929: auto radios); Toledo Chevrolet Motor Co. (1918: transmissions, gears); St. Louis Manufacturing Corp. (1918: auto bodies); Chevrolet Motor Co. of Bay City (1918: motor parts, axles); Jaxon Steel Products Co. (1918: auto parts); Hyatt Roller Bearing Co. (1918: auto parts); Remy Electric Co. (1918: auto parts); United Motors Corp. (1918: auto parts); Dayton Engineering Laboratories (1918: auto parts); New Departure Manufacturing Co. (1918: auto parts).

Also Perlman Rim Corp. (1918: auto parts); Fisher Body Corp. (1926: auto bodies); Ternstedt Manufacturing Co. (1926: auto body hardware, stampings); National Plate Glass (1926: plate glass); Fleetwood Body Corp. (1926: auto bodies); North East Electric Co. (1929: auto electric equipment); Domestic Engineering Co. (1919: electric motors); Harrison Radiator Corp. (1918: radiators); Lancaster Steel Products (1918: auto parts); Saginaw Malleable Iron Co. (1918-20: auto parts); Klaxon Co. (1919: auto parts); Michigan Crankshaft Co. (1919: auto parts); T. W. Warner Co. (1921: auto parts); Guide Lamp Co. (1928: auto parts); Liberty Starter Co. (1932: auto parts); Packard Electric Co. (1932: auto parts).

*Id.* at 458-482.

<sup>382</sup> Sloan, supra note 114, at 167; Seltzer, supra note 364, at 212. By 1928, annual restyling had become an industry practice. Menge has argued that since the mid-1920's "[s]lowly and inexorably a code of behavior based upon rapid periodic style change" drove "the small producers from the industry." "Style Change Costs as a Market Weapon," 76 *Quarterly Journal of Economics* 632, 634 (1962).

<sup>383</sup> Bain, *Industrial Organization*, supra note 2, at 296.

<sup>384</sup> For a firm engaged in both mass production and assembly of annually modified bodies and engines, the optimally efficient output was from 3 to 5 times greater than that required for mere assembly operation. The critical stage in plant economies is found in the production of body and engine components, not in assembly operations. Optimal size for assembly purposes ranges from 60,000 to 180,000 units per year. Integrated optimal production scale requires volumes from 300,000 to 600,000 units per year. Bain, *Barriers*, supra note 3, at 245.

<sup>385</sup> Estimate by Paul Hoffman of Studebaker Corp., 21 TNEC Hearings 11218 (1941).

<sup>386</sup> For a graphic and detailed analysis of the impact of annual style change on small volume producers, see Menge, supra note 382; Snell, supra note 2. One preeminent economist has summarized its significance in the following words:

For smaller auto producers a rapid rate of styling change is almost unambiguously disadvantageous. If they match the giants in frequency of change, they must amortize the fixed costs of redesign and retooling over a smaller volume, suffering substantially higher unit costs. If they change models less frequently, recent experience suggests, they will sacrifice market penetration. For them, the styling rivalry game offers little but negative payoffs. And there is no way for them to escape other than leaving the industry (as the smaller companies have done, one by one) since the rules are dictated by producers willing to accelerate the pace. Scherer, supra note 1, at 340. See also, Blair, supra note 1, at 334-338.

<sup>387</sup> See note 363 supra.

<sup>388</sup> General Motors' policy was propounded in a meeting of its general sales committee on May 4, 1925:

The fact is well-recognized that there is inherent advantage in exclusive dealer representation. Therefore, at all places where volume of business is obtainable and other circumstances permit, the condition of exclusive representation should be insisted upon by each division \* \* \* where exclusive representation is impracticable \* \* \* it is desirable to effect dual representation by coupling up the product of two or more General Motors divisions, rather than with competitive manufacturers.

FTC 1939 report, supra note 287 at 256; the exclusive dealing policies of Ford and Chrysler are described at 252-255.

<sup>389</sup> Id at 257.

<sup>390</sup> Continental sold 3,310 cars in 1933, only 953 in 1934, apparently the last year of production. *Automotive and Aviation Industries*, March 15, 1946, at 88.

<sup>391</sup> See generally, Crandall, "Vertical Integration and the Market for Repair Parts in the U.S. Automobile Industry," 16 *Journal of Industrial Economics* 224 (July 1968).

<sup>392</sup> For the underlying calculations used in this comparison, see Snell supra note 2, at 587-590.

<sup>393</sup> Id.

<sup>394</sup> See, e.g., General Motors, supra note 27, at 71-75; R. Bork and W. Bowman, "Concentration, Oligopoly and Automobiles," paper presented to a meeting of General Motors executives in 1970, at 32-46.

<sup>395</sup> "Moreover, growth beyond a minimum required size does not imply any reduction in economic efficiency. General Motors growth has been accompanied by and continues to generate efficiencies." General Motors, supra note 27, at 74.

<sup>396</sup> *Barriers*, supra note 3, at 245.

<sup>397</sup> G. Maxcy and A. Silberston, "The Motor Industry", 77-84 (1959). Rhys, "European Auto Industry Meets Common Market Challenge," *European Community*, 19 (February-March 1973).

<sup>398</sup> Juergensen and Berg, "European Motor Industry: Mergers Versus Competition," *Intereconomics* 220 (September 1968) (a summary of H. Juergensen and H. Berg, "Konzentration und Wettbewerb in Gemeinsamen Markt—Das Beispiel der Automobilindustrie" (1968), Goettingen).

<sup>399</sup> In 1972, the four automakers' 44 assembly plants produced 8.8 million passenger cars, or an average of 200,000 per plant. Derived from figures reported in *Automotive News* (1973 Almanac Issue) 2, 58 (1973). GM has also announced plans to construct two new assembly plants with annual production levels of about 250,000 cars each. *Wall Street Journal*, Aug. 10, 1973, at 3.

<sup>400</sup> See, e.g., General Motors, supra note 27, at 74-75; White, supra note 52 at 77-87.

<sup>401</sup> Crandall, supra note 15, at 219. See also, J. Menge, "Internal Transfer Pricing and Vertical Integration in the Automobile Industry" (unpublished Ph. D. dissertation, MIT, 1959), at 343-348.

<sup>402</sup> This economist argued that integration may be undertaken at the expense of economies of specialization. To correct this inefficiency, she recommended "vertical disintegration" and cited the auto industry as a likely beneficiary of such a reorganization. Robinson, supra note 15, at 339-340.

<sup>403</sup> The principal early assemblers of trucks are listed in Epstein, supra note 366, at 382-384. Between 1917 and 1936, an estimated 372 truck assemblers exited from the industry. FTC 1939 report, supra note 287, at 85. By 1938, only 63 remained. Id.

<sup>404</sup> General Motors, for example, acquired several truck producers including Rapid Motor Vehicle (1908), Reliance Motor Truck (1909), National Motor Truck (1918), and Yellow Truck (1925). FTC 1939 report, supra note 287, at 449-450, 455; Pound, supra note 163, at 310-317.

In 1930, it also acquired Martin-Parry, then the largest producer of truck bodies. Id., at 315. At least a dozen of the independent car producers eliminated after 1923 maintained truck divisions, including Packard, Studebaker, Graham-Paige, Crosley, Pierce-Arrow, Reo, and Willys. *Automotive News* (1973 Almanac Issue) 26-27 (1973).

<sup>405</sup> See note 145 supra.

<sup>406</sup> In 1922, there were more than 150 manufacturers of buses alone. "Automotive Council for War Production, 20 Years' Progress," supra note 230, at 214. Detailed lists of hundreds of locomotive, streetcar, interurban, and rail car builders are contained in Charlton, "Railway Car Builders of the United States and Canada," *Interurbans*, special No. 24 (1957); I. Arnold, "Locomotive, Trolley, and Rail Car Builders" (1965).

<sup>407</sup> General Motors has dominated bus production since its diversified acquisition in 1925 of Yellow Coach, which at that time was the largest producer of city and intercity buses. See note 17 supra.

<sup>408</sup> In the 1920's, Fageol Motors, Doble Steam Motors and White Motor produced steam buses. J. Rae, *American Automobile Manufacturers* 187 (1959); see note 236 supra. Early manufacturers of electric (trolley) buses included ACF Brill, St. Louis Car, Twin Coach, Brockway, and Cincinnati Car. *Electric Railway Journal*, Jan. 1930, at 37-40. Double-deck buses were first built around 1912; Fifth Avenue Coach, one of the principal manufacturers of this variety of buses, was acquired by GM in 1925 and withdrawn from production. GM-Streetcar, *Findings of Fact*, supra note 163, at 14; Automotive Council for War Production, supra note 230, at 230. Articulated (multiple-unit) buses were first produced by Twin Coach in the 1920's. *Der Stadtverkehr*, Oct. 1972, at 340. Pullman, Brill, St. Louis Car, Barney and Smith Car, Jewett Car, American Car, and Cincinnati Car were among the principal builders of electric streetcars and equipment for high-speed electric interurban trains. See Charlton, supra note 292.

<sup>409</sup> With respect to the city bus industry, for instance, one student has noted: "The urban bus, after all, has undergone little substantial change since the 1930's, except in the dubious matter of becoming bigger." Rae, *The Evolution of the Motor Bus as a Transport Mode*, 5 *High-Speed Ground Transportation* (summer 1971), at 231. Likewise, rail technology has stagnated. Largely as a result, the Federal Government is currently spending more than \$506 million a year to improve the state of bus and rail technology. Data obtained for year 1973 by telephone interviews with personnel of the Urban Mass Transportation Administration and the Federal Railroad Administration, both agencies of the U.S. Department of Transportation.

<sup>410</sup> The combined population of West Germany, France, and Japan amounted to 213 million in 1972. U.S. population that year reached 203 million. In 1971, the United States produced 8.6 million cars. By comparison, West Germany, France, and Japan produced a total of 10.2 million automobiles. *Automobile International*, supra note 59, at 9. The 20 competing automakers which operate production facilities in these three countries are as follows:

West Germany: BMW, Fiat (Germany), Ford, Mercedes-Benz, Opel (General Motors), Porsche, Volkswagen.

France: Alpine, Citroen, Matra, Peugeot, Renault, Simca (Chrysler).

Japan: Honda, Isuzu, Mitsubishi, Nissan, Suzuki, Toyo Kogyo, Toyota.

*Automobile International*, supra note 59, at 4, 8; B. Hake and P. Lynch, *The Market for Automotive Parts in Germany, France and Italy* (1970); National Economic Development Office, *Japan Its Motor Industry and Market* (1971).

<sup>411</sup> See generally, Hake and Lynch, supra note 410, at 29-155; National Economic Development Office, supra note 410, at 96-103, 123.

<sup>412</sup> With the exception of body panels, which it stamps inhouse, Porsche purchases all components outside. Interview, July 1973. Suzuki manufactures only 12 percent by value of the parts which it uses for passenger car assembly. National Economic Development Office, supra note 410, at 99. Moreover, Porsche has distributed its cars in the past through the Volkswagen network. Interview, July 1973; *Christian Science Monitor*, Feb. 11, 1970.

<sup>413</sup> In other words, a single dealer may handle the products of several competing automobile manufacturers. This is commonly referred to in Europe as supermarket operations. Some firms, such as Porsche, contract with others in the use of a common distribution network. Rather than undertaking the tremendous expense involved in integrating downstream into distribution, Porsche has contracted for the use of Volkswagen's wholesale and retail sales organization. Interview, July 1973.

<sup>414</sup> There are well over 300 different models available in the European market. By contrast, the four American automakers produce only 90 models. In addition, the variety of products is far greater in Europe. "The European industry is now making every conceivable kind of motor car, from the tiny Fiat 500 runabout to the enormous Rolls-Royce Corniche or Mercedes 600." *The Financial Times*, Sept. 13, 1972, at 20. The performance alternatives are striking in terms of propulsion systems, for example, diesel (Mercedes), stratified charge (Honda), rotary (Toyo Kogyo, NSU), electric (Daihatsu). "The automotive manufacturers abroad have proved to be more innovative. \* \* \* European braking systems long have been far ahead of those in the United States. Disc brakes on production models were introduced as standard equipment as far back as 1955. \* \* \* Radial ply tires originated in Europe more than two decades ago. \* \* \* Seat belts of the lap variety and later the three-point shoulder harness, were first introduced abroad as standard equipment. \* \* \* Many other innovations—such as computerized fuel injection for air pollution control and energy absorbing steering columns—could be noted." Statement of R. Millet, hearings before the Subcommittee on Antitrust and Monopoly of the Senate Committee on the Judiciary on the *Automotive Repair Industry*, 91st Cong., 1st sess., at 862 (1969).

<sup>415</sup> The tendency to use common, interchangeable components as an alternative to components integration is an increasing phenomenon in Europe. *The Economist*, Jan. 6, 1973, at 50-51. At the same time, European producers have shunned the annual restyling practices of the American automakers. "In recent years, automotive trim on U.S. passenger cars has changed every year, body every 3 years, and engine-transmission every 7 years. These norms stand in marked contrast to European standards, which are double the time cycle. Citroen redesigns its vehicles every 25 years, and other firms such as Volkswagen, Mercedes, and Volvo have stabilized design and tooling over much more extended periods than U.S. manufacturers." Baranson, "Economies of Scale in Automotive Industry," unpublished working paper, Feb. 28, 1973, at 2. See also, Millet, supra note 414, at 861: "Production changes are made from time to time to 'debug' and improve the basic model, but most tooling costs—especially those related to styling—are amortized over 5 to 10 years of production."

<sup>416</sup> See note 104 supra. Daihatsu Kogyo began marketing an electric car in 1972. *The Oriental Economist*, March 1972, at 50. Suzuki announced in May of 1973 that it had developed a three-cylinder, two-cycle engine that would meet U.S. emission standards for both 1975 and 1976. *Automotive News*, May 7, 1973, at 2.

<sup>417</sup> See note 74 supra.

<sup>418</sup> The FLA long-life car was built to last 20 years. According to Porsche engineers, specially chosen raw materials which can be later recycled and new construction methods should help to reach that target durability without making the car too expensive. *Automotive News*, Oct. 1, 1973, at 3.

<sup>419</sup> In 1971, Germany exported 58 percent of its motor vehicles. The Times, March 7, 1972, European Cars, at II. That year, Sweden exported about 67 percent of its cars. Id. at III.

<sup>420</sup> National Economic Development Office, supra note 410, at 145; Automobile International, supra note 59, at 9, 13.

<sup>421</sup> In 1971, for example, the United States exported 35,504 passenger cars abroad, or less than 1 percent of its total production that year of 8.58 million. Automobile International, supra note 59, at 9, 13.

<sup>422</sup> The rotary engine was developed by Dr. Felix Wankel in conjunction with NSU in 1957. That year, NSU produced 16,651 cars. Motor Vehicle Manufacturers Association, 1971 World Motor Vehicle Data 38 (August 1972). Fortune, July 1972, at 76-77, 79.

<sup>423</sup> In 1967, Toyo Kogyo began production of its first rotary-engine car, the Cosmo Sport. Fortune, July 1972, at 77. Soon thereafter, the 110 Mazda rotary car was introduced, followed in 1969 by the Mazda R-100, which was marketed in the United States a year later. Dun's, May 1973, at 142.

<sup>424</sup> See note 418 supra.

<sup>425</sup> In 1972, Porsche produced 14,265 cars. Porsche, Annual Review (Dec. 21, 1972). Nearly all components are bought-in. In fact, 75 percent of all production costs are attributed to purchases from outside suppliers. Interview with Porsche executives, July 1973.

<sup>426</sup> See note 413 supra.

<sup>427</sup> Porsche constructed a Development Center in Weissach (near Stuttgart) in 1971. Research and development was transferred from the company's main facilities in Stuttgart-Zuffenhausen to Weissach so that Porsche could undertake R. & D. for other auto manufacturers, especially Volkswagen, Porsche Presse-Mittellung (press release) (1971). Assembly plant, sheet metal (body) pressing shop and administration building are located in Stuttgart-Zuffenhausen.

<sup>428</sup> According to one trade respondent, "the major production activity of Porsche consists of inspecting the parts they buy, and they buy everything." As reported by Hake and Lynch, supra note 410, at 31.

<sup>429</sup> Interview of July 1973.

<sup>430</sup> See text accompanying notes 396-399 supra.

<sup>431</sup> The 19 competing truck producers (with  $\frac{1}{2}$  percent or more of their respective national markets) are distributed as follows:

W. Germany: Daimler-Benz, Ford, Klockner-H-Deutz, MAN, Opel (GM), Volkswagen.

France: Berliet, Citroen, Peugeot, Renault, Savlem, FFSA.

Japan: Honda, Isuzu, Mitsubishi, Nissan, Suzuki, Toyo Kogyo, Toyota.

Automobile International, supra note 59, at 4, 8. By comparison, only 7 truck manufacturers account for 0.5 percent or more of production in the United States: GM, Ford, Chrysler (Dodge), AMC (Jeep), International, Mack, and White. Ward's Automotive Yearbook 126 (1973). The combined 1971 production of trucks by West Germany, France and Japan amounted to 2,644,769. U.S. production that year reached 2,087,276. Automotive Industries, Aug. 1, 1972, at 42.

<sup>432</sup> Interviews with several European and Japanese truck producers (1973).

<sup>433</sup> Dun's, May 1973, at 144.

<sup>434</sup> Id.

<sup>435</sup> Wall St. Journal, April 25, 1972, at 15; Der Stadtverkehr, November-December, 1972, at 393; Electric Vehicle News, February 1973, at 26, 29.

<sup>436</sup> The 26 bus builders are as follows:

West Germany: Anwärter (Neoplan), Büssing, DüWag, Kassbohrer, K-H-D, MAN, Daimler-Benz, Aero (Ludewig), Orenstein & Koppel, Krupp, Vetter, Waggon Union.

France: Berliet, Citroen, Heuliez, Peugeot, Savie M.

Japan: Toyota, Isuzu, Kawasaki, Mitsubishi, Nissan Diesel, Tokyu Car, Toshiba, Toyo, Naniwa Koki.

Louis T. Klauder & Associates, World Wide Transit Supplies and Manufacturers for 1973, 2, 4-5 (March 1973); various issues of Der Stadtverkehr.

The 23 producers of rail transit cars are as follows:

West Germany: MAN Messerschmitt, Hansa, Linke-Hoffman-Busch, Orenstein & Koppel, DüWag, K-H-D, Schoms, Talbot, Rastatt, Wegman, Waggon Union.

France: MTE, CIMT, Brissonneau et Lotz, Carel Fouché.

Japan: Fuji, Hitachi, Kawasaki, Kisha, Nippon-Sharyo, Retkoku, Tokyu.

Louis T. Klauder & Associates, supra, at 7-11; Jane's World Railways 1971-72. The foregoing list includes producers of light and rapid rail transit cars.

The 33 manufacturers of locomotives are as follows:

West Germany: Krauss Maffel, K-H-D, Linke-Hoffman, Busch, Krupp, Gmeinder, Henschel, Jung, Diema, Orenstein & Koppel, Rhein Stahl, Rohrthaler, Schoma.

France: Alcatel Societe, Brissonneau et Lotz, CFD, CDA/FDL, Compagnie Electro/M, De Dietrich, Decauville, Fives Lille-Cail, Alstom, MTE, ANF-Frangeco.

Japan: Fuji Car, Fuji Heavy Industries, Hitachi, Kakasaki, Kisha Seizo Kaisha, Kyosan Koca, Mitsubishi, Nippon Sharyo Selzo, Teikoku Car, Tokyu Car, Toyo Koki KK.

Significantly, 23 of these firms produce electric locomotives. Louis T. Klauder & Associates, supra, at 12-20; Jane's World Railways 1971-72, supra. This list, moreover, does not include some outstanding nonlocomotive builders of electric trainsets such as Messerschmitt of Germany and Kinki of Japan.

<sup>437</sup> See note 173 supra.

<sup>438</sup> The combined output of these three countries in 1971 amounted to 50,395 buses. Automotive Industries, Aug. 1, 1972, at 42. Daimler-Benz produced 8,047; Toyota accounted for 14,329 (including 4,098 produced by Hino) and Nissan produced 7,647 buses. Der Stadtverkehr, February 1972, at 68; Automotive News (1972 Almanac Issue) at 55 (1972).

<sup>439</sup> Mitsubishi produced 222,890 cars in 1972. Total Japanese production amounted to more than 4 million that year. Automotive News (1973 Almanac Issue) at 50 (1973). Mitsubishi is the third largest Japanese locomotive manufacturer. Letter from Japanese National Railways, dated November 14, 1973.

<sup>440</sup> Congressional Record—Senate, June 23, 1969, at S16826.

<sup>441</sup> Id., at 16827.

<sup>442</sup> Id.

<sup>443</sup> Frankfurt, Cologne, Munich, Essen, Dortmund, Stuttgart, Hanover, and Nuremberg. Several other German cities, including Dusseldorf and Bremen, are expected to begin construction shortly. Id., at 16827.

<sup>444</sup> In Japan, for example, only 8 percent of all intercity travel is by automobile. CBS, *The 21st Century*—script (1973). In Germany and France, approximately 60 percent of all freight moves by rail. Interviews with transportation attachés of German and French embassies (1973).

<sup>445</sup> Paris figure reported in *Ambassade de France, Service de Presse et d'Information*, December 1971, at 4-5. Tokyo figure obtained by telephone interview in April 1973 with W. Owen, senior fellow and transportation specialist of the Brookings Institution.

<sup>446</sup> U.S. Bureau of the Census, *General Social and Economic Characteristics—1970 Census*, at 34-345, 346, 446 (1972).

<sup>447</sup> In the United States, the rail/truck intercity tonnage ratio splits at roughly 54/46 in favor of trucks. Motor Vehicle Manufacturers Association, *1973 Motor Truck Facts 30*. By contrast, in Germany the rail/truck tonnage ratio is split about 60/40 in favor of rails. See note 444 supra.

<sup>448</sup> Daimler-Benz has produced the OE 302 hybrid electric bus. The bus is equipped with both diesel-electric power for use in the open country and pure electric power for use in cities. Man's electric bus (battery powered) is now in daily use on the streets of Koblenz in Germany. OECD, *Bus Optimization in Urban Areas 82* (1972).

<sup>449</sup> Naniwa Koki is a Japanese producer of modern electric trolley buses. Louis T. Klauder & Associates, supra note 298, at 5; Societe Sovel of France has produced electric battery powered buses which are currently in service in French cities.

<sup>450</sup> Auwärter KG, Büssing, and Orenstein & Koppel (Germany) and British Leyland (Great Britain) manufacture double-deck buses; Man and Kassbohrer (Germany) produce articulated (multiunit) buses. Various issues of *Der Stadtverkehr* (1972). Gyrobuses with electric "flywheel" stored energy motors have been produced for use in Yverdon, Switzerland, Ghent, Belgium, and Leopoldville, Congo. Proceedings of the UITP, 39th Congress (1971).

<sup>451</sup> *Railway Age*, Feb. 12, 1973, at 16-17, 27.

<sup>452</sup> Letter from Japanese National Railways, dated Oct. 29, 1973.

<sup>453</sup> *Jane's World Railways, 1971-72*, at 592-593.

<sup>454</sup> Louis T. Klauder & Associates, supra note 436, at 7.

<sup>455</sup> 1955 hearings, supra note 190, at 4294, 4302, 4305-4307.

at 4294, 4302, 4305-4307.

<sup>456</sup> Financial data for TWA, Eastern Airlines, Bendix, and North American-Rockwell (Rockwell Industries) obtained from relevant volumes of Moody's Investment Manuals. Hertz data obtained from annual reports and former Hertz officials.

<sup>457</sup> Hearings before the Subcommittee on Antitrust and Monopoly of the Senate Committee on the Judiciary on Administered Prices, pt. 7, "Automobiles," 85th Cong., 2d sess., at 3861 (1958).

<sup>458</sup> Confidential interviews with former Hertz officials (1973).

<sup>459</sup> Id., see note 465 infra.

<sup>460</sup> Annual report, 1958, at 5-7.

<sup>461</sup> Id.

<sup>462</sup> Confidential interviews with former Hertz officials (1973).

<sup>463</sup> See text accompanying note 460 supra.

<sup>464</sup> Confidential interviews with former Hertz officials; Hertz Corp. annual report, 1958,

at 7.

<sup>465</sup> Calculated from statistics contained in the Hertz Corp. annual reports for years 1954 through 1958.

<sup>466</sup> Hertz Corp. annual report, 1958, at 7.

<sup>467</sup> See note 465 supra.

<sup>468</sup> 1968 hearings, note 54 supra, at 413-414.

<sup>469</sup> Hearings, "Administered Prices—Automobiles," note 457 supra, at 2893, 2895.

<sup>470</sup> Id., at 2503.

<sup>471</sup> Confidential interview with former Department of Justice official (1973).

<sup>472</sup> See note 490 infra.

<sup>473</sup> *New York Times*, Sept. 22, 1971, at 65.

<sup>474</sup> The Department of Justice or Federal Trade Commission might sue to enforce the proposed reorganization based on the numerous violations of the Sherman, Clayton, and FTC antitrust acts set forth in this memorandum. Corporate violations of these statutes have been held by the Supreme Court to constitute proper grounds for the type of structural reorganization advocated here when other remedies alone could not adequately dissipate undue market concentration and restore competitive conditions. E.g., *United States v. American Tobacco Co.*, 221 U.S. 106 (1911) and *United States v. Grinnell Corp.*, 384 U.S. 563 (1966) (Sherman Act, sec. 2 cases); *United States v. du Pont (GM-du Pont)*, 366 U.S. 316 (1961) (Clayton Act, sec. 7 case); and *Pan American World Airways v. United States*, 371 U.S. 296, 312 n. 19 (1963) (re FTC's remedial authority under sec. 5 to effect structural reorganization). When divestiture alone was insufficient to restore competitive conditions, the courts have ordered additional relief, such as the incorporation of new enterprises. See *United States v. United Fruit Co.*, 1958 Trade Cases at para. 73,790 (E.D. La.); and *United States v. Peabody Coal Co.*, 1967 Trade Cases, para. 84,376 (N.D. Ill.).

<sup>475</sup> See *United States v. General Motors Corp. et al.*, Civ. 18895 (N.D. Ohio: 1946) (ball bearings); *United States v. Brake Lining Manufacturers Association* (three separate complaints all filed in S.D.N.Y. on Aug. 21, 1947) (Cr. 126-205: clutch facings) (Cr. 126-206: brake linings and clutch facings) (Cr. 126-207: brake linings).

<sup>476</sup> *United States v. E. I. du Pont de Nemours & Co.*, 366 U.S. 316 (1961).

<sup>477</sup> *United States v. General Motors Corp.* (N.D. Ohio), 1968 Trade Cases at para. 72,356.

<sup>478</sup> *United States v. General Motors Corp.* (E.D. Mich.), 1965 Trade Cases at para. 71,624.

<sup>479</sup> On Dec. 28, 1964, the Government's motion to nolle prosequi the criminal suit was granted. Subsequently, on June 2, 1967, the Government's motion to dismiss the civil action was granted.

<sup>480</sup> See note 264 supra. On October 16, 1972 Senator Edward M. Kennedy asked the Attorney General of the United States to initiate an investigation of General Motors' involvement in metropolitan transportation. He based his request upon a legal memorandum prepared by attorneys Theodore W. Kheel and Bradford C. Snell. More specifically, he

stated that General Motors' common control of automobile, bus and locomotive production "would seem to constitute a serious conflict of interest and a continuing violation of the antitrust laws." He noted that the large numbers of cars displaced by a single bus or train naturally discouraged General Motors from selling improved bus and rail equipment. "In sum, our bus and locomotive industries are entrusted to an automobile manufacturer which may profit from their decline." He concluded by recommending that the Attorney General either reopen the earlier cases brought against GM's control of bus and locomotive production or file a new suit under the antimerger provisions of the Clayton Antitrust Act. Letter to Attorney General Richard G. Kleindienst, dated October 16, 1972. No substantive reply has been forthcoming from the Department of Justice.

<sup>481</sup> United States v. Yellow Cab et al., 332 U.S. (1947) 218. The Department of Justice, however, has obtained structural relief against Chrysler's proposed acquisition of Mack Trucks (United States v. Chrysler Corp., Civ. 9 N.D. Ind. filed 1938); and against Ford's acquisition of AutoLite (United States v. Ford Motor Co., Civ. 21911 E.D. Mich. filed 1961).

<sup>482</sup> This dichotomy emerged from interviews with the Antitrust Division attorneys who were involved in GM litigation during the period 1946-1973.

<sup>483</sup> Confidential interviews 1972-1973, with former Department of Justice officials.

<sup>484</sup> 126 F. Supp. 235 (ND Ill. 1954).

<sup>485</sup> Confidential interview of July 5, 1972, with former Department of Justice official.

<sup>486</sup> Confidential interview of July 7, 1972, with former Department of Justice official.

<sup>487</sup> Confidential interview of August 3, 1972, with former Department of Justice official.

<sup>488</sup> Confidential interview of December 4, 1972, with former Department of Justice official.

<sup>489</sup> In re Grand Jury Investigation (General Motors Corp.) 174 F. Supp. 393, 395 (SD N.Y. : 1959) : confidential interview with former Department of Justice official on December 11, 1972.

<sup>490</sup> Wall Street Journal, Oct. 31, 1967, at p. 1.

<sup>491</sup> Internal Department of Justice memorandums.

<sup>492</sup> Internal Department of Justice memorandums.

<sup>493</sup> See notes 65 & 153 supra.

<sup>494</sup> Confidential interview of July 6, 1972, with former Department of Justice official.

<sup>495</sup> See e.g., "Antitrust Reorganizes for More Action," Business Week, Nov. 10, 1973 at 142.

<sup>496</sup> Department of Transportation, National Highway Traffic and Safety Administration, Summary Description of All Federal Motor Vehicle Safety Standards (September 1973).

<sup>497</sup> E.g., the Advanced Automotive Power Systems Development Division of the Office of Air Programs, within the Environmental Protection Agency, is currently engaged in the development of low pollution automotive engines.

<sup>498</sup> For fiscal year 1973, UMTA and FRA received \$506 million for research, development and production of buses, rail transit cars and trains. See note 409 supra.

<sup>499</sup> DOT, UMTA press release UMTA 72-66, Aug. 15, 1972.

<sup>500</sup> The prospect of nationalization is not remote. Several Western European nations have nationalized substantial segments of their economy including, in certain cases, the manufacturing sector. Great Britain is currently contemplating an extensive program of nationalization. Some countries have chosen to nationalize rather than reorganize their industries. The concentration of control over ground transportation and other vital areas of economic activity in one firm (Fiat), for example, has prompted the Italian government to nationalize what remains of the economy in an effort to achieve a position of countervailing power. As a result, Fiat reportedly controls 40 percent of Italy's industrial base including 80-90 percent of its automobile, bus, and locomotive production; and the government controls most of the remainder. In retrospect, the Italians' decision to seek countervailing through nationalization rather than deconcentration through industrial reorganization may not be workable. When the government ordered Fiat to control the pollution emitted from its myriad factories, for instance, Fiat reportedly threatened to move to Yugoslavia and to bring down the government. As a result, the government retracted its demand.

Recently, the clamor for nationalization has increased in this country. Some prominent men now suggest that the only way to resolve the Nation's ground transportation crisis is through public ownership. See, for example, Commoner, "Trains Into Flowers," Harpers, December 1973, at 78-86 (an argument for the nationalization of America's railroads). Presumably, if nationalization of these transport services were undertaken and it failed to correct our imbalanced ground transportation system (a very likely possibility), others would propose nationalization of those industries responsible for producing ground transport equipment: The automobile, truck, bus and rail industries. Already, the Federal Trade Commission considers the auto industry as a public utility:

The Commission believes it is clear that, in present-day America, the automobile industry is no less a public utility than the other transportation industries. Effective action must be taken, at every level of Government, to bring quality control and performance standards to this public utility industry.

PTC, "Report on Automobile Warranties" (February 1970), p. 124. With due regard to this Nation's commitment to free enterprise, industrial reorganization is arguably a preferable alternative. See generally, the Industrial Reorganization Act, S1167, 93d Cong., 1st sess. (Mar. 12, 1973), and the accompanying statements of its author, Senator Philip A. Hart, in the Congressional Record, July 24, 1972, at S11494 et seq. (These statements were made at the time the same bill was filed in the 92d Cong. 2d sess.)

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THE TRUTH ABOUT  
"AMERICAN GROUND TRANSPORT"—  
A REPLY BY GENERAL MOTORS

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THE FIRST REPORT  
OF THE  
COMMISSIONERS OF THE  
LAND OFFICE

## THE TRUTH ABOUT "AMERICAN GROUND TRANSPORT"—A REPLY BY GENERAL MOTORS

(Submitted to the Subcommittee on Antitrust and Monopoly of the Committee on the Judiciary of the United States Senate, April 1974)

### INTRODUCTION

At the initial round of hearings on the automobile business, this subcommittee received a document, prepared by a staff attorney, Bradford C. Snell, entitled "American Ground Transport: A Proposal for Restructuring the Automobile, Truck, Bus, and Rail Industries." This document in its entirety has no real bearing on the issues raised by the Industrial Reorganization Act, but because wholly unfounded accusations in it have been widely publicized to the damage of General Motors, the record must be set straight.

The two most widely publicized charges were that General Motors aided the Nazi government during the Second World War and that General Motors deliberately sabotaged the rail transportation capability of the United States. It is claimed further that this destruction was accomplished by a farsighted plot, extending over decades, under which GM first coerced rail carriers into abandoning electric vehicles for diesel locomotives and buses, and then cleverly made its diesel products as unattractive as possible so that people would have no choice but to buy cars.

We do not attempt to refute each and every statement contained in "American Ground Transport." This paper will focus on the facts with respect to those basic propositions upon which the whole argument turns. These are: (1) The claim that General Motors coerced railroads into buying unwanted diesel locomotives by capitalizing on its position as a large shipper and (2) the claim that General Motors was responsible for the destruction of thriving street railway systems. Since these basic propositions are shown to be untrue, the entire argument advanced in "American Ground Transport" falls.

This memorandum consists of four major parts. Part I refutes the claims that have been made about World War II. Part II deals with the long-refuted claim that GM "forced" the railroads to buy its diesel locomotives. Part III answers the erroneous charge that General Motors "destroyed" thriving street railway systems. Finally, part IV refers to various additional misstatements contained in "American Ground Transport."

Although "American Ground Transport" has not been endorsed by this subcommittee or by any individual on it, the document has been widely publicized as the work of a subcommittee staff member and may be construed as bearing the imprimatur of the subcommittee. The false accusations, misleading inferences, and erroneous conclusions which it contains have been repeated across the country, to the damage

of General Motors, in newspaper stories, in national television broadcasts, and in public statements by the mayors of two great cities. Attached as an appendix to this reply are samples of newsstories based on "American Ground Transport" which have appeared in recent weeks.

We submit that this has created an unfortunate situation whereby General Motors has in effect been indicted publicly without proper means of rebuttal. In an effort to remedy this unusual situation in a fair and equitable manner, we suggest that the subcommittee, upon due deliberation, take the following action—

First: that all further distribution of "American Ground Transport" be suspended at this time:

Second: that this reply by General Motors be printed in the same manner as "American Ground Transport" by the Government Printing Office; and

Third: that this reply should immediately follow "American Ground Transport" in the published record of these proceedings and should be bound with it if any further distribution by the subcommittee is undertaken.

#### PART I.—GENERAL MOTORS DID NOT ASSIST THE NAZIS DURING WORLD WAR II

Since it has no relevance at all to the Industrial Reorganization Act, it is hard to understand why the discussion of the Second World War in "American Ground Transport" was inserted. This document makes the extraordinary claim that General Motors (and Ford) actively assisted the Nazi war effort.

The former employees of General Motors who have been slandered by these statements are, for the most part, no longer here to defend themselves. Fortunately, they are adequately defended by the record.

In the years prior to 1939, Adam Opel (a GM subsidiary since 1929) had produced only its traditional products—cars, trucks, and spare parts. After the German invasion of Poland in 1939, the American personnel resigned from management position rather than participate in the production of war materials, even though at this time the United States was neutral. The General Motors Annual Report for 1939 states:

As a result of the declaration of war, and in line with the corporation's operating policies, with full recognition of the responsibility that the manufacturing facilities of Adam Opel A.G. must now assume under a war regime, the corporation has withdrawn the American personnel formerly in executive charge of this operation. \* \* \*

With these resignations, though it temporarily retained nominal representation on the board, GM relinquished effective control over the day-to-day operations of Opel. As early as October 1939, the German Government had prohibited the transmittal of financial or operational reports from Opel to General Motors.

The last of GM's American employees who had been assigned to Opel departed from Germany in early March 1941. A meticulous search has disclosed no communications whatsoever between Opel and General Motors Corp. after September 2, 1941.

Following the German declaration of war on the United States on December 11, 1941, the relationship with Opel was entirely severed. No

Americans sat on the board of directors, even nominally, after that time. In 1942, a German custodian was formally appointed by the Reich Commissioner for Treatment of Enemy Property.

Opel, while under GM control, possessed no special aircraft product technology. The product development and engineering required for the production or assembly at Russelsheim of aircraft parts for the JU-88 medium range bomber, and, later the jet engine of the ME-262 jet fighter, was supplied by German aircraft and aircraft components firms. The German Government brought this German aircraft technology, including know-how, into the Opel plant to build the products of war. GM has nothing whatever to do with the design and development of those aircraft and engines pictured in the document presented to this subcommittee (and in any event no complete aircraft were built at the Opel facilities).

As the war drew to a close, the Russian army occupied what remained of the Opel facility at Brandenburg. (Brandenburg happened to be in the Soviet Zone of occupation, later to become East Germany.) The Russians dismantled the plant and shipped all machinery and equipment by rail to Kutau in the Russian Caucasus. The dismantling even included removal of portions of the buildings. (It should be noted that the Potsdam Agreement of 1945 specifically provided that the Soviets could satisfy their claims against Germany by removing property from the Soviet Zone.)

In light of these facts, the claims that General Motors "became an integral part of the Nazi war efforts" (p. 17); that "GM \* \* \* was in complete management control of its Russelsheim warplane [sic] factory for nearly a full year after Germany's declaration of war against the United States" (p. 22); and that GM American personnel served on the Opel board of directors "throughout the war" (p. 85, fn. 135) are totally false.

The unqualified statement that "GM's plants in Germany built thousands of bomber and jet fighter propulsion systems for the Luftwaffe" (p. 17) and that since the war, "GM's truck plant in Brandenburg, East Germany \* \* \* [has] more than likely become [a] substantial" factor in the Communist economy (p. 22) without any mention of the fact that GM has or had nothing to do with these operations, is totally misleading.

The further charges that GM and other firms "could determine \* \* \* which belligerent would benefit from their latest advances in war-related technology" (p. 17); that they "were able to shape the conflict to their own private corporate advantage" (p. 17); that it served their "best interests \* \* \* to cooperate in the Axis war effort" (p. 22); and that if the Germans had won the war GM "would have appeared impeccably Nazi" (pp. 22-23) have no foundation in fact and are totally irresponsible.

These charges that General Motors assisted the Nazis in World War II are entirely irrelevant to the issues before the subcommittee. Yet, for some reason, they are illustrated with the only photographs in the entire document. If the purpose was to attract publicity, irrespective of the facts or their relevance, it succeeded—at the cost of assaulting the good name and memory of many former employees of General Motors whose patriotism and undivided loyalty to the United States is evidenced by the record.

PART II.—GENERAL MOTORS DID NOT SUPPRESS RAIL TRANSPORTATION  
WITH THE DIESEL LOCOMOTIVE; IT ADVANCED IT

The argument that GM repressed railroad transportation is introduced by and is entirely dependent upon the following unqualified assertion:

As the Nation's largest shipper of freight, GM was able to exert considerable influence over the locomotive purchasing policies of the Nation's railroads. It used this powerful form of leverage to sell its diesel locomotives (pp. 38-39).

This statement is crucial because it is the cornerstone of the claim that GM foisted inferior mass transportation equipment on unwilling carriers, to the detriment of the Nation's entire transportation system.

The author must have known, because he refers to the fact elsewhere (p. 75), that the U.S. Department of Justice has conducted an exhaustive investigation of this very matter. In fact, it did so for a period of over a decade in the administrations of three Presidents of both political parties. Hundreds of witnesses were interviewed and thousands of documents were examined; in the end the prosecutors concluded—not once, but twice—that they had no case. The charge that GM used freight to sell locomotives was (we thought) finally laid to rest when the Government moved to dismiss the sole remaining case, with the following statement which is a matter of public record:

Plaintiff recently completed an extensive review and re-evaluation of the available evidence. Based upon this re-evaluation it is plaintiff's view that the available evidence is insufficient to establish the violations alleged. [*United States v. General Motors* (locomotives), Civ. No. 63 C 80 (W.D. Ill. June 2, 1967).]

One would think that anyone who now disinters these abandoned charges would at least acknowledge this past history when he does so. Moreover, if he asserts them as truth in aid of a crucial proposition, should he not also come forward with some convincing demonstration that the prosecutors made a mistake? What is offered instead are a grand total of five references which, even if substantiated, would hardly prove a nationwide course of conduct lasting for decades and which, in fact, cannot survive even cursory scrutiny.

The reference to the Gulf, Mobile & Ohio Railroad (p. 39) is supported only by unproven allegations in the indictment in the Government criminal case which was voluntarily abandoned! The reference to the Baltimore & Ohio Railroad (p. 39), which is set forth to give the appearance of being a quotation from a letter, but isn't, is supported only by one of the author's ubiquitous confidential interviews! Note also that, even if the quotation were genuine, it would not establish that GM sold locomotives through reciprocity—only that a railroad president tried to obtain freight business that way.

The charge that GM "reportedly used its freight leverage to coerce the [New Haven] railroad into scrapping all of its electric passenger and freight locomotives in favor of GM diesel passenger units" (p. 40) is again supported only by a confidential interview. Moreover, Harold L. Smith, currently general manager of the electro-motive division, points out in his statement<sup>1</sup> that the New Haven never scrapped all of its electric locomotives anyway—its successor operates them today. Finally, the charge is belied by the fact that the overwhelming

<sup>1</sup> This statement, dated Apr. 10, 1974, has been submitted to the subcommittee.

majority of the diesels which were initially ordered by the New Haven were supplied by GM's competition. As of the end of 1956, the year in which the author claims GM induced the New Haven to switch to diesels, only 50 out of the road's 400-odd diesels were General Motors units—and these 50 diesels were all yard switchers and freight locomotives, which hardly could advance a plot to divert passenger traffic!<sup>2</sup>

The fourth reference in fn. 256 to "standing instructions" issued on freight shipments in 1935, when read in its entirety, makes it clear that routing is to be based on merit. This is entirely consistent with the instruction which GM's president, Alfred P. Sloan, Jr., issued earlier in the year that freight shall be routed and locomotives shall be sold solely on their separate and individual merits. See "The Locomotive Industry and General Motors" 48 (1973).

The fifth reference, upon which the author seems to place great reliance because he mentions it first in the text, is not specific, but nonetheless the most misleading of all. In some manner unknown he obtained a copy of a privileged memorandum from the files of GM's outside law firm in the locomotive litigation. This memorandum, entitled "Reciprocity as Proof of the Offense of Monopolization Under Section 2 of the Sherman Act" contains 73 pages. The author of these charges against GM has relied on a single speculative sentence from the memorandum (p. 39, n. 258) and the significance of this single sentence is totally distorted by its removal from context. Reproduced below is the sentence quoted by the author and the *very next sentence* (italized for emphasis) in the same legal memorandum which makes it clear that the speculation had no basis in fact.

GM could, in all probability, have successfully capitalized upon the railroads' sensitivity to reciprocity by frequently reminding them of GM's considerable traffic, and could have done so without ever interfering substantially with the economical routing of traffic. [*The fact that GM did not do so, while EMD's competitors did engage extensively in reciprocity, appears to be a tribute to the strength of GM's policy against reciprocity.*] (P. 68.)

The author's accusation that GM used its position as a large shipper of freight to sell locomotives has not been sustained. When it collapses, the author's thesis that GM has impeded the development of railroad transportation in the United States collapses as well. But, one can go further and demonstrate that GM has made a positive contribution to the welfare of the railroads.

The significant contribution which General Motors made through its pioneering development of the diesel locomotive is a story that has been often cited as one of the great success stories of American competitive enterprise. It is set forth at length in the booklet "The Locomotive Industry and General Motors" which was supplied to the subcommittee a year ago and which is submitted for the record at this hearing. It is summarized in the statement of Harold L. Smith, also submitted at this hearing. It is perhaps best summed up in the 1956

<sup>2</sup> Snell's specific testimony about the New Haven, in response to a question from Senator Hruska, reads as follows:

"... General Motors came in [to the New Haven] in 1956 and said, 'Look you'll have to scrap all of that equipment, because we're your largest shipper of freight and we're selling GM diesel locomotives and you should buy GM diesel locomotives.'" (Transcript hearings, Feb. 26, 1974, at p. 137.)

This testimony is a total fabrication.

staff report of this subcommittee (then sitting under Senator O'Mahoney) which stated:

... The diesel locomotive revolutionized the railroad industry. General Motors can point to its entry into this field as an example of the operation of a progressive company at its best—entry into a new field, with a new product satisfying an economic need, and offering progressive reduction in the pricing of its product. [S. Rep., No. 1879, 84th Cong., 2d sess. 35 (1956).]

Or, as one railroad president put it:

The greatest single contribution to the economic and efficient operation of our railroads during my 40 years of association with the industry has been the development of the Diesel locomotive. [James M. Symes, president, Pennsylvania Railroad, in 1955.]

Another railroad president testified on the initial diesel freight locomotive as follows:

... here we had the ultimate. Here was an engine that in my judgment outperformed anything we had in the country. I just made up my mind to two things right now: That the day of the steam engine was history; that I owed a debt of gratitude to the fellows that made that all possible, and that was your company, my good fellow, General Motors. [Fred Gurley, former chairman, Santa Fe Railroad, deposition, p. 144, civil Locomotive case.]

As the Government knew when it decided to dismiss the *Locomotive* cases, chief executives of other railroads throughout the country were prepared to give similar testimony had the cases gone to trial.

#### PART III.—GENERAL MOTORS DID NOT DESTROY STREET RAILWAY SYSTEMS; THEY FAILED EVERYWHERE BECAUSE THEY WERE NO LONGER ABLE TO GIVE ADEQUATE SERVICE

For those who seek simple explanations for complicated urban problems, "American Ground Transport" provides a convenient scapegoat, General Motors, which is charged with the "destruction of more than 100 surface rail systems" which caused a "devastating impact . . . on the quality of life in American cities" (p. 2). It also provides a simple cure, namely the forced ouster of General Motors from the mass transportation business, presumably to clear the way for the return of the street car.

Although the accusations against General Motors appear to be detailed and complex, their truth can be tested (as it was in locomotives) by examining the fundamental claim on which the whole argument turns. If the street railway systems in this country were not the thriving and effective enterprises that the author claims, then their demise can hardly be blamed on General Motors and their return can hardly be the panacea for the future.

We will set forth in this section the facts about the street railway systems in those cities which the author himself has selected as the prime exhibits in support of his argument. Examination of those facts will show that street railways failed for economic and demographic reasons which had nothing to do with any plot by General Motors.

The fact that General Motors provided a modest amount of financial assistance (without any managerial control) to National City Lines, which had interests in some transit operations, did not have any effect on their decisions to convert from streetcars to buses. Since, however,

the author has placed considerable emphasis on the investment in National City Lines and on the National City Lines litigation, it is necessary at the outset to place those matters in perspective.<sup>3</sup>

General Motors did not invest in National City Lines or any of its affiliated companies because it was interested in obtaining control over the operating decisions of transit operators. *National City Lines v. U.S.*, Supreme Ct. Rec. (hereinafter "CR") 516-17, 568-69, 629-44. In fact, it would have preferred not to invest in National City Lines at all. City Lines was a customer which had borrowed \$150,000 at the time it was first organized in 1936, but repaid the loan in 3 months after a public stock sale. (CR 461-778.)

Thereafter, the investment of \$500,000 which GM made in National City Lines in 1939, and subsequent investments in American City Lines (a National subsidiary), in 1943, and Pacific City Lines (beginning in 1938 when that company was also a National subsidiary), were made at the request of those companies, which had experienced difficulties raising money from other sources.<sup>4</sup> (CR 469-70, 489, 781-793.) Similarly, partial requirements contracts for GM buses were only negotiated after the customers themselves had requested them. (CR 789, 799.)

Notwithstanding the fact that the investments and the partial requirements contracts were negotiated at the request of National City Lines and notwithstanding the fact that General Motors' share of the City Lines' business was lower after the contracts than it was before, these contracts were found to be an antitrust violation. It is this to which the author and other witnesses have so repeatedly referred as the means GM used to eliminate streetcars.

The important thing, however, is not that the violation which was found involved a close point of law,<sup>5</sup> but rather that it had nothing at all to do with the replacement of streetcars by buses.<sup>6</sup> There is not one word in either the Government indictment in the criminal case or the complaint in the companion civil case which charges GM with unlawfully scrapping or eliminating street railway systems.

As pointed out in the opinion of the Seventh Circuit Court of Appeals, *U.S. v. National City Lines*, 186 F.2d 562, 564 (1951), GM and the other defendants were acquitted of the charge that they had conspired "to secure control of a substantial number of the companies which provide public transportation service" in various parts of the

<sup>3</sup> The source for this brief summary (unless otherwise indicated) is the statement by General Motors printed in "Hearings, Senate Subcommittee on Antitrust and Monopoly, Committee on the Judiciary," 84th Cong., 1st sess. 3919 (1955), and also placed in the record at these hearings.

<sup>4</sup> The grand total of GM's investments in all three companies was only \$2.9 million.

<sup>5</sup> In the *National City Lines* civil case, the court said:

"Whether or not these practices are illegal under the antitrust laws turns upon nuances of circumstances which cannot be foreseen or determined in advance of the event.

\* \* \* \* \*

"... the failure to cancel these arrangements as soon as they were called into question by the Government is also consistent with a bona fide belief of the defendants that there was nothing unlawful about the arrangements and the court is not prepared to say that in the state of the law at the time the complaint was filed this belief could not reasonably be entertained." (*United States v. National City Lines*, 134 F. Supp. 350, 360, 362 (N.D. Ill. 1955).)

<sup>6</sup> The author seeks to reinforce the misleading impression that the *National City Lines* case involved an illegal conspiracy to substitute bus for rail transportation, by referring to the Government's appellate brief in the case throughout as the "U.S. Streetcar Appellate Brief" (see fn. 200).

country. The case therefore lends no support to the contention that it was GM, through National City Lines or affiliates, who induced these companies to abandon streetcars. Moreover, the opinion in the case actually pinpoints the basic flaw in the current accusations that General Motors, for ulterior motives, destroyed healthy streetcar systems:

In 1938, National conceived the idea of purchasing transportation systems in cities *where streetcars were no longer practicable* and supplanting the latter with passenger buses. [186 F.2d at 565; emphasis supplied.]

The statement in "American Ground Transport" that "GM extracted" contracts from transit companies requiring the purchase of gasoline-fueled equipment (p. 31) is similarly false. (It is also implausible on its face because the diesel buses, which GM was trying to sell, do not run on gasoline.) The only contract containing such a provision (which apparently was the basis of the Government's accusation) was negotiated by a midwestern oil company; GM had nothing whatever to do with it. *National City Lines v. United States*, Gov't Ex. No. 84, CR 637, 791, p. 1291. Moreover, this supply contract did not apply at all to any cities in the State of California, which the author cites at page 31 as his prime examples of the ruin supposedly wrought by GM.

It is appropriate to turn now to the facts about Los Angeles.

#### LOS ANGELES

The author claims that in 1939 Los Angeles was served by the "quiet" and "efficient" Pacific Electric interurban electric railway system. This system, he asserts, was complemented by the Los Angeles Railway, which operated streetcars in the downtown area.

In 1936, he charges, GM had organized National City Lines, a "holding company to convert the remainder of the Nation's electric transportation systems to GM buses" (p. 30). Then in 1940, he claims, National City Lines, acting through affiliated companies, and Standard Oil of California "began to acquire and scrap portions of the \$100 million Pacific Electric System including rail lines from Los Angeles to Glendale, Burbank, Pasadena, and San Bernardino." Then "having severed Los Angeles' regional rail links," he claims that "GM and its auto-industrial allies \* \* \* motorized its downtown heart," by converting the Los Angeles Railway system from streetcars to buses (p. 31).

The story sounds dramatic, but what are the facts? The truth is that both the Pacific Electric and the Los Angeles Railway began to abandon streetcars before GM was even in the bus business and long before National City Lines or any of its affiliated companies were even organized. Moreover, National City Lines had nothing whatever to do with severing "regional rail links," as the author claims.

Pacific Electric commenced the progressive abandonment of its own rail passenger service as early as 1917, fully 23 years before it is claimed that GM (and its "allied highway interests") "began to acquire and scrap portions of the \$100 million Pacific Electric System" (p. 31). As reported in "Duke, Pacific Electric Railway" (*Pacific Ry. Journal* 1958) at p. 7:

*The establishment of bus lines as a substitution for unprofitable rail service began in 1917. The first line for replacement was the San Bernardino-Highland-Patton line. Other lines followed in the next few years including the local lines in Long Beach, Pasadena, Santa Monica, Redlands and San Pedro. The Redondo*

Beach line passed in the late 1930's as well as the Alhambra-San Gabriel-Temple City lines and the Glendale-Burbank line. Service on the high speed 57-mile San Bernardino line was cut back to Covina. Things were black for the 'Big Red Cars.' *Times were changing in Southern California and since PE could not provide proper rapid transit, it had no alternative but to change with the times.* [Emphasis added.]

According to a history prepared by its former general attorney, the bus passenger mileage operated by Pacific Electric amounted to approximately 15 percent of the total mileage as early as 1926.<sup>7</sup> By 1939, the year before it is claimed that GM had any role in acquiring part of the system, over 35 percent of the total passenger miles were on buses. Pacific Electric steadily expanded its motorbus operations in the 1920's and 1930's. "Karr, Rail Passenger Service History of Pacific Electric Railway Co.," app. B (unpublished paper 1973). Further:

The motor transit company which served local areas and reached as far as Bakersfield, Victorville, and San Diego was partially absorbed into the PE system in 1930. By 1936 PE had purchased all interest owned by Greyhound and the lines were wholly merged into the PE bus system." ("Duke," *supra*, at 7.)

It is undisputed that the rail passenger operations of Pacific Electric were a financial catastrophe. Thus, Karr reports:

*The Rail Passenger Losses*

The rail passenger operations were never profitable with the exception of the year 1923 and the war years of 1943 and 1944. During those two war years rail passenger service was profitable; however, by 1946 the annual loss was \$2,200,000. In 1947 the loss climbed to \$3,426,000, and this loss was incurred on a gross rail passenger revenue of approximately \$10.5 million. If these amounts are converted into today's costs, the amount of loss is not only substantial but simply impossible for private enterprise to bear." ["Karr," *supra*, at 16.]

In 1940 the California Railroad Commission (predecessor of the public utilities commission) in a decision which inter alia granted the application of the Pacific Electric Railway to abandon portions of its railway lines altogether and substitute bus service on other portions, stated:

Most elementary dictates of good business require that an industry stand on its own feet and earn sufficient compensation for the service rendered to offset the cost incurred in providing such service. Over a period of many years Pacific Electric has not been operated on such a basis. . . . Collapse of the financial structure of Pacific Electric is inevitable without outside financial assistance if operations are continued on the basis as experienced during past years.

\* \* \* \* \*

*One of the logical sources of reduced costs is substitution of motor coach service for rail lines which were constructed at large investments and designed to carry traffic far in excess of that which now presents itself.* [Decision No. 33088, dated May 14, 1940, at 631-32; emphasis added.]

The conversion of rail to bus operation was interrupted during the war, but resumed thereafter. In 1950, the California Railroad Commission authorized the substitution of bus service for rail on nine major lines serving outlying communities. Again, the Commission's opinion is instructive. It concluded that the company "cannot continue to operate its outmoded and obsolete rail facilities at the losses indicated in this record" and continued:

<sup>7</sup> Separate statistics are not available prior to that time.

... we find it to be in the public interest to authorize the changes in service as provided in this decision. In so doing, we are taking into account applicant's commitment to provide new, modern motor coaches to replace the rail passenger facilities.

\* \* \* \* \*

The record clearly shows that the passenger rail operations of applicant have been conducted at a loss over a long period of time. *On the other hand, its motor coach service has been operated at a profit.* [Decision No. 44161, dated May 9, 1950, at 661-662; emphasis added.]

Noting the nationwide scope of streetcar companies' problems, the Commission continued:

*In reaching the foregoing conclusions, we have in mind the very serious financial and service problems which have been experienced since the war by practically all metropolitan mass transit utilities, including those publicly operated. The war apparently served to delay, but failed to halt, a definite trend toward abandonment of surface rail facilities in congested metropolitan areas and the substitution of motor coaches.* [*Id.*, at 662; emphasis added.]

This story could be continued into subsequent years, but we believe the point has been adequately made. It might be worthwhile to add, however, that the conversion from streetcar to bus operations continued into the 1950's and 1960's when the system was run by Metropolitan Coach Lines, which had no connection whatever with GM, and later by the Los Angeles Metropolitan Transit Authority, a public agency. See, for example, decision No. 50447, dated August 17, 1954; decision No. 54531, dated February 11, 1957. Los Angeles Metropolitan Transit Authority, Annual Report 1963.

The author ignores the fact that Pacific Electric itself and its successors converted from rail service to bus service for a period of four decades. Instead, he blames GM and its "auto-industrial allies" for purchasing parts of the Pacific Electric System and thereby setting in motion a process which "severed Los Angeles' regional rail links and then motorized its downtown heart" (p. 31). The "regional rail links" which GM, through an affiliate, was supposed to have severed were lines from "Los Angeles to Glendale, Burbank, Pasadena, and San Bernardino."

This accusation is totally inaccurate. Pacific City Lines, a company in which GM had an investment, did not acquire any interurban rail lines between Los Angeles and these points.

Pacific Electric did sell its operations in Glendale (1941) and Burbank (1944) to Pacific City Lines, but these were local bus lines. In Pasadena, Pacific Electric itself obtained authority from the railroad commission to abandon its local rail lines and bus service; thereupon a Pacific City Lines subsidiary substituted local bus service. Decision No. 33750, dated Dec. 21, 1940. There is no evidence that Pacific City Lines or any subsidiaries ever acquired transit operations in or to San Bernardino.

The interurban lines were not "severed" in 1940; some continued in operation until the 1950's. They were abandoned in stages by Pacific Electric or its successor, pursuant to authority granted by the Railroad Commission, because of their rundown and unprofitable condition and because of a lack of patronage. (See, for example, Decisions No. 34687, dated Oct. 21, 1941; No. 40075, dated Mar. 17, 1947; No. 44161, dated May 9, 1950; No. 45682 dated May 1951).

So much for the "regional rail links"; what about the "heart"? The author blames American City Lines, a company-financed in part by GM,<sup>8</sup> for the conversion of the downtown Los Angeles Railway system from streetcars to buses. But, this system was operating buses prior to 1928, a full 15 years before the creation of American City Lines, and the further expansion of its bus services, with abandonment of trackage, continued into the 1930's. (See, for example, Commission Decisions No. 19472, dated Mar. 12, 1928; No. 20049, dated July 16, 1928.)

In 1941, 2 years before the creation of American City Lines, the California Railroad Commission approved the application of Los Angeles Railway to convert additional lines from streetcar to bus service. The reasons advanced by the Commission (Decision No. 33984, dated Mar. 11, 1941) are both instructive and, by now, familiar:

\* \* \* New motor coaches of modern design with uniform high rates of acceleration and deceleration, high free running speeds and trackless maneuverability in replacement of obsolete, slow, noisy, rail cars restricted to use of tracks located in the street center, will expedite the freer flow of vehicular traffic and allow a more efficient utilization of the street surface. \* \* \* [p. 379]

\* \* \* \* \*

In arriving at a decision in this matter consideration must be given to the economic elements involved in addition to the service and facilities. Applicant has for a number of years earned insufficient revenue to defray the normal costs of operation, fixed charges, and equipment replacement requirements. As a result many of applicant's rail cars are obsolete and unsuited to the demands of present day transportation requirements. The oldest type of equipment is used on the "A" and "10" lines for which motor coach substitution is proposed. \* \* \* [p. 381.]

\* \* \* \* \*

Although there has been a rapid increase in population during the past decade in the Los Angeles area net income of applicant decreased from \$1,483,300 in 1920 to a deficit of \$381,705 in 1939, a decrease of \$1,865,005 \* \* \* [P. 381.]

The conversion of Los Angeles Railway from streetcars to buses was thus well underway, for sound economic reasons, before National City Lines or American City Lines were even organized.

Moreover, the Los Angeles Metropolitan Transit Authority, created by the State legislature to acquire Los Angeles Transit Lines and other transit operations in the area, saw fit to continue the conversions from rail to bus after taking over the properties in 1958. In its 1963 annual report, the authority stated:

One of the highlights of 1963 was the successful conversion of the five remaining local streetcar lines and two trolley coach lines to modern bus operation. This changeover was accomplished smoothly after a concentrated public information campaign to acquaint the public with the added convenience, comfort and efficiency of the new operations in their particular geographic area.

The rail transit systems of Los Angeles were singled out by the author as the showcase examples of successful enterprises which he claims were eliminated by the machinations of GM. It turns out that they were eliminated by economics. Their demise resulted from the same eco-

<sup>8</sup> See page 21, supra, for the background of this investment.

conomic problems that affected their counterparts across the country and had nothing whatever to do with any plot hatched by General Motors.<sup>9</sup>

## NEW YORK

"American Ground Transport" states that in 1936 General Motors "combined with Omnibus Corp. in engineering the tremendous conversion of New York City's electric streetcar system to GM buses." (P. 30.) Placing the responsibility for this conversion on General Motors is vital to the author's argument because he claims:

The massive conversion within a period of only 18 months of the New York system, then the world's largest streetcar network, has been recognized subsequently as the turning point in the electric railway industry. [P. 30.]

Again, let us look at the facts.

The implication that the impetus for the 1936 conversion came from General Motors is without foundation.<sup>10</sup> Public dissatisfaction with the streetcar had been mounting for years. As early as 1920, Grover A. Whalen, then Commissioner of Plant and Structures in New York City, was reported to have expressed the following views:

The outstanding fact . . . is that the motor bus is more economical than the streetcar, the fundamental reason being that the only capital charge is for the bus and garage. \* \* \*

\* \* \* the bus not only stands up against the trolley car but it literally runs away from it, that is, it gives better and quicker service. In fact, buses have cut the running time between given points from 20 to 50 percent. \* \* \*

In concluding his remarks, Commissioner Whalen emphatically said that the trolley car can be relegated to the limbo of discarded things and that the motor bus is the vehicle best adapted to the requirements of surface transportation in cities. [*Electric Railway Journal*, Jan. 17, 1920, at 146-47.]

In 1930 a representative of a leading civic organization stated:

The substitution of motor buses for streetcars in mid town and downtown Manhattan has been for years the aim of practically every civic organization within the borough, but heretofore operating, financial, franchise and political complications have stood in the way." [Mason, "Buses to Replace Trolleys," *Little Old New York*, Sept.-Oct. 1930, at 25.]

In 1929 10 civic organizations had petitioned the board of estimate and apportionment "for the removal of streetcar lines from 8th Avenue and Central Park West and the substitution of bus lines." Estes, "Does Manhattan Need the Surface Cars?", *Harlem Magazine*, January 1929, at 13.

<sup>9</sup> Compare this history with the testimony given by the accusing author at the hearing in response to the questioning of Senator Hruska:

"Senator HRUSKA. [Referring to the map of the Pacific Electric System reproduced on p. 33] Isn't that wonderful. And yet it wasn't enough. It folded, didn't it?

"Mr. SNELL. It didn't fold, Senator, it was acquired by General Motors and destroyed.

\* \* \* \* \*

"Senator HRUSKA. And what did they put in its place?

"Mr. SNELL. The product they manufactured, GM buses using Standard Oil of California fuel and running on Firestone tires.

Senator HRUSKA. And was that more profitable than the electric system?

Mr. SNELL. To the companies that manufactured General Motors buses and—."

[Transcript of hearings, Feb. 26, 1974, at pp. 127-28.]

<sup>10</sup> It is not true, as the author of "American Ground Transport" states (p. 30), that as a result of stock and management interlocks GM was "able to exert substantial influence over Omnibus," until well after motorization was completed. GM had no supply contract with Omnibus, no financial investment in the company and no common directors in 1929.

Operating companies and elected public officials were also supporters of the conversion from trolleys to buses. Mayor Fiorello LaGuardia said:

[B]us operation in place of trolleys is not only a boon to the citizenry of New York in that it provides faster, more flexible and more comfortable transportation but also brings with it other gratifying attributes. It reduces noise, keeps traffic moving faster, and eliminates the danger of wet rails when the weather is bad \* \* \* Madison Avenue, since the substitution of buses for trolleys, has become one of the show boulevards of the world. Real estate values have been enhanced and *no one is mourning the passing of the streetcar.*" [*The Bus Comes Back to Broadway* 2 (1936); *emphasis supplied.*]

Statements of this kind demonstrate that conversion was advocated long before GM appeared on the scene and by people who could not possibly be accused of participating in some plot against the welfare of the transit-riding public.

The superiority of buses is indicated by the fact that each conversion from streetcars had to run a gauntlet of approvals by the New York City Board of Estimate, the New York City Board of Transportation, the New York State Transit Commission and the New York State Public Service Commission. Copeland, "Seeking a City Bus System; Failure of Efforts to Date," *New York Times*, May 15, 1930. In each such conversion the approval of those four regulatory agencies was given after consideration of all the arguments presented by both bus and streetcar proponents at public hearings. Approval of each such conversion was granted because of the belief, as stated by William G. Fullen, then chairman of the transit commission, that "the substitution of the up-to-date flexible motor bus for the heavy fixed rail trolley \* \* \* will prove of great benefit to the people of this city and particularly, to the traveling public." "The Passing of New York's Pioneer Street Railway" 3 (1935). As Mr. Fullen further pointed out, the conviction of the regulatory agencies that buses were superior was shared by the general public. "Statistics show a complete acceptance by the general public and their approval of the change." "The Bus Comes Back to Broadway," *supra*, at 3.

If the memories of those who once used the streetcars are now sufficient to explain why the public favored the bus, the reasons can easily be found in the literature of the time. It was recognized that buses are vastly more flexible:

[S]urface traffic conditions no longer can tolerate the presence of streetcars. Buses are flexible. They can weave their way in the traffic. They do not block other traffic by taking on and letting off passengers under the wheels of other traffic. They take their passengers at the curb, where timid persons, or persons who cannot "step lively" by reason of age or infirmity, can board the bus without danger. [Mason, *supra*, at 29.]

It was recognized that streetcar operations were suffering from the financial consequences of a loss in patronage and that buses provided greater cost efficiency and operating flexibility:

The congestion of vehicular traffic is increasing so fast that trolley cars are moving more and more slowly, and the public is learning to avoid them. The result is that the surface lines of Manhattan have shown tremendous decreases in traffic during the last six years. [Estes, *supra* at 13.]

\* \* \* \* \*

[S]urface car companies of Manhattan are in a bad way financially and are unable to make the expenditures necessary to maintain their equipment in the

proper condition. The loss of traffic has cut off profit and it seems a fair inference that this condition will continue. What hope, therefore, is there that they can render satisfactory service hereafter? [Id., at 25-27.]

The president of the Third Avenue Transit Corp. pinpointed an important advantage of buses from an operator's view:

Street surface transit lines mainly carry people to and from rapid transit lines and railroads, most of whom ride only a short distance. . . . The ability to turn back buses in short service at points which may be varied from time to time permits flexibility in the matter of schedules. This is particularly desirable in view of our short-haul business." [McQuiston, "Third Avenue Transit Starts Reconversion," Bus Transportation, Dec. 1946, at 41-42.]

The same source cited by the author in his reference to the rapid conversion of the New York system (p. 30, n. 198) summed up the financial advantages of bus systems succinctly:

... The average large bus can be operated for about four-fifths of the cost of running a trolley. The ratio of capital investment to annual gross revenue greatly favors the bus. You can install a bus line with an investment not much greater than the first year's gross take, or about a dollar-for-dollar ratio. . . . When New York City Omnibus threw nearly 800 buses into the dying arteries of New York Railways, the overall gain in revenue passengers as against the trolley (April 1935, against April 1936) was almost 62 percent. ["Yellow Truck & Coach," Fortune, July 1936 at 110.]

The fact that the conversion of New York continued unabated until the last streetcar disappeared in 1957 is evidence by itself of the continued belief of civic associations, operating companies, elected public officials, and regulatory agencies in the superiority of the bus. Mayor LaGuardia summarized the attitudes which led New Yorkers to embark on this course when he said as far back as 1936:

There will be many changes for the better in New York City this year but I venture to predict that few will be more welcome than the substitution of buses for trolley cars on the Broadway-Seventh Avenue line. . . . [T]he city is now . . . reaching the point where soon its main thoroughfares will have thoroughly modern buses replacing antiquated trolleys. "The Bus Comes Back to Broadway" supra, at 2.

Three years later, Mayor LaGuardia's attitude remained the same:

Removal of the remaining obsolete and traffic-obstructing trolley lines from 42nd St. and other congested thoroughfares in Manhattan and the Bronx was reported today by Mayor LaGuardia to be in sight.

\* \* \* \* \*

"This plan," said the Mayor, "provides for a complete substitution of modern, up-to-date buses during a period of years on all trolley lines in the Third Avenue system within the city."

\* \* \* \* \*

Removal of the B.M.T. trolley lines in Brooklyn is part of the mayor's rapid transit unification plan, which is scheduled to go into effect early next year. [N.Y. World Telegram, Aug. 21, 1939.]

OAKLAND

The city of Oakland, which is listed as one of the cities whose conversion to bus transit is attributed to GM (p. 32), assumed a particular significance at the recent hearings because the basic theme was amplified by the leadoff witness, the mayor of San Francisco. He also attributed the conversion of the Oakland "Key System" to General Motors and added, in an accusation that understandably captured the

attention of the media, that General Motors was responsible for delay and excess cost in the construction of the Bay Area Rapid Transit System (BART).

Relying on the fact that National City Lines had acquired the "Key System" in 1946, he testified as follows:

Then in 1954, that is 8 years after their acquisition, at a time when we began to talk seriously in San Francisco about building a BART system, they announced their intention of abandoning the rail system, electric rail system across the bridge, abandoning it.

It is very difficult to escape the inference in the light of the total context that they did this for the very purpose of slowing up and making impossible the development of our BART system, our Bay Area Rapid Transit System.

Nevertheless, regardless of the motive, the fact is clear. They pulled up the tracks. Now in BART we have had to spend \$200,000,000 to create the same corridor in the form of a tube on the bed of the Bay. [Transcript of hearings, Feb. 26, 1974, at p. 27.]

The short and simple response to this accusation is that, whatever National City Lines may or may not have done in the 1950's, it has nothing at all to do with General Motors. All of GM's supply contracts with, and investments in, National City Lines were terminated in 1949.<sup>11</sup> *United States v. National City Lines*, 134 F. Supp. 350, 357 (N.D. Ill. 1955). It might be worth while, however, to look briefly at the Key System since it provides one more illustration of the real reasons for the discontinuance of rail systems.

The Key System's problems were those which by now should sound familiar. Initially, both the Key System and the Interurban Electric Railway Co. operated over the Oakland Bay Bridge tracks. In 1940, Interurban Electric was permitted by the California Railroad Commission to abandon its bridge rail service because of losses which Interurban described as "no longer endurable." (Decision No. 33445, dated Aug. 24, 1940.) Key continued to operate bridge rail services, but it also experienced losses. See, for example San Francisco Examiner, December 12, 1956.

Prior to 1946 when National City Lines obtained an interest in the Key System, the Oakland City Council had approved a number of contracts calling for the removal of tracks and repaving of streets. See, for example, Resolution No. 15333, dated November 13, 1945, approving four contracts reciting that substantial portions of the tracks are in need of repair and are no longer useful, and that it is in the "best interest of the city and company that operation on the lines hereinafore mentioned be converted to motor coach or trolley coach lines." Prior to 1946, the Key System also operated buses over the Bay Bridge. See, for example, Railroad Commission Decision No. 33891, dated February 11, 1941.

Any rail abandonments and conversions which were made while the Key System was a National City Lines property were, of course, carried out only with the approval of governmental authorities. Moreover, the decision to scrap the tracks across the Bay Bridge was also a governmental one.

As early as 1974, a joint Army-Navy study team, designated by the U.S. Congress, concluded that a subway was the "best solution" to the cross-bay transportation problem. Rail passage across bridges was dis-

<sup>11</sup> The author's claim that GM "continued to acquire and dieselize electric transit properties through September of 1955" (p. 35) is not true.

favored because structural considerations severally limited the speed. Report, January 25, 1947, at pages 1-5, 61-62.

Subsequently, BART was established. In 1956, the executive secretary of BART told the State public utilities commission that the "best plan" for rapid transit service between Oakland and San Francisco called for the construction of an underwater tube. Oakland Tribune, May 18, 1956. The alternative "minimum plan" of running trains across the bridge aroused opposition because it would require elevated lines on city streets. San Francisco Examiner, December 2, 1957.

In April 1957, the State director of public works and the chief of the division of bay toll crossings, reported to the legislature that the existing tracks would have to be replaced, no matter what happened:

\* \* \* any plan for leaving the tracks in place and paving over this area would be impractical and would subject the bridge to a serious fire hazard.

\* \* \* after 18 years of use, the wooden ties are so badly worn they must be replaced if the present railway continues in operation or if a rapid transit system is developed. [Oakland Tribune, April 24, 1957.]

The decision of the Key System to convert from rail to bus was specifically approved by public authority. In November 1957, it was reported:

Eastbay traffic and transit problems moved toward solution today in conjunction with the Key System's decision to substitute motor coaches for its transbay train lines.

Pending final action by the State public utilities commission, which has already granted conditional authority for the move, these developments are imminent:  
1—Reconstruction of the Bay Bridge into an overwater freeway, with five widened lanes for one-way vehicular traffic on each deck of the span, as authorized by the State legislature.

2—Removal of transbay train tracks from Oakland and Berkeley streets, with restoration of pavement to eliminate the traffic hazards now existing. [Oakland Tribune, Nov. 15, 1957.]

This conditional approval was made final early in 1958.

Final authority for replacement of transbay trains with motor coaches was granted to Key System Transit Lines today by the State public utilities commission.

By unanimous vote the commission reaffirmed its order of March 12, 1957, and denied a petition asking for reconsideration of that decision.

The commission provided that the change to bus service should coincide with the start of the State program for revamping the Bay Bridge for all-vehicle use.

It set July 1 as final deadline for the change. [Oakland Tribune, March 11, 1958.]

In 1957, the Legislature of the State of California authorized funds for the remodeling of the bridge so that both levels of the bridge could be used for one-way streets, with full utilization by vehicles. California Street and Highway Code, section 30609. In 1959, in a declaration of policy, the legislature found that:

The relief of vehicular congestion on the San Francisco-Oakland Bay Bridge can be obtained most efficiently and at the least cost in public funds \* \* \* through providing an underwater rapid transit tube. \* \* \* Id., at sec. 30770.

These governmental decisions may or may not have been wise, in the light of hindsight, but that is not the point. The point is that the accusations against General Motors are false. The streetcar tracks were removed long after GM had severed its connection with the local tran-

sit company, and in any event, the action was entirely the result of governmental determinations.

#### OTHER CITIES

The true facts about the cities of Los Angeles, New York, and Oakland, which have been selected as prime illustrations of the author's thesis that the demise of the streetcar was caused by GM, do not support the thesis at all. The same could be said, were time and patience available, of other cities throughout the country. We shall round out the demonstration of this point by looking briefly at Kalamazoo and Saginaw, Mich., and Springfield, Ohio, which the author claims were the "first targets" of GM's attempts to motorize city transit systems.

As the statement the author quotes (on p. 30) from GM's former general counsel indicates, GM formed a subsidiary, United Cities Motor Transit Co., to provide funds to local transit systems for the purchase of buses. The motivation for this action is, however, obscured by the fact that the author has quoted selectively. On the same page as the passage he cites, there appears the following:

\* \* \* For some years streetcar companies in small urban communities had been losing money and this, coupled with the depression following 1929, had resulted in the depreciation of rolling stock and an inability on the part of streetcar companies adequately to serve the public (CR 171-172) [sic]. The Yellow management thought that, if it built a small bus, a market could be created in the smaller communities where a bus could be operated more economically \* \* \* (CR 771). [Subcommittee on Antitrust & Monopoly, Senate Judiciary Committee, Hearings, Dec. 9, 1955, 84th Cong., 1st Sess. at 3920.]

Financial failure, of course, is precisely what spurred the conversion from streetcars everywhere. Buses were not a destructive force; they were largely credited by transit companies with staving off the collapse of many systems which survived.

GM did not invest funds in these systems for the purpose of prompting their change from streetcars to buses; the necessity of that step had already been determined by events. GM provided some capital to mass transportation systems which had nowhere else to turn. This is made clear in the statement by GM's general counsel upon which the author relies (p. 30) but quotes out of context. Quoted below is the statement from his report and italicized is the immediately preceding phrase which he has omitted:

\* \* \* *inasmuch as it is impossible to raise money through public issue of securities or outside sources* to develop motorized transportation, our company should initiate a program of this nature and authorize the incorporation of a holding company with a capital of \$300,000 \* \* \*. [Hearings, supra, at 3920.]

In each of the three cities listed as "first targets" for GM's effort, the electric street railway companies themselves had already applied for permission to convert from streetcars to buses before GM was on the scene, but there were no funds available. In Kalamazoo, the existing company had given notice that it could not survive as a streetcar company and itself suggested bus service. The city decided to seek bids from other companies. Bus operations were commenced by a new company in which GM had invested a total of \$20,000. The rails were disposed of by the receivers for the old company to concerns entirely

unconnected with GM. [Kalamazoo Gazette, June 14, 1932; June 10, 1933.]

In Saginaw, Mich., the local transit company, which operated both streetcars and buses, was actually in receivership. It was unsuccessful in obtaining approval to operate buses exclusively and was directed by the Federal court in bankruptcy to suspend operations. A bus service was commenced by a new company which at the time had no connection with GM. This new company began its operation with rented buses and only later did it purchase buses from GM. (Saginaw Daily News, Oct. 9, 10, 1931.)

In Springfield, Ohio, the streetcar company had been in receivership for 5 years. The receiver himself had asked for permission to substitute buses for streetcars. The city manager asked for bids nationally from anyone who could provide an adequate system and the only response was received from a company in which GM later invested a total of \$30,000. The streetcar system was abandoned by court order upon application of the city which pointed out "that for a good period of time \* \* \* [it] has operated at a loss and it [is] unlikely that the property can ever be operate at a profit." The substitute bus operation proved to be profitable from the start and less than a year later local interests bought out GM at a profit. (Springfield Daily News, Aug. 1, Aug. 30, Sept. 13, Oct. 31, Dec. 6, 1933.)

These tales of failure from the early depression years have a poignant ring. Change is not always painless and a certain nostalgia for the past is understandable. What is inexcusable, however, is the author's attempt to rewrite history in order to blame General Motors for the destruction of otherwise healthy and viable systems. What happened in Los Angeles, in New York, in Oakland, in Kalamazoo, in Saginaw, and in Springfield happened everywhere. The demise of the streetcar has been described eloquently by a writer who sincelely regretted their passing:

\* \* \* Somewhat like a moribund whale, the trolley industry was so large that it kept growing even after it had begun to die. Passenger riding kept inching slowly upward until 1923, when the total hit 14 million rides annually. Then riding too began to slope steeply downward.

Buses were still rare at the beginning of the decade. In the whole country less than 75 buses were operated by street railways in 1920. But as tidings spread that buses could cut losses and even actually earn money, they came on in a thundering stampede. [Rosome, "Trolley Car Treasury," 175-76 (1956).]

General Motors did not generate the winds of change which doomed the streetcar systems; it did, however, through its buses, help to alleviate the disruption left in their wake. Times were hard and public transportation systems were collapsing. GM was able to help with technology, with enterprise and, in some cases, with capital. The buses it sold helped give mass transportation a new lease on life which lasted into the postwar years. Then rising incomes and further dispersion into the suburbs both required and enabled people to rely more heavily on personal transportation. If General Motors had really been interested in destroying mass transportation and creating complete dependence on the automobile, it would hardly have put forth such energetic efforts to develop and promote the sale of buses. GM's experience as a manufacturer of other kinds of transportation equipment did not create a destructive "conflict"; it conferred a positive benefit on the entire community.

PART IV.—THE PAPER ON “AMERICAN GROUND TRANSPORT” IS REPLETE WITH ADDITIONAL FALSE AND DECEPTIVE STATEMENTS

As was stated at the outset, we do not intend to burden this subcommittee with a comprehensive list of false or misleading statements in “American Ground Transport”; the most significant ones, upon which its entire argument proceeds, have already been identified. We would, however, like to refer briefly to a few representative misstatements which demonstrate, if the previous discussion has not sufficiently done so, that this entire document is unworthy of the subcommittee’s consideration.

Some statements are simply untrue. On page 10, for example, the document states that all four domestic auto manufacturers maintain “separate nationwide networks of franchised dealers, each of which deals exclusively in one make of automobile.” This is just not so and the error can be demonstrated by simple observation. In fact, of 13,150 GM dealers existing in December 1973, 2,200 held the franchise of at least one other manufacturer.

On page 11, it is stated :

The 270-page bill of particulars filed by the U.S. Department of Justice on January 2, 1973, in the fleet buyers litigation contained documented allegations that the chairmen of GM and Ford routinely participated in “summit meetings” whose purpose was to fix prices on automobiles.

Wholly apart from the inherent deception involved in citing unproven Government charges without mentioning that the defendants had been acquitted of them by a jury, the statement is false. Only one of the pages from the bill of particulars cited to support the statement even mentions “summit meetings” and they are therein described, not as meetings “whose purpose was to fix prices,” but as meetings “to discuss future negotiations for labor contracts” (p. 135). The Government never contended that these labor meetings were illegal; it argued only that they could conceivably have provided an “opportunity” for improper price discussions. As to this kind of purely speculative “opportunity” and any others which the Government lawyers could think of, the bill of particulars states :

The Government cannot specify any direct communications between representatives of GM and Ford in which there was a mention made of the elimination or reduction of price concessions. [P. 133.]

The subcommittee has not been exposed to an innocent mistake here; it has been victimized by a deliberate effort to mislead.

Other statements appear to have been deliberately expressed in a way which leaves the reader with a totally false impression. For example, on page 10 it is stated that

\* \* \* there are some indications that the Federal Government has sought to protect American automakers from competition with imports by imposing “voluntary” automobile quotas on foreign governments \* \* \*

The isolated news story referred to in support for this statement (fn. 57) might literally be termed an “indication,” but the fact is—as the author must well know—that the auto industry has historically been a staunch advocate of free trade and that no quotas on imported automobiles have ever been imposed.

Take another example. On page 13, it is stated:

According to a recent estimate by the Federal Trade Commission, 9 million purchasers of domestic 1972 automobiles paid \$2.1 billion, or more than \$230 per car, in shared monopoly overcharges. \* \* \*

There has been no such estimate by the Federal Trade Commission. The author is apparently referring to a rumored study by the FTC's economics staff, not by the Commission. The Commission has never seen fit to release this so-called "estimate"; all the information about it is based on leaked reports about its final conclusions. Since the underlying document is unavailable, one cannot critically examine its basic assumptions, but they must have serious flaws because the conclusion is absurd.

This is bad enough, but the deception is compounded on page 25, where the author states that "monopoly overcharges" on 1972 trucks are "estimated at more than \$600 million." This "estimate" is the author's own calculation, based on the application to trucks of the same percentage "overcharge" apparently calculated for cars in the mysterious "estimates" by some FTC staffers.

Another example: on page 37 the author states that "several cities led by New York have filed a lawsuit charging that General Motors sets higher-than-competitive prices for its diesel buses and receives millions of dollars annually in monopoly profits." The complaint to which he refers purports to be a class action which bears his name as counsel. Thus far no cities other than New York have "filed" anything—either to join in the action or bring suit on their own. The author's source, thus, is once more himself—and his statement is inaccurate.

Still another example; on page 38 the author makes the following extraordinary statement:

By 1972, in a move which possibly signified the passing of bus transportation in this country, General Motors had begun converting its bus plants to motor home production.

Since he has devoted the previous 10 pages to deploring GM's conduct of its bus business and since he recommends that GM be ousted from the business altogether, the author's apparent distress is puzzling. It is also unfounded. In his haste to reach a sweeping conclusion, he neglected to find out that no "transit coaches" had been built in the GM plant reequipped for motor homes for at least 25 years. Moreover, the implicit assumption that GM is the only company that sells buses in this country is, of course, totally incorrect.<sup>12</sup>

#### CONCLUSION

The major thesis of "American Ground Transport" is that General Motors has had a destructive impact on mass transportation in this country. This thesis essentially rests on the claim that railroads only bought diesel engines because General Motors forced them to and the

<sup>12</sup> Among the companies selling buses in this country today are the Flexible Co. (a division of Rohr Industries); AM General Corp. (a subsidiary of American Motors); Eagle International, Inc.; Motor Coach Industries, Inc. (a subsidiary of Greyhound); Highway Products and Prevost Car Co. Additional companies have recently announced plans to enter the business.

claim that streetcars disappeared only because General Motors was seeking a market for its buses. Both claims have been demonstrated to be untrue.

Because these false and damaging claims have been associated with the hearings of this subcommittee and submitted to it by a member of its staff, they have attracted far more attention than they otherwise would have done. Accordingly, we find it necessary to urge, as set forth in the "Introduction" that this subcommittee place an immediate moratorium on further distribution of the document which asserts them until the subcommittee is in a position to distribute, under the same cover, this reply by General Motors.

## APPENDIX

[From the Washington Post, Feb. 27, 1974]

### GM, FORD UNITS CRITICIZED ON WW II ROLE

(By Morton Mintz)

Foreign subsidiaries of General Motors Corp. and Ford Motor Co. became principal suppliers of armored half-tracks and other materiel to the Nazis in World War II and, after hostilities ended, collected reparations from the U.S. government for bombing damage to Axis war plants, the Senate antitrust subcommittee was told yesterday.

The testimony came from subcommittee assistant counsel Bradford C. Snell, who made a five-year study of the auto and ground transportation industries. His sources included the U.S. Strategic Bombing Survey, the Justice Department, the Foreign Claims Commission and declassified military documents.

In Detroit, GM said Snell's charge that it aided the Nazi war effort is "false." After the outbreak of war in 1939, the company said, "a German board of managers appointed by the Nazi government assumed responsibility for the daily operations of Opel," Germany's largest auto firm, which GM had acquired in 1929.

After Germany declared war on the United States in December 1941, the Nazis controlled Opel through "a German alien enemy custodian," GM said.

In Dearborn, Ford said, "It should be obvious that the policies and direction of any company in Germany, regardless of its ownership immediately before and during World War II, were dictated by the German government.

"Ford Motor Co. had no participation or financial results of Ford of Germany while the United States was engaged in World War II," said John A. Banning, Ford's executive director for overseas planning.

"It seems to us that events of more than 30 years ago are irrelevant to any judgment on the role of international corporations in the vastly different world of today," Banning said.

Subcommittee chairman Philip A. Hart (D-Mich.) heard Snell and San Francisco Mayor Joseph L. Alioto at the opening of a four-day hearing on whether the auto and ground transportation industries should be restructured.

GM sent a protest that the hearings deal with GM's bus business, which is the target of a pending anti-monopoly suit brought by the City of New York. It is "improper to inquire into matters that are before the courts," GM vice president Robert F. Magill said.

Hart, while promising to do his best to protect GM's right to a fair trial, said the hearings—which affect the industry at the heart of his own state's economy—must proceed. Never could a congressional inquiry into anti-competitive conduct in any industry be held without encountering simultaneous litigation, he said.

Snell said he feels some ambiguity about the roles and loyalties of multinational corporations. In the current atmosphere of detente, for example, he said, GM may well be serving American interests if it builds a truck plant in Siberia. Moreover, Sen. Roman L. Hruska (R-Neb.) said, U.S. foreign policy before World War II encouraged American corporations to invest abroad and bring dividends home.

But, Snell told Hruska, the auto industry was "uniquely convertible" to war, and GM was so big that it became "the essential ingredient" of both the Allied and Nazi war efforts.

In the study, Snell said that GM and Exxon subsidiaries, at "the urgent request of Nazi officials" in 1935 and 1936, had joined German chemists in erecting plants to supply the mechanized German armies with scarce synthetic leaded fuel.

In 1938, he said, GM's chief for overseas operations "was awarded the Order of the German Eagle (first class) by Chancellor Adolf Hitler," largely for having agreed to build a heavy-truck facility at Brandenburg, which was relatively invulnerable to air attack.

Also in 1938, Snell said, the same award went to a Ford executive for opening a truck plant with the "real purpose," according to U.S. Army Intelligence, of making "troop transport-type vehicles" for the Wehrmacht.

After war broke out in 1939, GM converted its 432-acre Opel plant at Russelsheim to assembling propulsion systems for half of the Luftwaffe's most important bombers, the Ju-88s, Snell said. The same facility also assembled 10 per cent of the jet engines for the Me-262, the world's first operational jet fighter. GM's plant in the United States. Then were building conventional aircraft engines, Snell said.

GM and Ford subsidiaries built the bulk of Germany's armored "mule" three-ton half-tracks and medium- and heavy-duty trucks, Snell said.

He said his point was not to attack auto executives, but to show that the industry's monopolistic structure "is incapable of behaving and performing satisfactorily." Mayor Alioto, a leading antitrust trial lawyer, put it another way: "What's good for General Motors is not necessarily good for the country." They urged breaking up the big auto companies through new legislation.

Both men charged that GM, seeking to maximize profits, had conspired, starting in the 1920s, with oil, tire and highway interests to make the United States almost totally reliant on autos and trucks. The destruction of electric street transit systems in 51 cities was one result, Snell said.

Alioto detailed "the terrifying power of the automobile monopoly" in destroying the electrified system that once linked San Francisco and other bay-region cities.

GM called Snell's accusations about its role in the demise of electric urban transit systems "untrue."

[From the Riverside, Calif., Press, Feb. 25, 1974]

#### GM ACCUSED OF BUYING, THEN SCRAPPING SOUTHERN CALIFORNIA'S OLD MASS TRANSIT

General Motors deliberately bought up and then scrapped more than 100 "efficient, low polluting" electric mass transit systems including Southern California's "Big Red," between 1932 and 1956 to create a market for the company's diesel buses, according to a new study.

And one of the company's biggest victims was the Pacific Electric system, nicknamed "Big Red," in Southern California says a Senate antitrust subcommittee staff member.

The committee begins hearings Tuesday on restructuring the auto and ground transportation industries.

Patricia Bario, a subcommittee staff member, said the study proves that GM bought up electric transit systems, scrapped the trolleys and tore up the tracks, and substituted diesel buses that were "much less attractive to the public than the smog-free electric trolleys had been."

This not only gave GM a market for its diesel buses, said Miss Bario, it also drove commuters away from public transit and forced them into private cars.

"This was apparently a conscious decision on the part of GM. It was a conscious decision on their part to tear up efficient, low-polluting electrical systems to make a market for their cars and buses.

"Nowhere was the ruin from GM's motorization program more apparent than in Southern California," said Bradford C. Snell, author of the study and an assistant counsel to the Senate antitrust subcommittee.

The Pacific Electric was the largest interurban-electric transit system in the world.

Snell said that GM and Standard Oil of California, along with other automotive-oriented companies, formed a holding company called National City Lines to buy and scrap electric rail systems.

In 1940, he said, it began to buy and scrap parts of Pacific Electric, motorizing downtown Los Angeles, which had had an efficient streetcar system.

"The noisy, foul-smelling buses turned earlier patrons of the highspeed rail system away from public transit and, in effect, sold millions of private automobiles," said Snell in the study, which was financed by the Stern Fund of New York.

Miss Bario said the study recommends that GM be stripped of its interest in buses and locomotives "since it has a basic conflict of interest."

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[From the Crescent-News, Feb. 25, 1974, Defiance, Ohio]

#### REPORT CHARGES GM ELECTRIC LINE TAKEOVER

Washington—General Motors played a dominant role in destroying more than 100 electric surface rail transit systems in 45 cities—including Baltimore, Philadelphia, New York, St. Louis and Los Angeles—between 1932 and 1956, the author of a new study says.

"Nowhere was the ruin from GM's motorization program more apparent than in southern California," says Bradford C. Snell, who will testify Tuesday at the opening of a four-day Senate antitrust subcommittee hearing on restructuring the auto and ground transportation industries.

That region was served 35 years ago—when it was smog-free—by Pacific Electric, the world's largest electric railway system, Snell says in the 102-page study, which was financed by the Stern Fund of New York.

Pacific Electric was a \$100 million enterprise with 3,000 trains that annually carried 80 million passengers through 56 incorporated cities.

Snell says the destruction of the system was accomplished by National City Lines (NCL), a holding company formed in '36 by GM and suppliers of products used by buses, including Standard Oil of California (SOCAL) and Firestone Tire.

They gave NCL more than \$9 million by 1950 to convert 16 states to GM buses. The bus lines then were sold to operators who were required to sign a contract forbidding purchases of new equipment "using any fuel or means propulsion but gas."

In 1938, GM and SOCAL formed an affiliate of NCL that began buying and scrapping electric rail systems in Fresno, San Jose and Stockton; in 1940, it began to acquire and scrap portions of Pacific Electric, finally motorizing the downtown of Los Angeles.

"The noisy, foul-smelling buses turned earlier patrons of the high-speed rail system away from public transit and, in effect, sold millions of private automobiles," Snell says.

"Largely as a result, this city is today an ecological wasteland. The palm trees are dying of petrochemical smog; the orange groves have been paved over by 300 miles of freeways; the air is a septic tank into which 4 million cars, half of them built by General Motors, pump 13,000 tons of pollutants daily."

"Furthermore, a shortage of motor vehicle fuel and an absence of adequate public transport now threatens to disrupt the entire auto-dependent region."

Now an assistant counsel to the subcommittee, Snell says his inquiry into "the social consequences of monopoly" demonstrates that "excessive economic concentration can restructure society for corporate ends."

In case of American ground transportation, Snell contends, GM, Ford and Chrysler re-shaped it by eliminating competition among themselves, securing control over rival bus and rail industries, and the maximizing profits by substituting "large, gas-guzzling cars and trucks" for trains, streetcars, subways and buses.

The study, documented with 500 citations, some to GM sources, says that in 1932, the corporation formed a subsidiary, United Cities Motor Transit with the sole function of buying electric rail transit systems, converting them to GM buses and finally re-selling them to operators who would buy replacement buses only from GM.

In 1935, following protests by the American Transit Association, GM abolished the subsidiary, but then, joined by SOCAL and Firestone, formed National City Line.

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[From the Cleveland Press, Feb. 25, 1974]

#### BIG 3 WRECKED MASS TRANSIT FOR AUTO PROFIT, STUDY SAYS

Washington—A student of monopoly power charged today the automakers have used their economic muscle to take over and destroy mass transit in this country—leaving Americans especially vulnerable to the gasoline shortage.

In testimony prepared for the Senate Anti-Trust Subcommittee, Bradford C. Snell called for a law reorganizing the Big Three automakers into a group of competing auto, truck and bus firms. He said car makers find big, gas-guzzling cars so profitable they are reluctant to produce any other form of transportation.

Snell is author of "American Ground Transport," a five-year study of the auto industry financed by the Stern Foundation, and is assistant counsel to the Senate subcommittee. Chairman of the committee is Sen. Philip A. Hart of Michigan, home state of the Big Three car firms.

Snell's charge was echoed by Mayor Joseph L. Alioto of San Francisco, an anti-trust lawyer for 25 years.

Said Alioto: "There is much evidence to prove the premise that General Motors has been willing to go to almost any length either to eliminate or control all competitive forms of ground transportation—buses, locomotives, streetcars and electric buses—so the automobile remains number one."

Over the years, he charged, GM, through its subsidiaries, took over 46 streetcar systems in 45 cities "and converted all to smog-producing bus operations."

Snell argued the Big Three are "locked in to big car production."

"They have invested billions of dollars in plants geared to the production and distribution of one special type of vehicle: large, gasoline-powered automobiles," he said. "They are reluctant, therefore to adapt to technological changes for realities such as the energy shortage which would compel them to scrap their facilities."

Since one bus can replace 35 cars, one streetcar 50 cars and one train 1,000 cars or 150 trucks, GM has a bias toward cars—its revenues are 35 times greater if it sells cars and trucks rather than locomotives, Snell said.

As an example of GM's "motorization" of a city, he pointed to Los Angeles, a city of lush palms, fragrant orange groves and ocean-enriched air 35 years ago, and then served by "the world's largest electric railway network."

Snell said GM "and allied highway interests" took over local transit in the 1930's, and replaced electric trains with "noisy, foul-smelling buses" which convinced people to switch to cars, 4 million of them—half built by GM—which now emit 13,000 tons of pollutants a day.

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[From the Washington Post, Feb. 25, 1974]

#### GM SAID TO RUIN CITY RAIL SYSTEMS

(By Morton Mintz)

General Motors played a dominant role in destroying more than 100 electric surface rail transit systems in 45 cities—including Baltimore, Philadelphia, New York, St. Louis and Los Angeles—between 1932 and 1956, the author of a new study says.

"Nowhere was the ruin from GM's motorization program more apparent than in Southern California," says Bradford C. Snell, who will testify Tuesday at the opening of a four-day Senate Antitrust Subcommittee hearing on restructuring the auto and other ground transportation industries.

That region was served 35 years ago—when it was smog-free—by Pacific Electric, the world's largest electric railway system, Snell says in the 103-page study, which was financed by the Stern Fund of New York.

Pacific Electric was a \$100 million enterprise with 3,000 trains that annually carried 80 million passengers through 56 incorporated cities.

Snell says the destruction of the system was accomplished by National City Lines (NCL), a holding company formed in 1936 by GM and suppliers of products used by buses, including Standard Oil of California (SoCal) and Firestone Tire.

They gave NCL more than \$9 million by 1950 to convert 16 states to GM buses. The bus lines then were sold to operators who were required to sign a contract forbidding purchases of new equipment "using any fuel or means of propulsion but gas."

In 1938, GM and SoCal formed an affiliate of NCL that began buying and scrapping electric rail systems in Fresno, San Jose and Stockton; in 1940, it began to acquire and scrap portions of Pacific Electric, finally motorizing the downtown heart of Los Angeles.

"The noisy, foul-smelling buses turned earlier patrons of the high-speed rail system away from public transit and, in effect, sold millions of private automobiles," Snell says.

"Largely as a result, this city (Los Angeles) is today an ecological wasteland: the palm trees are dying of petrochemical smog; the orange groves have been paved over by 300 miles of freeways; the air is a septic tank into which 4 million cars, half of them built by General Motors, pump 13,000 tons of pollutants daily.

"Furthermore, a shortage of motor vehicle fuel and an absence of adequate public transport now threatens to disrupt the entire auto-dependent region."

Now assistant counsel to the Antitrust Subcommittee, Snell says his inquiry into "the social consequences of monopoly" demonstrates that "excessive economic concentration can restructure society for corporate ends."

In the case of American ground transportation, Snell contends, GM, Ford and Chrysler reshaped it by eliminating competition among themselves, securing control over rival bus and rail industries, and then maximizing profits by substituting "large, gas-guzzling cars and trucks" for trains, streetcars, subways and buses.

[From the Detroit News, Feb. 27, 1974]

### GM, FORD DENY HELPING NAZI WAR EFFORT

(By George Kentera)

WASHINGTON.—General Motors Corp. has been accused of—and has denied—cooperating with the Nazi war effort during World War II.

The corporation also was accused of undermining more than 100 electric rail and electric bus transit systems in 51 cities.

These charges were made yesterday against GM—and the charge of cooperation with Nazi Germany was also leveled against the Ford Motor Co., which also denied it—as the Senate Anti-trust and Monopoly Subcommittee opened hearings on proposals to break up the big automotive manufacturers.

The charges came from Bradford C. Snell, now a staff counsel to the subcommittee that is headed by Sen. Philip A. Hart, D-Mich. Snell is the author of a five-year study, entitled "American Ground Transport," that was financed by the Stern Fund of New York.

Snell offered the subcommittee a proposal to restructure the Big Four auto companies—GM, Ford, Chrysler Corp. and the American Motors Corp.—into many competing companies, perhaps as many as 44 assembly companies alone.

A second restructuring proposal was put to the subcommittee today by Lawrence J. White, assistant professor of economics at Princeton University who made his study as consultant to the subcommittee.

White's plan would:

Leave American Motors alone.

Break up Chrysler into a Dodge-Chrysler firm and a Plymouth firm.

Split Ford into two firms, a Lincoln-Mercury firm that would also include the full-sized Ford car and a Fairlane firm that would make the Torino, Mustang, Maverick, Pinto and Thunderbird.

Divide GM into four firms. The four would be a Pontiac-Cadillac firm, an Oldsmobile-Buick firm, a company producing the full-size Chevrolet, and a firm making such other Chevrolet cars as Corvette, Chevelle, Nova, Camaro and Vega.

Snell's main argument—in which he received support from Mayor Joseph L. Alioto of San Francisco and Sen. John V. Tunney, D-Calif.—was that the auto industry was noncompetitive, that it could not respond to society's needs, that GM's "interlocking control of auto, truck, bus and locomotive production" had contributed to the decline of the country's rail and bus systems and that restructuring the industry was essential to achieving "a balanced system of transportation."

In the course of his argument, he referred to alleged GM and Ford cooperation prior to World War II and during the war with Nazi war-making plans, cooperation which he said brought prewar Nazi medals to GM and Ford representatives.

Senator Roman L. Hruska, R-Neb., the ranking Republican on the subcommittee, said that countries other than Germany had made use of plants during the war which were owned by enemy nations. One of them, he said, was the United

States, which in World War II took over the German firms such as the General Aniline & Film Corp.

"Is it bad only if General Motors did it?" he asked.

"No other corporation was in the position of being an essential ingredient in both (Allied and Nazi) war efforts, and I think that is a dangerous situation," said Snell.

Hruska replied that in prewar years, as today, American policy was to expand trade with other countries.

"If you inveigh against General Motors you have to inveigh against the system that put them there," he said.

The GM office in Washington said yesterday: "The statement that General Motors assisted Nazi Germany's war effort is false. A German board of managers appointed by the Nazi government assumed responsibility for the daily operations of Opel (the plant) after Sept. 3, 1939. After the United States and Germany were at war, the operation was under control of a German alien enemy custodian."

The GM statement did not address itself to allegations in the Snell study that Alfred P. Sloan Jr., GM board chairman, and three GM vice-presidents served on the GM-Opel board of directors throughout the war and that "communications as well as material reportedly continued to flow for the duration of the war between GM and Ford plants in Allied countries and those in Axis territories."

John A. Banning, executive director of overseas business planning for Ford in Detroit, also issued a statement on the Snell charges, saying: "It should be obvious that the policies and direction of any company in Germany regardless of its ownership in the years immediately before and during World War II were dictated by the German government. Ford Motor Co. had no participation in the operation or financial results of Ford of Germany while the United States was engaged in World War II.

"It seems to us that events of more than 30 years ago are irrelevant to any judgment on the role of international corporations in the vastly different world of today."

Of Snell's charge that GM, in order to sell more diesel buses, systematically undermined electric-powered mass transportation in 51 cities—including Jackson, Kalamazoo, Pontiac and Saginaw—GM replied:

"The accusations in the Snell report to the Senate Anti-trust Subcommittee are untrue. GM will refute them in detail during the trial of the pending case in New York City. Mr. Snell is one of the lawyers who was instrumental in bringing the lawsuit in New York City making these same claims."

That suit—the City of New York vs. GM—is pending in the Federal Court for the Southern District of New York. The complaint alleges that GM is attempting to monopolize the manufacture and sale of city buses and that its acquisition back in 1925 of the Yellow Truck and Coach Co. violated the Anti-trust Act.

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[From The Argus (Fremont-Newark, Calif.), Feb. 27, 1974]

#### BRADLEY SAYS GM SHOULD BE SPLIT UP

Los Angeles—Charging that General Motors has a "near monopoly" on U.S. production of buses and diesel locomotives, Mayor Tom Bradley said Tuesday that the giant corporation should be stripped of its divisions that manufacture such vehicles.

The mayor said that what is good enough for General Motors is not always good for the country, and added that he feared a conflict of interest impact on public transit as long as GM has a "near monopoly on production of buses.

Bradley said GM has a long history of acting contrary to the public interest. He said the company tried to drive out electric rail transit systems in the 1930s and 1940s and also allowed its German subsidiary to manufacture aircraft and trucks for the Nazis during World War II.

Although not specifically charging the corporation was deliberately slowing bus and rail transportation in the U.S., Bradley said that only 3,000 buses would be manufactured in America next year. Of course, he added, the Southern California Rapid Transit District will need 1,400.

Bradley cited a recent Washington announcement that over a 20 year period, GM and Standard Oil of California organized a "conspiracy" to "buy up about

200 city electric transit systems and make Los Angeles and 44 other American cities more auto and bus dependent for daily transportation needs."

Even after GM and Standard were convicted of criminal conspiracy by a Chicago federal jury in 1949, Bradley said, GM still continued to acquire and dieselize electric transit systems through September 1955.

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[From the Los Angeles Times, Feb. 27, 1974]

#### BREAKUP OF GM'S BUS AND RAIL OPERATIONS URGED BY BRADLEY

MAYOR SAYS FIRM CONTROLS MANUFACTURE OF MASS TRANSIT VEHICLES, ASKS CONGRESS TO REORGANIZE "NEAR MONOPOLY"

Los Angeles Mayor Tom Bradley called on Congress Tuesday to break up what he charged was a "near monopoly" by General Motors over U.S. bus and rail transportation.

The mayor's remarks at a Los Angeles news conference were timed to coincide with the introduction of 20 pages of written testimony he submitted at the opening of hearings in Washington, D.C., by a Senate antitrust subcommittee.

The mayor charged that General Motors, which dominates the manufacture of buses, had restricted competition and hindered technological advances in bus manufacture.

Bradley specifically cited the anticipated requirements of 1,400 new buses by the Southern California Rapid Transit District, and nationwide production of only 3,700 buses last year.

General Motors produces most of the nation's buses, and supplies diesel engines and engine components to the only other two firms engaged in bus manufacturing.

In remarks prepared for the subcommittee, the mayor called on Congress to:  
—Reorganize General Motors' bus and rail operations to free them of any possible conflict of interest with the company's automobile operations.

—Encourage the formation of new bus and rail firms to provide compensation "necessary for the production of modern passenger and freight transport systems."

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[From the Boston Globe, March 3, 1974]

#### REPORT ACCUSES AUTO INDUSTRY OF STIFLING MASS TRANSIT

"GM, FORD AND CHRYSLER RESHAPED AMERICAN GROUND TRANSPORTATION TO SERVE OWN CORPORATE NEEDS." SNELL REPORT TO U.S. SENATE SUBCOMMITTEE

(By Jack Thomas)

By 8 o'clock last Tuesday morning, the traffic on the Southeast Expressway was backed up to East Milton sq., Storrow Drive was clogged with automobiles, and the line of cars on the Tobin Bridge was bumper-to-bumper from the Route 93 intersection back to the toll booths.

Eleven thousand people came into the city by streetcar, 40,000 by rapid transit, 8400 by railroad, 5100 by bus, and 65 by ferry. Despite the crowded highways, the air pollution and the fuel crisis, 48,000 people still came into the city by motor vehicle.

Some chose mass transit, and the city's sorely neglected, sprawling, crawling, public transportation system strained to provide service with inadequate, antiquated, unpredictable trains and trolleys.

For Boston, it was, in short, a typically, troublesome transportation day.

#### *Astonishing report*

State public health officials, concerned about air pollution, measured the carbon monoxide in Kenmore Sq. at nine parts per million, or a shade over one fourth of the amount considered to be a serious health treat.

At the same time Tuesday, in Washington, a Senate subcommittee was digesting an astonishing 322-page report which accuses the automobile industry, particularly General Motors, of a deliberate campaign to cripple mass transit systems across the nation in order to sell more cars and trucks.

General Motors, Ford and Chrysler, of course, account for 97 percent of the automobiles manufactured in America and 84 percent of the trucks.

But GM also dominates the bus and locomotive industries. GM manufactures 100 percent of the passenger locomotives and 80 percent of the freight locomotives produced in the United States.

#### *Transit breakdown*

GM controls only 75 percent of city-bus production, but its only competitor relies on GM for diesel propulsion systems, major engineering components, technical assistance and financing to the extent that it is more a distributor for GM than a competitor.

By monopolizing the automobile, truck, bus and rail industries, the report says, GM had the opportunity to promote the more profitable motor vehicles and to manipulate the gradual displacement of alternative forms of ground transportation.

"GM, Ford and Chrysler reshaped American ground transportation to serve corporate wants instead of social needs," the report said. "This study strongly suggests that a monopoly in ground vehicle production had led inexorably to a breakdown in the nation's ground transportation."

The report was prepared by Bradford C. Snell, a staff counsel for the Senate Antitrust and Monopoly Subcommittee, headed by Sen. Philip A. Hart (D-Mich.).

Snell's report was the most startling testimony of hearings on Hart's proposed Industrial Reorganization Act, which would set up a commission to recommend ways to break up giant corporations that dominate entire industries.

Using 500 footnotes to cite sources of information, Snell carefully traced the development of GM, charging that the company set up subsidiaries, beginning in the 1920s, to buy up or replace urban electric and inter-city electric rail systems with buses or diesel locomotives.

"By 1949," said Snell, "GM had been involved in the replacement of transit systems with GM buses in 45 cities including New York, Salt Lake City, Philadelphia, Oakland, St. Louis, Baltimore, and Los Angeles."

In 1936, GM organized a holding company, National City Lines, whose purpose was to convert the nation's electric transportation systems to GM bus operations.

GM, Standard Oil of California, Firestone Tire and two other suppliers of bus-related products contributed more than \$9 million to convert electric transit systems in 16 states to GM bus operations.

There were three steps in the process, the report said: acquisition of the electric rail system, motorization and then resale.

By reselling the properties after conversion, Snell maintained, GM and its allied companies were assured that their capital was continually reinvested in the motorization of additional systems.

"To preclude the return of electric vehicles in the dozens of cities it motorized, GM extracted from the local transit companies contracts which prohibited their purchase of any new equipment using any other fuel or means of propulsion other than gas.

"The campaign had a devastating impact on the quality of urban transportation and urban living in America," said Snell.

He cited the example of Los Angeles, which, in 1939, was served by the world's largest interurban electric railway facility, the Pacific Electric System.

The transit company branched from Los Angeles for a 75-mile radius, reaching north to San Fernando, east to San Bernardino and south to Santa Ana. Three thousand quiet, pollution-free electric trains, running on 1164 miles of track, transported 80 million people a year throughout the region's 56 separate cities.

In 1938, according to testimony Wednesday, from Los Angeles Mayor Thomas Bradley, GM, Standard and Firestone organized the Pacific Transit Lines which began to acquire and scrap the Pacific Electric System. Power lines were torn down, tracks uprooted and, in place of the street cars, the firms installed GM diesel buses fueled by Standard Oil, said Bradley.

"Today," said Snell, "Los Angeles is an ecological wasteland. The palm trees are dying from petrochemical smog. The orange groves have been paved over by 300 miles of freeways; the air is a septic tank into which four million cars pump 13,000 tons of pollutants daily."

Since 1963, Los Angeles has been trying to raise money to rebuild a rail system. The estimated cost today of constructing a 116 mile rail system—less than one-sixth the size of the original Pacific Electric—is more than \$6.6 billion.

The production of motor vehicles, of course, is considerably more lucrative than the production of trolleys, rapid transit, or railroad trains. One trolley can

eliminate 35 automobiles. One streetcar, subway or rapid transit vehicle can supplant 50 passenger cars, and a railroad train can displace 1000 cars.

"Given the Big Three automakers' shared control of motor vehicle production, and GM's diversified control of non-automotive transport," said Snell, "it was inevitable that cars and trucks eventually would displace every other competing form of ground transportation."

The campaign was effective.

By 1973, viable alternatives to cars and trucks had all but ceased to exist. There were no producers of electric streetcars, trolley coaches or interurban electric trains. Only two railcar builders, Pullman and Rohr, were definitely planning to continue production. A single firm, General Electric, still manufactured a handful of electric locomotives.

#### *Losing proposition*

"There were, of course, a number of factors in this decline," said Snell. "For example, the popularity of motor vehicles due in large part to their initial flexibility, most certainly affected public demand for competing methods of travel.

"On the other hand, the demise of bus and rail forms of transport cannot, as some have suggested, be attributed to the public's desire to travel exclusively by automobile.

"Rather much of the growth in autos as well as trucks," he said, "may have proceeded from the decline of rail and bus systems. In short, as alternatives ceased to be viable, automobiles and trucks became indispensable."

"That kind of policy definitely hurts us in Boston," said Fred Salvucci, Mayor White's transportation adviser. "Even though we've retained our transit system, it's extremely difficult to purchase equipment because the manufacturers of trains and trolleys have been driven out of business.

"We're purchasing streetcars," said Salvucci, "but it takes six years to get them. World War II was won in four years.

"It's also damaging to us because it results in a complete distortion of the role of the automobile in our culture," said Salvucci, "and it's also expensive.

"In the past two years, we've had to spend \$5 million repairing streetcars that are obsolete. It's a losing proposition."

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[From the Detroit Free Press, March 3, 1974]

#### GM'S WAR TIES WITH NAZIS CITED IN ANTI-TRUST HEARING

WHAT AMERICA NEEDS TODAY IS NOT WHAT GM, FORD AND CHRYSLER ARE INCLINED TO PROVIDE

(By Saul Friedman)

Washington.—Charges that General Motors Corp. played roles in the decline of urban mass transit systems in American and the production of war material for Nazi Germany were cited last week as reasons to break up the world's largest industrial corporation.

The testimony, which inspired the anger of a senator and quick denials from GM, came on the opening day of hearings before the Senate anti-trust and monopoly subcommittee.

The Subcommittee, chaired by Sen. Philip A. Hart, D-Mich., is investigating the possibility of breaking up large corporations in concentrated industries, including auto manufacturing, in order to foster competition.

Hart has introduced the proposed Industrial Reorganization Act. And along with other government and economic troubles, Hart's hearings, in the long run, may become the most serious attack on the power of the American manufacturers and their allies in motor vehicle transportation.

The opening theme of the hearings was set by San Francisco Mayor Joseph Alioto, a former anti-trust lawyer, and Bradford C. Snell, a research economist for the subcommittee.

Alioto charged that ownership by GM of industries which produce forms of transportation that compete with autos and trucks—buses and locomotives—enabled the company to destroy electric rail mass transit systems throughout California and the rest of the nation.

Snell, in an exhaustive study for the committee, enlarged on Alioto's charge.

And in making the charge that GM is more interested in profits than in the Nation's needs, he dug into the obscure history of the company's role in the German war machine.

Snell told the committee that GM—"not out of evil intent, but as part of doing business—maximized global profits by supplying both the Axis and Allied powers with armaments during World War II.

"Its auto plants in Germany built thousands of bomber and jet propulsion systems for the Luftwaffe at the same time that its American plants produced aircraft engines for the U.S. Army Air Corps," Snell said.

Snell's study, which went into greater detail, used the files of the U.S. Foreign Claims Settlement Commission and the Air Force's Strategic Bombing Survey, a study of the effects of bombing on German war production.

Snell said GM purchased Opel, which now produces motor vehicles, in 1929, and owned it throughout the war. And during the years it produced half the engines for Germany's bombers, the first operational jet engine and trucks, GM officers remained on GM-Opel boards.

"Ford was also active in Nazi Germany's pre-war preparations," Snell said. The two companies built trucks for freight and troop transport and in 1938 the German chief executives for GM and Ford received Nazi German Eagles.

Although the German government took over day-to-day operations of the GM plants soon after the war began, ownership of the company didn't change hands, Snell said.

After the war GM applied for and received more than \$33 million in reparations and federal tax benefits as a result of bombing damage to its plane and motor vehicle factories.

GM said in a statement that the charge that it "assisted in Nazi Germany's war effort is false. A German board of managers appointed by the Nazis assumed responsibility for daily operations of Opel after Sept. 3, 1939. After the U.S. and Germany were at war, the operation was under the control of a German enemy alien custodian."

Snell said GM "was in complete control of its Russelsheim warplane factory for nearly a year after Germany's declaration of war against the U.S. . . . On Nov. 25, 1942, the Reich did appoint an administrator for the Russelsheim plant, who, although not permitted to interfere with the authority of the GM-appointed board of directors, was instructed to oversee operations."

Senator Roman Hruska, R-Neb., angrily suggested that Snell was unfairly singling out GM, because other American companies were involved in Germany during the war, and some German and Japanese companies had interests in the U.S.

"We encouraged investments overseas after World War I because they paid for themselves and brought dividends back to this country," Hruska said.

Snell emphasized that GM executives were not at fault for getting involved in the German war effort.

"It was a consequence of their dominant position in both the U.S. and Germany," Snell said, "and I don't think we should permit corporations to become so dominant that they can become important to the war effort of countries who are fighting each other."

Snell made the same point in arguing that Congress should force GM and other companies to give up divisions which make trucks, buses and other means of transportation besides the auto.

"What America needs today is not what GM, Ford and Chrysler are inclined to provide," Snell said. "They want to sell big, expensive cars \* \* \* and trucks \* \* \*"

"We need smaller cars with efficient low-pollution engines. We need high-speed rail systems to move people and goods downtown and between cities \* \* \*"

Breaking the Big Three automakers into a balanced group of competing auto, truck, bus and rail firms is an essential step toward achieving a balanced system of transportation, Snell said.

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[From the Detroit News, March 3, 1974]

GM CAST AS OGRE TO ANTI-TRUST PANEL

WITNESSES DEMAND BREAKUP OF BIG THREE

(By George Kentera)

Washington—Several witnesses before the Senate Anti-trust and Monopoly Subcommittee thought that the General Motors Corp. is just too big and ought to be demoted—not to corporal, maybe, but at least to first lieutenant.

The subcommittee held four days of hearings about the automobile industry last week, and so prominently was GM mentioned as a major model of monopoly power that Sen. Roman L. Hruska, R-Neb., was moved early to protest.

"Oh, Mr. Witness," he said to Bradford C. Snell, subcommittee consultant and author of a study recommending the breakup of the Big Three auto companies: "There would be no more pollution, no more traffic jams, no more foul buses \* \* \* no more unemployment, no more unsold cars, gasoline would be in plenitude \* \* \* there would be no more overcharging for cars \* \* \* and some of the suburbs would get palm trees again, and ocean breezes would waft in again—all if you broke up General Motors."

General Motors was the big villain last week as the subcommittee, chaired by Sen. Philip A. Hart, D-Mich., completed the first round of hearings which are attempting to determine whether the auto industry could be and should be made more competitive by dividing the Big Three into smaller companies.

The first witness, Mayor Joseph L. Alioto of San Francisco, accused GM of acting through a holding company, National City Lines, to help destroy what had been an electric mass transit system in his city.

He charged the GM holding company with demolishing the transit company's track system on the San Francisco-Oakland Bay Bridge at a time when the Bay Area Rapid Transit (BART) Commission—which subsequently built the city's modern mass transit system—was planning a transbay system and could have used the bridge right-of-way.

"They did this with the intention of blocking and slowing up development of our BART system," Alioto said.

From there, things went downhill for GM.

Snell followed Alioto and called GM "in effect a sovereign economic state" which was considerably responsible for the decline of the country rail and bus systems, and continued:

"GM is the world's largest industrial enterprise and one of the world's most powerful private government. Its 800,000-man worldwide work force is larger than the standing armies of most nations. It is, in effect, a sovereign economic state unaccountable to the citizens of any country yet possessing tremendous influence over the course of national as well as international developments.

"GM is a major force in international affairs. During World War II it furnished Axis and Allied powers with armaments. Its auto plants in Germany built thousands of bomber and jet propulsion systems for the Luftwaffe at the same time that its American plants produced aircraft engines and tanks for the U.S. Army.

"Currently, it is negotiating with the Soviet Union for the construction of the world's largest truck facility."

Thomas R. Asher, a Washington attorney (and former Detroit law clerk) who worked in the Anti-Trust Division of the Justice Department between 1966 and 1969, said that all the lower-echelon officials who then studied the auto industry as the object of a possible anti-trust suit agreed that GM should be a target.

But no recommendation was ever made that Atty. Gen. Ramsey Clark authorize such a suit, he said.

"Of special concern to the anti-trust division was General Motors," Asher testified, "which appeared to have monopoly power because of its substantially greater size and profits. By reducing its prices to a still profitable level, GM had—and has—the power to drive both Ford and Chrysler out of business, as well as virtually all of its competition.

"Furthermore, only GM was substantially integrated forward into the automotive accessories like spark plugs, electrical equipment and batteries.

"Its profits on these replacement parts are much higher than on automobiles themselves, enabling GM not only to milk the market but thereby further subsidize any price warfare it might choose to wage against Ford, Chrysler, American Motors, or foreign producers. With such monopoly power it is not surprising that GM called the shots."

Snell repeated that view.

"General Motors, the industry leader, makes most decisions," his study—financed by the Stern Fund of New York—said. "The other two firms (Ford and Chrysler), which rely upon GM for the supply of various components, invariably follow. In the words of former Anti-Trust Division chief Thurman Arnold, Ford and Chrysler have become mere 'satellites of General Motors.'"

Lawrence J. White, assistant professor of economics at Princeton University and author of another study calling for a restructuring of the automobile industry (his plan would break GM into one parent firm and four automotive firms), agreed with Snell and Asher.

"The industry has followed a pattern of price leadership," he said, "with General Motors as the price leader. Repeatedly, at the time of new model introductions, Ford and-or Chrysler have announced their list prices for the new models, General Motors has subsequently announced its prices, and the other two firms have adjusted their prices to General Motors' levels, upward as well as downward."

The week's final witness was Donald E. Weeden, board chairman of Weeden & Co., New York dealer in stocks and bonds.

Weeden offered no program to break up the auto companies; he had been asked to testify about the effects of any breakup on auto company stockholders and on future financing of mass transportation.

He testified that in general stockholders had not been hurt—and usually had been helped—in corporate divestiture cases.

As an example, he noted that prior to the Standard Oil Co. breakup in 1911, the company stock sold at \$660 per share. One year later, after 33 affiliates and subsidiaries had been made into separate companies and their stocks distributed according to court order, the stock's aggregate value was \$971 per share, he said.

Forcing GM to divest itself of its bus and locomotive production, Weeden said, probably would lead to a response by Wall Street to the new investment opportunities in mass transit.

"So long as one bus can do the job of 35 Cadillacs, one subway car that of 50 Oldsmobiles and one train of 1,000 Chevrolets," he said, "the pressure on the most public-spirited, well-meaning corporate managers at General Motors will be overwhelming to push private cars rather than mass transit.

"Perforce, then, one cannot advise clients to invest in General Motors diesel locomotives. But if not General Motors, then what company for the investor sold on the future of mass transportation?"

"That is what I mean when I say Wall Street abhors a monopoly the way nature abhors a vacuum. Whatever investment funds are available go into the monopoly—which is the functional equivalent of a vacuum."

General Motors—and the other auto companies—will get their chance to respond, at length. When that will be is not known.

Hart said no date has been set for resumption of the hearings into the auto industry, one of seven industries that would be restructured under his proposed Industrial Reorganization Act of 1973 which would outlaw monopoly power.

Hruska, meanwhile, was unworried about the possibility that Congress would act soon against the auto firms. He recalled that 20 years ago the subcommittee, under the late Sen. Estes Kefauver, D-Tenn., had a "whale of an investigation" of GM's ownership of municipal transit lines.

"This history of trying to analyze and prescribe for the motor industry of America goes back almost 40 years," he said. "Somehow or other, no results have flowed from these efforts. \* \* \* I don't know if that is an argument against trying again. We're going to try again. \* \* \*

Stockholders who watch the market in New York didn't seem to anticipate any sudden, precipitate action either. General Motors common stock opened the week at 51 and closed at 50.

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[Iron Age, Mar. 11, 1974]

#### WASHINGTON VS. DETROIT: OF WITCHES, NAZIS AND MONOPOLY PLAYERS

The auto industry had no friends at the witness table as Senate hearings on corporate concentration got underway. But the carmakers, who took some vicious verbal blows from a variety of witnesses, get their say at the end of this month.

The auto industry was accused of virtually everything short of witchcraft. And some at the hearing indicated suspicions of that.

Granted, economic concentration in any industry can be negative; but accusing General Motors Corp. of involvement on the side of the Germans just prior to and following World War II was a bit much, one observer noted. That accusation came from economist Bradford C. Snell, a staff member of the Senate Antitrust and Monopoly Subcommittee which is holding the hearings.

In Detroit, GM issued a strong statement asserting that Snell's charges were false.

Nonetheless, Snell's allegations, along with others, typified the curious tone the hearings took at the outset. Sen. Philip A. Hart (D., Mich.), subcommittee chairman and the man who introduced the Industrial Reorganization Act, tried to keep the sessions in perspective.

Hart emphasized his bill would try to develop new standards for measuring unlawful monopoly power. In addition, the legislation would create a special commission to study seven industries, including steel, non-ferrous metals and autos, and make recommendations to Congress as to how they might be made more competitive.

Hart pointed out his bill prohibits industry restructuring if it would cause loss of efficiencies.

"The basic question," Hart said, "is whether it is feasible and practical to reorganize these industries so as to benefit workers, consumers, stockholders and the economy." The Senator himself is skeptical that his legislation will ever become law. He admits his intention is to "begin building a record" on the question of restructuring industries.

The auto and mass transit industries in America are "deeply troubled," Hart said.

Most of the witnesses at the four days of hearings asserted it is because of the machinations of the auto industry that mass transit is hurting.

Mayor Joseph Alioto of San Francisco, an acknowledged expert on antitrust, told the hearings "monopolistic practices" in the auto industry such as "interlacing and interlocking" control of competing modes of transportation are "problems which have never been fully attacked."

"The greatest wisdom certainly calls for divestiture by the automakers of the subsidiaries in direct competition with the auto, such as buses, trucks and locomotives," Alioto said.

As it turned out, the subcommittee revealed that the Justice Dept. did indeed develop confidential proposals to break up the Big Three automakers. But the ideas never saw the light of the day, it was pointed out.

The government idea was to split General Motors into six companies, Ford into two and to end the franchised-dealer system for GM, Ford and Chrysler.

By week's end the hearings had developed into a sound-off session against the auto industry, a situation many people felt was more inequitable and one-sided than even Hart had intended.

#### MAZDA DEBUTS ROTARY TRUCK, BACKS WANKEL POWERPLANTS

Mazda Motors of America will introduce the world's first rotary engine powered pickup next month.

The Wankel-powered pickup is another vote of confidence in the powerplant, Mazda says. Price: \$3200—about \$400 above a conventional engine Mazda pickup.

On the passenger car front, Mazda says it has lost \$100 million in business (20,000 to 30,000 in new car sales) since reports circulated that its rotary engine cars got less than 11 miles per gallon in Federal government emission tests.

Mazda executives claimed that further tests should up the mpg figure to 13 and that GM's soon-to-come Wankel-powered cars will give a boost to Mazda's products. "It will show we were right all along," a Mazda spokesman assures.

#### FOR COMPONENT MAKERS, SMALL CAR PUSH MAY MEAN BIG DOLLARS

The swing toward small cars in the United States has expanded considerably the worldwide marketing prospects for multinational automotive component manufacturers.

H. Richard Ford, vice president, worldwide automotive marketing, The Bendix Corp., says the rapid expansion of the compact and subcompact market in the U.S. "offers tremendous opportunities for companies experienced in supplying innovative parts and components to the foreign vehicle manufacturers."

Ford points out small cars have always predominated in virtually every country outside the U.S.

[From the Chicago Tribune, Mar. 13, 1974]

#### WHO ELIMINATED OLD TRANSIT LINES?

(By Nicholas von Hoffman)

WASHINGTON.—Telling how he had to get up at 5:30 in the morning to get on line at the gas pumps by 6:30 so he could be at the Capitol by 9:30, a California congressman remarked that, "By the time I got to my desk, I was so goddam mad I was swearing I was going to vote against myself for reelection."

The congressman, like the millions of other victims, has no choice but to wait or pay. The lines won't shorten till the oil companies get their price—somewhere approaching a dollar a gallon.

And, when the gas does flow again, it will permit the congressman and everybody else proceed to work at an average rush-hour speed of 12 miles per hour, or considerably slower than our great-grandfathers made it to work in 1890.

Grandpa, of course, could take a trolley or an interurban—those speedy, electric railroads that once serviced the towns and cities of the East, Midwest, and California so cheaply and efficiently. They are gone, and half our population is marooned and held for ransom in the suburbs by the car, tire, and oil companies.

That we are in this fix isn't accidental. In 1949, General Motors, Standard Oil of California, and Firestone were convicted by a federal jury of criminally conspiring to wreck electric transportation and replace it with gas or diesel buses.

The story of how General Motors took our money, our health, and our sanity was recently told to the Senate antitrust subcommittee by its own assistant counsel, economic historian Bradford C. Snell. Snell has put together a documented narrative about how General Motors set out to wreck public transportation in America for the reason that the company makes its highest profit from cars.

One bus can eliminate 35 cars: one street car or rapid-transit vehicle can do the work of 50 cars; and one little interurban or regular railroad train can render 1,000 cars unnecessary.

Only a corporation of such power and presumption as General Motors could dream of destroying a successful, profitable industry earning millions of dollars and carrying millions of passengers. Yet General Motors did, and it began by helping to create the Greyhound Corp.

Greyhound agreed to buy all its equipment from General Motors—its largest stockholder until 1948.

In 1932 came the formation of United Cities Motor Transit, a subsidiary of G.M.'s Bus Division, whose "sole function," according to Snell, "was to acquire electric streetcar companies, convert them to G.M. motor bus operation and then resell the properties to local concerns which agreed to purchase G.M. bus replacements."

After the electric transportation systems in three Midwestern cities had been wiped out via this route, the stink was so large that G.M. had to employ more stealth and move by indirection.

Thus the chairman of G.M.'s Bus Division was installed as the head of New York City's trolley company until the street-car system, the world's largest, was destroyed by conversion to buses in 18 disastrous months. In the same period, G.M. got together with Standard Oil of California, Firestone Tire, and Greyhound to create National City Lines, a holding company whose purpose was destruction of rapid transit in no less than 16 states.

General Motors not only shot down the world's largest trolley system in New York, it also shot down the world's largest interurban system in Los Angeles. Pacific Electric branched out 75 miles north, east, and south of downtown Los Angeles, serving 80 million passengers a year by running 3,000 trains daily. Pacific Electric, not the automobile, Snell maintains, accounted for L.A.'s vast, decentralized suburban development, which G.M. has helped to convert into a poison gas chamber.

National City Lines and its subsidiaries got hold of Pacific Electric and destroyed it. Currently there were proposals to bring the interurban system back. The estimated cost to restore one-sixth of this system that used-to-be is almost \$7 billion.

For carrying off this conspiracy, which was much more serious than Watergate in its effects on our lives, General Motors was fined \$5,000.

But we're not being altogether fair to General Motors. Sure, they deserve the lion's share of the blame, but people bought their propaganda.

Newspaper editors, downtown businessmen, gawking yahoos, progress worshipers—the same pack of fools you can still sell any fad to—they cheered and beat the drums.

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[Fifth Estate, Mar. 16-19, vol. 8, No. 24]

#### GM ARMED HITLER'S WAR MACHINE

Most of us were raised believing that during the Second World War, Detroit was the "Arsenal of Democracy" with images of tanks and planes rolling from assembly lines that had been producing autos a short time before. The whole of American industry was converted into a crushing weapon against Fascism.

What we weren't told was that the same companies which were providing the armed might of the U.S. were simultaneously supplying weapons for the Nazi regime.

This startling fact was brought before the U.S. Senate Monopoly and Anti-Trust Sub-Committee by Bradford C. Snell, a research economist for the sub-committee.

Although the charges are of the most serious magnitude, GM saw fit to issue only a three-sentence denial, and the Detroit papers buried the whole story. (The Free Press put it on page 16-F).

With the author's permission, the Fifth Estate is publishing an excerpt from Snell's copyrighted statement documenting U.S. automotive company cooperation with the Nazis.

[The excerpt follows:]

During the 1920's and 1930's, the Big Three automakers undertook an extensive program of multinational expansion. In 1929, General Motors acquired Germany's largest automobile company, Adam Opel, A.G. By the mid-1930's, these three American companies owned automotive subsidiaries throughout Europe and the Far East; many of their largest facilities were located in the politically sensitive nations of Germany, Poland, Rumania, Austria, Hungary, Latvia, and Japan.

As the Axis Powers overtly prepared for war, General Motors, Ford, and, to a lesser extent, Chrysler found themselves involved in serious conflicts of interest and national loyalties. Due to their concentrated economic power over motor vehicle production in both Allied and Axis territories, the Big Three inevitably became major factors in the preparations and progress of the war. In Germany, for example, General Motors and Ford became an integral part of the Nazi war efforts. GM's plants in Germany built thousands of bomber and jet fighter propulsion systems for the Luftwaffe at the same time that its American plants produced aircraft engines for the U.S. Army Air Corps.

#### ORDER OF THE GERMAN EAGLE

As owner of Germany's largest automobile factory, General Motors was quite naturally a more important factor in the Axis war effort than either Ford or Chrysler, whose investments were substantially less.

GM's participation in Germany's preparation for war began as early as 1935. That year its Opel subsidiary cooperated with the Reich in locating a new heavy truck facility at Brandenburg, which military officials advised would be less vulnerable to enemy air attack. During the succeeding years, GM supplied the Wehrmacht with Opel "Blitz" trucks from the Brandenburg complex. For these and other contributions to wartime preparations, GM's chief executive for overseas operations in 1938 was awarded the Order of the German Eagle (first class) by Chancellor Adolf Hitler.

Ford was also active in Nazi Germany's prewar preparations. In 1938, for instance, it opened a truck assembly plant in Berlin whose "real purpose," according to U.S. Army Intelligence, was producing "troop transport-type" vehicles for the Wehrmacht. That year Ford's chief executive received the Nazi German Eagle (first class).

Given the dominant structural positions of GM and Ford in the war economies of both America and Germany, these firms had the power to influence the course of World War II. They could determine, for example, which belligerent would benefit from their latest advances in war-related technology. Refusal to aid in prewar preparations, of course, was unthinkable. It would have resulted in confiscation and irreparable economic harm to GM and Ford stockholders. In any event, due to their concentrated economic power in both economies, they were able to shape the conflict to their own private corporate advantage. Whether in fact their profit-maximization determinations were also in the best interests of international peace or, more specifically, in accord with the national security objectives of the United States at that time is entirely unclear.

The outbreak of war in September 1939 resulted inevitably in the full conversion by GM and Ford of their Axis plants to the production of military aircraft and trucks. During the last quarter of 1939, for instance, GM converted its 432-acre Opel complex in Russelsheim to warplane production. From 1939 through 1945, the GM-owned Russelsheim facility alone assembled 50 percent of all the propulsion systems produced for the JU-88 medium range bomber. According to the authoritative work of Wagner and Nowarra, the JU-88 by 1940 "had become the Luftwaffe's most important bomber, and remained so for the rest of the war."

The Russelsheim facility also assembled 10 percent of the jet engines for the

ME-262, the world's first operational jet fighter. Wagner and Nowarra described this jet plane as perhaps "the most important military aircraft to come out of Germany." With a top speed of 540 miles per hour, it was more than 100 miles per hour faster than the American P-510 Mustang, the fastest piston-driven allied fighter. Not until after World War II were the Allies able to develop pure jet aircraft. By producing ME-262 jet engines for the Luftwaffe, therefore, GM's Russelsheim plant made a significant contribution to the Axis' technological superiority in the air.

#### 90 PERCENT OF GERMANY'S HALF-TRACKS

On the ground, GM and Ford subsidiaries built nearly 90 percent of the armored "mule" 3-ton half-tracks and more than 70 percent of the Reich's medium and heavy-duty trucks. These vehicles, according to American intelligence reports, served as "the backbone of the German Army transportation system."

In addition, the factories of Ethyl G.m.b.H., a joint venture of I.G. Farben, General Motors and Exxon subsidiaries, provided the mechanized German armies with synthetic tetraethyl fuel.

During 1935-36, at the urgent request of Nazi officials who realized that Germany's scarce petroleum reserves would not satisfy war demands, GM and Exxon joined with German chemical interests in the erection of the Ethyl tetraethyl plants. According to captured German records, these facilities contributed substantially to the German war effort: "The fact that since the beginning of the war we could produce lead-tetraethyl is entirely due to the circumstances that shortly before the Americans had presented us with the production plants complete with experimental knowledge." "Without lead-tetraethyl," the wartime document added, "the present method of warfare would be unthinkable."

It was, of course, in the best interests of GM and Ford to cooperate in the Axis war effort. Although GM, for example, was in complete management, control of its Russelsheim warplane factory for nearly a full year after Germany's declaration of war against the United States on December 11, 1941, its refusal to build warplanes at a time of negligible demand for automobiles would have brought about the economic collapse of its Opel plant. Moreover, it might have resulted in confiscation of the facility by the German Government.

In fact, on November 25, 1942, the Reich did appoint an administrator for the Russelsheim plant who, although not permitted to interfere with the authority of the GM-appointed board of directors, was instructed to oversee operations. Nevertheless, communications as well as material reportedly continued to flow for the duration of the war between GM and Ford plants in Allied countries and those located in Axis territories.

#### WAR REPARATIONS

After the cessation of hostilities, GM and Ford demanded reparations from the U.S. Government for wartime damages sustained by their Axis facilities as a result of Allied bombing. By 1967, GM had collected more than \$33 million in reparations and Federal tax benefits for damages to its warplane and motor vehicle properties in formerly Axis territories, including Germany, Austria, Poland, Latvia, and China.

Likewise, Ford received a little less than \$1 million, primarily as a result of damages sustained by its military truck complex at Cologne.

Since World War II, the rebuilt Russelsheim and Cologne plants have enabled GM and Ford, respectively, to capture more than two-thirds of the German motor vehicle market.

Due to their multinational dominance of motor vehicle production, GM and Ford became principal suppliers for the forces of fascism as well as for the forces of democracy. (End of excerpt)\*

#### GM DENIAL

Shortly after the press was made aware of the above charges levelled by Bradford Snell, the General Motors Corporation issued a curious denial of the story. The GM spokesperson stated that "several other corporations" also invested in pre-World War II Nazi Germany and that none of these companies had liqui-

\*Snell's pamphlet, "American Ground Transport," which contains the above-quoted material, is available without cost from U.S. Senator Philip A. Hart, Senate Office Bldg., Washington, D.C. The pamphlet is copyrighted in 1974. Snell plans to publish an extended version in book form.

dated their assets because of the war. In effect, GM stated that it was not the only offender and that Snell was merely exposing a normal business practice.

When this newspaper telephoned the GM press room for further comment, GM made the following tersely-worded statement: "The allegation that GM assisted in Nazi Germany's war effort is false. A German board of managers appointed by the Nazis assumed responsibility for daily operations of Opel after Sept. 3, 1939. After the U.S. and Germany were at war, the operation was under control of a German alien custodian."

In the course of his presentation, Bradford Snell refutes this GM disclaimer in several places. He cites, for instance, the fact that GM "was in complete management control of its Russelsheim warplane factory for nearly a full year after Germany's declaration of war against the United States . . ."

Moreover, although the German Government could have confiscated the GM holdings, there was actually no reason to do so, since GM was cooperating completely in the German war effort. During this entire period, GM facilities in the Allied countries were in communication with facilities in the Axis countries. Information and material were exchanged. GM's stockholders continued as usual to derive profit from its German facilities.

More importantly, GM made no effort to deny that the Corporation aided in the German *preparations* for war. Hitler made no secret of his aggressive foreign policy aims, and GM may also have been impressed by Hitler's repression of the German labor movement. In any case, while GM and Ford executives were receiving awards from the Fuhrer, the most vicious and anti-democratic regime in modern history was clamped down on Germany.

## CATCH-22

Many Americans might feel outraged by the fact that GM acted to maximize its profits from World War II, regardless of which side won. Patriotic members of the VFW might feel complete bewilderment at the paradox of GM, that ultimate American institution, aiding a wartime enemy. Families of American soldiers killed in that war might wonder at the irony of the country's largest corporation manufacturing the weapons used to kill their sons, husbands or fathers—and then collecting war reparations for the allied bombing of GM's Axis facilities.

But all these paradoxes are easily sorted out by the cost-accounting minds of America's business leaders, like GM's Chairman of the Board, Richard Gerstenberg. For as long as GM is assured of a friendly investment atmosphere, it can just as easily invest in fascist countries as in bourgeois democracies. The investment dollar crosses national boundaries as easily as the wind. The irony is that many Americans defend capitalism because they think it is patriotic to do so.

Were it not a question of fascism and big business versus human progress, one might recall the absurdity of Milo Minderbinder, of "Catch-22" and his fantastic speculation schemes to sell arms, information, food and clothing to generals on both sides. As it turns out, Joseph Heller's fictional imagination in "Catch-22" had real historical reference. As Milo (or GM's German executives) would tell you, war is first of all big business.



