HISTORY AND EXPANSION OF BUS AND TRUCK TRAFFIC IN THE UNITED STATES

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HISTORY AND EXPANSION OF BUS AND TRUCK TRAFFIC IN THE UNITED STATES

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CHAPTER I

INTRODUCTION: BEGINNING AND GROWTH OF AUTOMOTIVE TRANSPORTATION

Today one sees on the streets and highways of the nation innumerable streamlined, graceful, almost silent passenger cars capable of traveling at great rates of speed. Both night and day the highways are dotted at frequent intervals by huge truck-and-trailer combinations weighing many tons and carrying many additional tons of merchandise of all kinds. Some of these freight trucks make regular runs from central distributing markets, carrying goods of all descriptions to neighboring towns within trade areas of two or three hundred miles; others, however, speed along the highways for vast distances across many states or from coast to coast, carrying precious cargoes to supply human needs. At business houses and freight terminals these massive trucks may be seen at rest, while they are being loaded or unloaded. On the highways of the

nation race large, beautiful, powerful busses carrying dozens or scores of human beings from place to place, either on short inter-city runs or for long distances across the land. Today these are the three most pronounced elements of the transportation scene on the highways—passenger cars, truck-and-trailer units, and motor busses—all characterized by beauty, power, speed, and grace of movement. Not always has the picture been as attractive as it now is; and when one notes the vast volume of traffic on American highways today he finds difficulty in remembering that the entire automotive industry is little more than half a century old.

Tremendous strides and amazing progress have occurred since the year 1895, when an event occurred whose significance was not understood or appreciated at the time. In that year the first American patent was granted for an internal-combustion engine for use in self-propelled vehicles. The end of the year witnessed the existence of four "horseless carriages," one of them built by an enterprising mechanic, inventor, watch repairman, and tinkerer named Henry Ford.

The original internal-combustion engine had been the invention of Charles Duryea, who had been born and brought up on an Illinois farm. From his earliest youth he was a tinkerer, building his first bicycle when he was seventeen, and writing a prophetic graduation essay in 1882 in which he said, "The humming of flying machines will be music over all lands, and Europe will be but a half day's journey." After working as a carpenter, millwright, and bicycle repairman, he became an inventor and manufacturer, establishing a factory in the late eighties in Massachusetts, where he devoted most of his time to designing new models of bicycles. During the summer slump in business in 1891, he began experimenting with a gasoline motor for propelling a vehicle, and was ably assisted by his brother, Frank, who was an expert mechanic. By the summer of 1893, the "horseless carriage" was ready for a road trial. When Duryea cranked it from the rear, it began traveling at a speed of ten miles an hour until it stopped because its inventor had not yet found a way to regulate the flow of gasoline into the

motor. He began to improve his models and by 1896 he was making ten cars a year and winning most of the automobile races that were becoming so popular throughout the country. In that year the Barnum and Bailey Circus featured in its daily street parades what it publicized as "the famous Duryea Motor-Wagon, or Motorcycle, the Identical HORSELESS CARRIAGE that won the great race in Chicago last November . . ." What is thought to be the first of the Duryea automobiles is being preserved for posterity in the Smithsonian Institution in Washington, D. C., identified by a placard giving a full account of its invention and early achievements and describing the motor in this manner:

> Four-cycle, water-cooled engine, spray carburetor without float; make-and-break ignition; two speeds forward and one reverse; operated by an up and down movement of the steering handle. Horsepower, 4; weight, 750 pounds.[1]

All of these forerunners of the present-day automobile were crude-looking contraptions, resembling small buggies mounted on bicycle wheels and equipped with chains and gears connecting the wheels to tiny engines which furnished the motive power to send

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[1]David L. Cohn, Combustion on Wheels, pp. 31-34.

them scurrying along, with the sound of much clattering and clanking, at the breathtaking speed of eight or ten miles an hour.

The automobile had been built in Europe before it came to these shores, the first really successful model having been perfected by the German Daimler in 1884, using steam as the source of power. "Horseless carriages" were never very successful, however, until the internal-combustion engine was developed in the United States. In the nine years after the first patent was granted—that is, by 1904—the United States had built 22,419 passenger cars and 411 trucks. The later tremendous growth in the automobile industry was made possible by the development of the petroleum industry, by the construction of highways, and by assembly-line methods of car production which came about after the standardization of automobile parts early in the history of the industry.[2]

Mass-production methods of manufacture, however, did not originate in the automobile industry,

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[2]Edward A. Starr, From Trail Dust to Star Dust, pp. 171-172.

for standardized parts for machinery had been employed for several years in the manufacture of firearms, typewriters, and bicycles. Shortly after the automobile proved to be successful, it became evident that this was a field that could be readily adapted to mass-production methods by the use of standardized parts.

Henry Ford and the Ford Motor Company made the first use of assembly-line methods of production in the automobile industry. After his first model proved successful, Ford began in earnest the construction of horseless carriages in a small converted carpenter shop in Detroit. Within a few years the Ford Motor Company moved into its own factory, the old Piquette Avenue plant. Here, in 1908, Henry Ford and his co-workers established the greatest production record in automobile manufacture up to that time — the assembling of 311 cars in six working days. In the following year, rapidly expanding business made it necessary for the company to move into still a larger factory, the Highland Park plant, where mass production was first seriously planned

and undertaken by the company on an assembly-line basis.[3]

"Probably no single machine created by American genius has had a more profound effect upon the transportation and the way of life of this country than had the Model T Ford."[4] Such a car, made possible through the standardization of parts and the resulting mass-production technique, provided the American people with their first opportunity of possessing a relatively cheap and adequate means of transportation. In 1908, when the first Model T was manufactured, 10,660 of these cars were built, proving to be highly popular. In the nineteen years from 1908 to 1927, a total of 15,456,868 Model T's were produced and marketed. When competing car manufacturers noted the high success of Henry Ford's Model T, they, too, began to produce cars in the low-price field.

It has been said that

> . . . the automobile . . . enacted the first scenes in the drama of transportation that has had few counterparts in the whole realm of economic endeavor. The development

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[3] Ibid., pp. 174-175.

[4] Ibid., pp. 175-176.

> of the motor vehicle industry has been perhaps the most phenomenal and astounding of all industries in the history of the human race. American life and American industry are being actually revolutionized by the automobile. "The gas-driven machine," declares Professor Clyde King, "has brought an era as distinctive and creative as that brought by steam."
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> . . . The automobile of early vintage is thus well described in an advertisement of a motor fuel:
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> "The motor car of 1902 was a noisy reminiscent of the boiler works. It sputtered, balked, and frightened everyone but the daredevil at the wheel. Many a person remembers the famous gag of the day, 'Git a horse,' as the jerky, buggy-wheeled, side cranking, chain drive, 'horseless perambulator' made its way through the town."[5]

During the decade following the appearance of the first successful American automobile in 1895, construction and use of these new machines gained headway only slowly. In 1900, only eight thousand "passenger cars" were registered. By 1910, fifteen years after its invention, the increase in numbers of "horseless carriages" was gaining in rate of growth, but not until 1913 did registrations reach the one-million mark. Trucks and busses came into use about a decade later than the regular passenger automobile. In 1904, trucks were reported for registration for the first time, when 410 were recorded. The next year, 600 trucks were registered.

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[5]Rockwell Dennis Hunt and William Sheffield Ament, Oxcart to Airplane, p. 203.

At first, the increase in numbers was slow, primarily because of the unfavorable condition of roads, but steady growth was experienced until a decade later the registrations were above 100,000.

That the first World War provided a decided impetus to the automobile industry is indicated by the fact that 2,297,996 cars were registered in 1916, whereas 6,771,074 were reported for registration in 1919. Registration of trucks and busses also increased, from 215,000 in 1916 to 794,372 in 1919. By 1920 much improvement had been made in the efficiency and usefulness of passenger cars and other types of motor vehicles, and widespread emphasis on highway construction and the improvement of rural roads also encouraged the use of private cars, trucks, and busses. In the decade from 1912 to 1922 the number of automobiles registered in this country increased at the rate of slightly more than one million per year, the total number growing from approximately one million in 1912 to more than eleven millions in 1922.[6]

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[6]George R. Chatburn, Highways and Highway Transportation, p. 182.

Since the beginning of the industry the United States has remained the auto capital of the world in both manufacture and use of these machines. By 1929, Los Angeles, with one passenger car for every three persons living in the city, had the unique distinction of being "the most thoroughly motorized city in the world." (By 1948, the average for the entire nation was one car for every 3.5 persons.[7]) It was claimed that the intersection of Wilshire Boulevard and Wes tern Avenue in Los Angeles had the heaviest traffic of any corner in the world. Interestingly enough, a check made in 1929 counted 74,755 cars passing this point of intersection during a twenty-four-hour period.[8]

By 1930, passenger-car registrations had mounted to 23,183,241, and in the same year there were 3,473,831 trucks and busses. The nation-wide economic depression which began near the close of 1929 reduced automobile registrations temporarily, but in the middle 1930's the numbers went upward

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[7]Automobile Manufacturers Association, Automobile Facts and Figures, 29th Edition, 1949, p. 27.

[8]Hunt and Ament, op. cit., p. 210.

again until the peak year of 1941, when automobiles totaled 29,240,417, and trucks and busses, 4,911,990. To this number should be added about 550,000 publicly owned owned non-registered vehicles in order to arrive at a fair estimate of the total number in use at that time. World War II, of course, again reduced production, use, and registration, so that by 1944 the number of registered passenger cars had decreased to 25,342,329—a decline of 3,898,088 since 1941. The war period witnessed less proportionalloss in the number of trucks and busses, probably because of their high value as contributors to the total war effort; nevertheless, the number of both types of vehicles combined fell from 4,912,000 to 4,533,000. Total registrations for 1948 amounted to 41,151,326, including 7,227,380 trucks. By 1949 there existed over 43,000,000 registered motor vehicles on the roads of the nation.[9]

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[9]The above data represent composite statistics from several sources, namely: Automobile Manufacturers Association, op. cit., p. 21; Emory R. Johnson, Transport Facilities, Services, and Policies, pp. 204-205; and Spencer Miller, Jr., "History of the Modern Highway in the United States," Highways in Our National Life, edited by Jean Labatut and Wheaton J. Lane, p. 96.

The following tabulation of automobiles registrations for five-year intervals between 1895 to 1945 indicates the rapid growth in the number of vehicles in use:

1895	4
1900	8,000
1905	78,000
1910	468,500
1915	2,445,666
1920	9,231,941
1925	19,937,274
1930	26,545,281
1935	26,227,276
1940	32,025,365
1945	30,638,429[10]

In the above list, every year with the exception of 1935 and 1945 shows a much larger number of automobile registrations than the year before. In the decade from 1920 to 1930 the number of registrations increased almost threefold. As already mentioned,

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[10]Automobile Manufacturers Association, op. cit., p. 21; Truman C. Bigham, Transportation Principles and Problems, p. 46.

the economic depression of the early 1930's and the world conflict in the 1940's changed the upward trend in automobile registrations. The depression made money scarce and fewer cars were bought; during the Second World War money was comparatively plentiful but automobiles were almost unobtainable because of the scarcity of essential materials and the conversion of automobile factories into plants making munitions and war machines. At the same time, many people were using their money for other purposes rather than the purchase or registration of cars, and many men who would otherwise have registered cars were away at war. In 1944, even in the face of the declines brought about by the war, the United States claimed two thirds of the entire world's car registrations. In that year, there were enough cars in operation in the United States to equal one vehicle for every four persons in the country.[11] Four years earlier, in 1940, there had been an equivalent of one car for every five persons.[12]

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[11]Bigham, op. cit., pp. 45-46.

[12]Emory R. Johnson, Grover G. Huebner, and G. Lloyd Wilson, Transportation: Economic Principles and Practices, p. 560.

The overwhelming majority of all motor vehicles has always consisted of passenger cars, although the manufacture and registration of trucks and busses have rapidly increased, especially since 1914. Truck registrations increased consistently between 1918 and 1930 at a somewhat faster rate than was true of passenger cars. The average annual rate of increase in registrations for this period was 12.94 per cent for passenger cars (including busses) and 16.15 per cent for trucks.[13] But in 1931 truck registrations also declined slightly, although the depression did not reduce registration of trucks as much as it did that of automobiles, perhaps because of the greater utilitarian value of trucks. Bus registrations increased rapidly in the five years from 1921 to 1926, followed by a slower rate of growth for the next five years. By the end of 1931 it was estimated that about 98,000 busses were in use in the nation, fifty per cent of them in revenue service. Some forty per cent of those engaged in

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[13]Harold G. Moulton, The American Transportation Problem, pp. 517-518.

revenue traffic were limited to city operations.[14] The year 1942 witnessed the number of busses in use in the nation rise above the hundred-thousand mark, when 102,093 such vehicles were registered. By 1945 the number had mounted to 112,253, and in 1948 to 133,430. Beginning in 1920, when the number of trucks first passed the one-million mark, they increased at the rate of more than a million each five years for the next twenty years. In 1940 there were more than four and a half million trucks in the nation; in 1945, 4,834,742; and in 1948, 7,227,380.[15]

As registration of motor vehicles increased rapidly, so also did the production of such increasingly popular means of transportation for both persons and freight. A million cars were manufactured in the United States during the period from 1895 to 1912, but this number was a mere intimation of what was to follow in the industry. In the forty-nine years from 1900 to 1948, inclusive, 102,157,033

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[14] Ibid.

[15] Automobile Manufacturers Association, op. cit., p. 21.

cars were produced by American factories. The factory price of this huge volume of automotive production, including passenger cars, trucks, and busses, was $79,044,284,004, according to plant records of annual sales.[16] By 1924, among all of the manufacturing industries of the country, the making of motor vehicles had become of first rank in the value of the total product. In that year, the wholesale value of motor vehicles amounted to $2,288,677,139. The year 1929, with a total of 4,587,400 vehicles, was the peak year for the manufacture of passenger cars, with 1948 a close second with 3,909,270 cars produced. As a result of the depression, the manufacture of passenger cars dropped in 1930 to approximately one-half what it had been the year before, and in 1931, 1932, and 1933 production figures remained relatively constant at approximately one-third the 1929 record. In only three years during the forty-nine-year period did the production of trucks and busses combined surpass the one-million mark — 1941, 1947, and 1948 — with the latter year the peak period of production. Because of the record

manufacture of passenger cars in 1929, the total number of all motor vehicles manufactured in that year was the nation's record, totaling 5,358,420; however, 1948 ran a close race with 5,285,425 motor vehicles rolling from the assembly lines. Because of excessively inflated prices, the wholesale value of the total automotive production in 1948 amounted to $6,711,612,000, by far the highest valuation of annual production, equivalent to approximately twice the total value of production in 1929, the peak year.[17]

Because of the large-scale conversion of automobile plants for the production of armaments and airplanes, few cars were produced for passenger use in 1943 and 1944, the actual number manufactured in the United States in these two years being 139 and 610, respectively.[18] The number of trucks manufactured was not much reduced by the war because of the need of vast numbers of trucks in connection with the military campaigns and the transportation of essential war materials and provisions. Of a total of 743,750 motor trucks and tractors

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[17] Ibid.

[18] Ibid.

produced in 1944, only 119,081 were for civilian use, whereas the remaining 624,669 were for military purposes. The number of busses constructed in 1943 for civilian and military use was less than half of the normal annual total, but in 1944, production rose again to more than 14,000.[19]

The above glimpse into production figures and registration of motor vehicles has served to indicate that

> . . . America had with remarkable swiftness achieved unquestioned pre-eminence in this new industry, partly because of the abundance of raw materials, the highly standardized manufacturing methods, and a very real demand which was admirably supplied by such a means of transportation; but chiefly, no doubt, by virtue of the skill and ingenuity of engineers and workmen and their dynamic qualities that prompted them to adopt the very newest methods.[20]

Shortly after the birth of the automobile industry it became generally recognized that "an automobile without roads was as useless as a pen without ink."[21] For this reason, the first quarter of the twentieth century witnessed nation-wide emphasis upon the improvement of rural roads and the construction of far-reaching networks of highways. One

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[19]Johnson, Transport Facilities, Services, and Policies, p. 206.

[20]Hunt and Ament, op. cit., p. 204. [21]Ibid.

finds it difficult to determine whether increased road building was the result of the mounting popularity of the motor car or whether the general use of the motor car resulted from the better roads that were becoming available. At any rate, both roads and motor vehicles developed concurrently, and each became a strong impetus to the growth of the other.

In the early years of the twentieth century the motor bus began to evolve from the "jitney" car, then engaged in performing pioneer taxi service, primarily in cities but to some extent on short runs between cities and towns. The motor truck made its appearance as a delivery vehicle, privately operated. Until the coming of the first World War almost all trucks were small delivery-type machines, and not until the United States entered the war was much progress made in developing larger trucks and in the beginning of transportation of merchandise in "over-the-road" trucks. During the war, however, the government urged shippers to substitute motor-truck service, wherever possible, for the railroad

freight transportation so necessary at the time for the movement of war materials.[22]

The efficiency, attractiveness, and utility of the motor car underwent steady improvement in a never-ending evolutionary process on the part of designers and manufacturers, until Hunt and Ament could report in 1929:

> From the first ungainly "horseless carriages" of scarcely more than thirty years ago, in which sputtered a noisy, diminutive single-cylinder engine, it is a far cry to the elegance and refinement, the beauty and power — the sheer luxury — of the modern automobile, whose name and number are legion on the smooth streets and glorious highways. . . .[23]

In spite of the rapidly increasing numbers of busses and trucks on American highways and city streets, surveys indicate that passenger-car traffic accounts for from eighty-five to ninety per cent of the vehicle mileage traveled annually on the highways.[24]

For years, about three quarters of a million workers have been employed in the automobile, body, and parts factories of the United States, and over

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[22]Starr, op. cit., p. 176.

[23]Hunt and Ament, op. cit., p. 213.

[24]Moulton, op. cit., pp. 517-518.

six million others, including garage men, filling-station attendants, drivers, and raw-material workers, are dependent upon the automobile industry for their livelihood. Unquestionably, among the industries of the nation, that of motor-vehicle manufacture has become a powerful giant.[25]

The many figures quoted in preceding pages have doubtless been dull and uninteresting to the reader, but they have served to indicate something of the tremendous growth and expansion in the manufacture and use of motor vehicles in the United States and to reveal the importance of the automotive industry. In fact,

> The expansion of highway transportation is probably the most significant twentieth-century development in the entire field of inland transportation. Among its effects are the following: an enormous increase in the volume of and market for transportation; extension of effective transportation facilities to many unserved locations; destruction of the virtual monopoly of intercity transport long held by the railroads; a radical alteration in the policies of railroad management; creation of difficult problems of co-ordination among the various carriers; and a notable modification and extension of public regulation. Automobiles and highways are not alone accountable for these things, but theirs is a heavy responsibility.[26]

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[25]Franklin M. Reck, The Romance of American Transportation, p. 200.

[26]Bigham, op. cit., p. 44.

It has been estimated that in 1940 the American people traveled a total of 565,000,000,000 passenger-miles by motor over all roads and streets in the country. This total accounted for 90.7 per cent of all passenger traffic by all types of transportation facilities. Of this total motor traffic, 86.2 per cent of the passenger-miles were traveled by private cars and 4.5 per cent by commercial busses. All other means of transportation totaled only 9.3 per cent of the total passenger-miles traveled by the American people, including 8.4 per cent for the railroads, 0.5 per cent for waterways, and 0.4 per cent for airlines. In 1940, trucks navigating the highways of the nation carried over 57,000,000,000 ton-miles, traveling about 30,000,000,000 vehicle-miles. At the same time the railroads traveled approximately 375,000,000,000 revenue ton-miles.

The average number of miles traveled annually by each motor vehicle in the country rose considerably--- from 5,000 miles in 1920 to 9,700 miles in 1948. The total distance traveled in 1948, including city traffic, has been estimated at 397,589,000,000

vehicle-miles. Of this total, 198,507,000,000, or about one half of all vehicle-miles, were traveled on highways outside of cities and towns. Eighty-one per cent of the total traffic in this year was credited to passenger cars, eighteen per cent to trucks and other highway freight-carrying vehicles, and one per cent to motor busses.[27]

In this brief introductory chapter an effort has been made to provide an insight into the origins and growth of automotive transportation, with the purpose of indicating its amazing rapidity of development and its universal appeal to and use by the American people. In fact, transportation by motor vehicle has grown to such an extent in the half century since its beginning that, "counting all classes of carriers, more traffic moves by highway than by all other means of transportation combined."[28] An industry so huge and a service so universal are bound to exert far-reaching social and economic influences upon American society.

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[27]Miller, op. cit., p. 96.

[28]Bigham, op. cit., p. 88.

In the succeeding chapter a discussion will be presented of the development of transportation of merchandise by means of motor trucks upon the highways of the United States.

CHAPTER II

DEVELOPMENT OF TRANSPORTATION OF MERCHANDISE BY MEANS OF MOTOR TRUCKS

> After the horseless carriage had survived its initial ridicule and proved itself more than a mere novelty, its practical value as a means of transportation became obvious. It was a short step from the passenger-carrying automobile to the freight-hauling motor truck. In fact, the first truck, which made its appearance on the streets around the turn of the century, was little more than a converted automobile carriage, with a heavier axle and springs and a strengthened frame.
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> Feeble as they were compared with the streamlined vehicles of today, the early passenger vehicles and trucks were soon far superior to Old Dobbin. Individuals began replacing their buggies with the new-fangled automobiles, and farmers, draymen and others began hauling to market their produce and freight in gasoline-powered trucks.[1]

The first trucks made from converted passenger cars were called "business wagons."[2] First coming into existence in 1904, according to all available records, they numbered 411. As previously indicated (see p. 8), 410 trucks were registered in the first year of their appearance, 1904; thus, apparently

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[1] William A. Bresnahan, "Freight Transportation on the Highway," Highways in Our National Life, edited by Jean Labatut and Wheaton J. Jane, p. 247.

[2] Chatburn, op. cit., p. 182.

one truck in existence was not reported for registration.

Like the passenger car and the bus, the truck has undergone almost incredible improvements in the half century since its appearance. Soon the "business wagon" became extremely popular on the farms of the North and the Mid-west, where it was used for ordinary hauling purposes and also for taking crops and livestock to market. As trucks steadily grew larger, heavier, and more plentiful, and as their carrying capacity mounted, it became apparent that heavier concrete pavement was necessary for the highways used by such trucks.[3]

> Truck transportation began with the substitution of small delivery trucks for horses and wagons in local service. As the equipment developed in carrying capacity and in reliability, and as costs decreased, the practical question arose in the mind of the local drayman as to why he could not truck his load direct to the consignee in the next town. Heretofore he had picked up the consignment from the shipper and drayed it to the local freight station. Attendants hand-trucked the shipment into a rail car for a 20- or 30-mile haul to the adjoining town. Here additional attendants trucked the shipment from the car to the platform where it was picked up by a second drayman for final delivery to the consignee. The answer lay in the ability of the truck to provide regular, reliable operation. Once this was proved,

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[3]Hunt and Ament, op. cit., pp. 221-222.

> runs were made to neighborhood points, and these runs gradually extended until the long-distance operation of today was reached.[4]

As both trucks and highways improved, and the new mode of transportation for goods became more common on the highways and in the cities and towns, the public in general began to accept motor transportation of merchandise as a valuable new development, and the truck began to take over many of the functions and services formerly performed by the horse and wagon locally and by the railroads in intercity commerce. However, as late as 1916, the railroads remained virtually unchallenged in the volume movement of freight between centers of population. It was for this reason that, just prior to the first World War, many individuals believed that the trucking industry was approaching its peak of service and that it would be destined to continue only as a localized supplement to railroad transportation. At that time, the nation boasted some 200,000 trucks, most of them of the small delivery variety for local use. But the entry of the United States into the war

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[4]Ford K. Edwards, Principles of Motor Transportation, p. 28.

in 1917 proved to be the incentive that sent highway freight transportation on its way to becoming one of the leading industries in the country.[5]

At first the automobile was looked upon as a plaything and riding in the new "horseless carriage" was regarded as a sport, like yachting. Before long, however, enterprising business men began to wonder whether cars could be used for carrying something besides adventurous men and women attired in dusters and goggles. More or less as an experiment, a few merchants bought passenger cars and had them converted into delivery trucks by having carpenters build special bodies for them. For a while all trucks were converted passenger cars. Then automobile manufacturers began to realize that if automobiles were to be used for hauling heavy loads, the chassis must be stronger and larger and the engine more powerful. With this realization, the commercial manufacture of trucks became a recognized phase of the automobile industry.

For a while, as already indicated, trucks were used only for deliveries and hauling in cities and

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[5]Bresnahan, op. cit., p. 248.

towns. But here and there, as early as 1907, men who owned trucks were offering to carry goods between closely situated cities or towns, and thus, in a small way, intercity trucking was born. Around the larger towns trucks were used to carry farm goods to markets.

Until America entered the World War in 1917, the use of trucks was confined to towns and short intercity hauls. Long-haul trucking was unheard of — the roads were too bad, and its possibilities were unrealized. During the war, however, critical transportation conditions made long-haul trucking necessary, regardless of road conditions. In normal times the railroads had been performing adequate freight service in an efficient manner, but the tremendous volume of goods requiring movement during the war was too much for them, as they had not had time to construct additional equipment or terminal facilities. Vast mountains of supplies had to move from collection depots to army camps and to ports for shipment overseas. Freight depots in the cities became so congested that trains often had to unload

bales and boxes along the tracks outside the city. What could be done under these congested circumstances? The motor truck appeared to be the only possible answer, and it was looked upon with misgivings in some quarters. Emergency measures had to be adopted, however, and President Wilson appointed a Highway Transport Committee headed by Roy Chapin, a Detroit automobile man. Chapin knew that the government had ordered some 30,000 trucks for shipment to France, where they were so vitally needed in distributing food, clothing, ammunition, and supplies to the troops. Ordinarily, these trucks would have been loaded on railroad flatcars at the factories and shipped to Atlantic ports for shipment overseas. Instead of that, Chapin had all of these trucks, as they became ready for delivery, piled high with clothing, food, guns, helmets, and all other types of war supplies, and driven across country to New York, Boston, Philadelphia, and other Atlantic ports. Lunging and chugging over bad rural roads to the Atlantic, often getting stuck in the mud or plunging into shallow rivers when bridges

broke under them, these trucks and others to follow them demonstrated on a large scale the practical possibilities of long-haul trucking, even with poor roads.[6]

Not only were these 30,000 trucks employed as freight carriers during the war, but many other trucks were utilized as well. The tremendous traffic of manufactured goods and the movement of troops and war materials made it necessary to use every available means of transportation in order to keep supplies and men moving steadily toward the war front. The importance of trucks in the transportation of freight was further emphasized by the fact that railroads increased their freight rates to meet rising costs of operation and because of the urgent demand for rail services. Railroad officials, as a rule, did not try to meet motor competition, thinking of it only as a temporary development which would subside after the war and leave railroads in sole possession of the country's freight business. After the war, however, the general practice of

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[6]Reck, op. cit., pp. 201-203.

so-called "hand-to-mouth" buying of goods by merchants and the usual plan of maintaining small stocks of goods requiring frequent replenishment were favorable to the development of motor truck transportation because of the truck's ability to haul small quantities of goods at high rates of speed.[7]

The Goodyear Tire and Rubber Company of Akron, Ohio, was perhaps the first business concern to use trucks on regular schedule for long hauls. During the World War this firm established a trucking route from Akron to Boston, 740 miles in length, and operated seven large trucks regularly over it. Because the bridges of New York State were too flimsy for supporting the heavy vehicles, the route was charted through Pennsylvania to New York City and up the coast to Boston instead of directly eastward to Boston from Akron through New York State. Goodyear had two reasons for establishing this route: (1) to test the big new pneumatic tires by giving them actual road service (all trucks until that time had used solid tires), and (2) to deliver tires to eastern

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[7]G. Lloyd Wilson, The Transportation Crisis, p. 153.

dealers and for overseas shipment to the army. Within a year the big Goodyear trucks were making the trip each way in four days and were giving regular service along the entire length of the route. This experiment proved to be a practical demonstration of the possibility and effectiveness of long-haul trucking and at the same time emphasized the values of the pneumatic tire.[8]

In 1910, 6,000 motor trucks were manufactured, and total registration of such trucks reached 10,000. In 1915, 74,000 trucks were produced, representing a three-hundred-per-cent increase above production figures for 1914, thus reflecting the increased demand for trucks as a result of the war, even before the United States became a participant in the conflict. In 1915, 136,000 trucks were registered. During the period from 1915 to 1929 truck production rose steadily and rapidly. By 1920 there were 1,006,082 motor trucks in service in the United States; five years later, in 1925, the number of registrations had risen to 2,440,854; by 1929, there

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[8]Reck, op. cit., p. 203.

were 3,379,854 trucks in use in the country.[9] Thus, the number of trucks registered increased more than five hundred per cent in the nine years from 1920 to 1929. When the United States entered the second World War in 1941, almost 5,000,000 trucks were in use, representing more than half of all the motor trucks in the world. At the close of 1948, 7,227,380 trucks were registered in the nation—more than in all other countries of the world combined.[10]

Because of the economic depression beginning in 1929, the number of automobiles manufactured and registered was considerably reduced, as has already been indicated. In 1930, however, the registration of motor trucks was up three per cent above the 1929 total, although in 1931 the total registrations of trucks were 0.6 of one per cent lower than the preceding year.[11] Thus it is indicated that the influence of the depression upon the number of truck registrations was negligible. This probably is due to the fact that trucks possess a much greater

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[9]Wilson, op. cit., pp. 139-140.

[10]Bresnahan, op. cit., pp. 248-249, 251; Automobile Manufacturers Association, op. cit., p. 21.

[11]Wilson, op. cit., p. 140.

utilitarian value than do passenger cars; that is, they can be used much more readily for earning a livelihood or for realizing an additional income.

By 1923, wherever roads were dependable and passable at all seasons of the year, truck lines were springing up between towns and were establishing more or less regular schedules in some instances, although most of them made runs when their services were engaged. These truck lines were still entirely local in character. The most profitable length of haul was that which could be made, together with the return trip, in a day, allowing enough time at terminals for loading and unloading. Forty to fifty miles was the usual length of the hauls, although routes double this length were, in some instances, being found practical.[12]

One writer, in 1923, emphasized the fact that civic groups in many cities were making efforts to remove horses from city streets for health reasons and for the sake of general cleanliness. Then he observed:

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[12]Chatburn, op. cit., p. 194.

> It may be possible that in a few years horses will be barred from the streets for sanitary reasons; then it will be necessary to use motors for all sorts of deliveries, possibly large ones for hauling to the distant districts and small ones for the house to house delivery in the district.[13]

Although the experiment of the Goodyear Company during the war to test their pneumatic tires was highly successful and the worth of the new tires was demonstrated beyond room for any doubt, the company spent several years perfecting these tires before they became generally available to the public. Early in the 1920's, however, the growth of commercial vehicle transportation was greatly stimulated by the availability of the new "hollow tires." Whether the pneumatic tire resulted from the widespread highway construction that characterized the period or whether highway development followed the adoption of pneumatic tires is impossible to determine. Both were concurrent developments, and each assisted the other in emphasizing the potentialities of highway transportation for freight as well as for passengers. Because of skepticism on the part of truck owners about the ability of the "hollow tires" to support

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[13] Ibid., p. 190.

heavy weights, the first trucks to use pneumatic tires were light-duty types, while the medium and heavy vehicles still used solid tires which restricted them to comparatively slow speeds. By the end of the decade, however, even the heaviest trucks were beginning to use pneumatic tires, and by 1932 heavy-duty, low-pressure pneumatic tires were standard equipment on medium and heavy-duty trucks as well as on lighter vehicles.

Pneumatic tires can carry greater loads at continuous high speeds, and their use made it possible to carry freight and produce by truck over long distances at high speeds, thus making the truck an effective competitor with the railroad in long-distance hauling on the basis of operating efficiency and costs.[14]

> **The rapid obsolence of the solid tire is one of the most significant recent developments in motor transportation. Substitution of pneumatics and particularly of low-pressure tires make [sic] possible the carrying of heavier loads in lighter vehicles at greater speed and with less destructiveness both to vehicles and to road surfaces. Between 1921 and 1931 the proportion of annual truck production which was equipped with solid tires decreased from 28 per cent to 3.1 per cent.**

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[14]Bresnahan, op. cit., p. 248.

> Dual pneumatic and balloon tires are now in common use on all types of trucks, and the single pneumatic tire equipment is rare on the larger trucking units operated by common carriers and contract haulers in inter-city movements. Less than 5 per cent of the heavier trucks and buses [15] manufactured and equipped with pneumatic tires in 1928 carried low-pressure tires, but by the end of 1931 about 90 per cent of these vehicles were so equipped. The tendency in the matter of tire equipment is clearly [1933] toward the exclusive use of pneumatics with a preponderance of balloon tires in trucking operations which utilize the rural highways.[16]

If this country's commercial trucks were lined up bumper to bumper, they would stretch eastward across the United States, the Atlantic Ocean, and Europe to Moscow and then across the wide expanse of European Russia into the wastelands of Siberia, a distance of considerably more than 11,000 miles. This vast fleet of commercial freight-hauling trucks means that "we have become dependent, to an extent which few of us fully realize, upon highway freight transportation for virtually everything we eat, wear and use."[17]

There are two general, broad types of local or long-distance trucking operations. In the first place, there are fleets of trucks maintained by

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[15]In quotations the original writer's spelling of "busses" or "buses" is retained, but elsewhere in the text the form "busses" is used.

[16]Moulton, op. cit., pp. 524-525.

[17]Bresnahan, op. cit., p. 252.

private companies to carry their own goods or to bring in needed raw materials. These vehicles may be owned outright by the company, or they may be operated under the supervision of the company under contract with the truck owners. Then there are the so-called common carriers which, like the railroads, will carry anybody's goods for hire.[18]

Manufacturers often use their own trucks to distribute their products both to wholesale and to retail outlets. In like manner, chain stores often use their own trucks to deliver merchandise for restocking individual stores. Merchants, construction companies, and farmers, as well as many other classifications of individuals, also may own private carriers for use in their business.[19]

Many trucking companies engaged in local city service were forced into the necessity of offering intercity hauling services if they wanted to continue in business. With the coming of the long-distance haulers with their door-to-door pick-up and delivery

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[18]Reck, op. cit., p. 204.

[19]Johnson, Transport Facilities, Services, and Policies, pp. 206-207.

of merchandise, these intercity carriers were receiving most of the hauling business. Consequently, many small local trucking agencies began to offer out-of-town hauling facilities, and often developed into major firms in their respective localities. As a general rule, however, as it was written in 1931,

> The typical truck operator starts up in business moving products from farm to city, or manufactured articles from some small-town factory to some bigger market center. Possibly he is some farmer hard-pressed for ready cash. After a trip or two, he sees that he is losing money by driving back an empty truck. He starts looking for return tonnage, quotes less than railroad rates to get it. His next step is to make a deal with some solicitor in a city, establish an office there, arrange for terminal service. He becomes a transportation agency maintaining offices in two or more cities.[20]

The common carrier serves equally all persons or firms desiring his services in the field or fields of transportation which he serves. He is subject to government regulation as to rates charged, services rendered, routes traveled, and so on. Common carriers are divided into two distinct types: (1) those having operating certificates carrying no restrictions as to the kinds or types of goods to be hauled; and (2) those holding permits to haul only certain

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[20]"Railroads Hard Hit as Truck Lines Expand in Middle West," Business Week, April 22, 1931, p. 20.

classes of merchandise for which their equipment may be especially designed. These latter include oil-tank lines, van lines, truckaway automobile carriers, refrigerated trucks, and others.

The contract carrier limits his services to one or more shippers with whom he has either oral or written contracts for the transportation of merchandise. The number of different shippers he accommodates depends upon his facilities, the types of service desired, the distances of the hauls, and the quantity of hauling to be done for each shipper. Ordinarily, the contract trucking firm is subject to no regulations except motor-vehicle laws and restrictions applicable to all users of highways. He has the right to make his own terms with shippers who desire his transportation services.[21] The contract carrier may or may not have regular routes, and he is not likely to have established routes unless his services are engaged exclusively by one large shipper. Common carriers, on the other hand, are "operated on regular schedules over regular routes

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[21]Edwards, op. cit., pp. 29-30.

between fixed termini and hold themselves out to furnish transportation for the public generally. Common carrier motor freight operators often carry all kinds of freight at rates which are usually subject to regulation by state regulatory bodies."[22] Bona fide common carriers often complain that contract carriers, which are free from rigid regulation, cut rates and take unfair advantage, especially in seeking to obtain return loads, whereas the common carrier is prevented from doing so by the regulations under which it has to operate.

A fourth type of trucking company may be called the "anywhere-for-hire" carrier, which is a type of common operator. Like the regular common carrier, he serves the public generally, but he does not operate over established routes or on fixed schedules. Some of these "anywhere-for-hire" carriers haul anything that they can handle, but others specialize in certain kinds of traffic for which they have special facilities.[23]

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[22] Wilson, op. cit., p. 155.

[23] Ibid., p. 156.

Of the 3,500,000 trucks in use in the United States in 1933, it has been estimated that approximately one million were farm owned and two million others were privately owned and not operated for hire. Of the remaining half a million vehicles, approximately 200,000 were common carriers and 300,000 were contract carriers. This means that about eighty-six per cent of all the trucks in operation in 1933 were owner operated, the load and the truck being owned by the same individual or firm. Contract carriers, operating for hire or under hauling agreements with agencies or companies, represented about nine per cent of the total trucks, and common carriers, operating for hire over fixed routes on regular schedules at published rates, accounted for the remaining five per cent. In that year, 1933, approximately seventy per cent of all trucks using the highways of the nation were operated individually by persons owning but one truck each, whereas the balance was distributed among approximately 272,000 fleets of trucks, only fifty-five

of which contained more than one hundred motor trucks each.[24]

Before 1929 eighty-five per cent of the annual truck production was in the light-weight class (three-fourths ton to 1.5 tons), but by 1931 this group of light-weight vehicles accounted for only twenty-six per cent of the yearly total of motor trucks manufactured. In two years' time the bulk of truck production had shifted to the medium-capacity class (1.5 to 3.5 tons), accounting in 1931 for about seventy per cent of the annual truck production. Until 1933, the manufacture of heavy-duty trucks (3.5 tons and over) had never accounted for more than five per cent of the total truck output. Since then, much emphasis has been placed upon the manufacture of the heavy truck-and-trailer units with carrying capacities of many tons. The production figures listed above do not, of course, indicate accurately the proportion of the various sizes of trucks in actual operation at any one time. This is reflected in the fact that in 1930 sixty-three per cent of all

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[24]Moulton, op. cit., pp. 519-520.

trucks in operation were in the light-weight class, slightly over thirty per cent in the medium-weight class, and about three per cent in the heavy-capacity group.[25] These percentages include all owners of trucks, whether individuals, firms, or trucking companies. At the same time, however, similar percentages were noted for the three weight classes of trucks in use by commercial trucking companies. Fifty-eight per cent of the trucks operated by these trucking firms were of the light-weight class, thirty-two per cent in the medium-weight class, and ten per cent in the heavy-duty group.[26] Thus it is evident that, at that particular time, a considerably larger percentage of heavy-duty trucks were used by the commercial trucking firms than were to be found among all other truck owners combined.

As might be expected, the distribution of motor trucks varies widely with the different regions of the country. In 1931, for example, approximately 7,000 trucks were registered in the entire state of Nevada, whereas New York State reported more than

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[25] Ibid., p. 519.

[26] Ibid., p. 525.

331,000. At that time almost half of the nation's trucks were owned in eight states. New York, California, Pennsylvania, Texas, Illinois, Ohio, Michigan, and New Jersey reported total combined registrations of 1,686,263 trucks out of the nation's total of 3,466,303 — or forty-nine per cent of the total number in use in the United States.[27] In 1948 these states, with the exception of New Jersey, were still the nation's leading consumers of trucks, with Texas out in front with the purchase of 67,737 motor trucks. In this more recent year these seven states accounted for approximately one third of the national sales of trucks.[28] Evidently, trucks tend to be concentrated in areas of greatest industrial, commercial, and agricultural significance.

When the Interstate Commerce Commission conducted a detailed survey in 1931, it learned that the rapid construction of hard-surfaced highways throughout the nation and the almost universal use of pneumatic tires had greatly broadened the limits of

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[27] Ibid., p. 520.

[28] Automobile Manufacturers Association, op. cit., p. 17.

truck operations which, in 1931, averaged from 250 to 300 miles on regular overnight routes and up to 500 miles or more on irregular hauls. Population centers, industries, jobbing centers, and balanced loading in both directions were —and still are — important factors determining the length of the haul which was economically profitable. Probably the question of return loads when the truck has delivered its initial consignment has always been the principal factor in the profitable transportation of freight by motor truck. If a truck is assured of a profitable return load, it can afford to make a longer single run that if it has to return empty or only partially loaded. In 1929 the maximum truck haul for regular over-night service out of Chicago was from 175 to 200 miles, but by 1931 the distance had increased to three hundred miles or more. Better roads, faster speeds, improved trucks, and more economical operation were factors in this increased distance.

At that time ninety per cent of all groceries jobbed out of Springfield, Missouri, to distances of

150 miles or less were trucked. About seventy-five per cent of the less-than-carload traffic moving to and from Chicago within a sixty-mile radius of the city limits was moved by truck. In Oregon, trucks operated over regular routes ranging in length from six to 450 miles with an average length of 69.9 miles. Regular, scheduled truck haulage had been established between Portland, Oregon, and San Francisco — a distance of 727 miles by highway. Similar runs were being made from Portland to Salt Lake City — a distance of 940 miles. At this same time, twenty years ago, the Commission discovered numerous other cases of regular truck hauls of great lengths, such as the movement of tires from Detroit to Kansas City (650 miles) and from Detroit to Atlanta (800 miles). Trucks which came from Detroit were able to make deliveries in Kansas City on the second afternoon, whereas rail shipments were not received until the fourth morning. In Atlanta, third-day deliveries were made regularly from Detroit by truck, fifty-day deliveries by rail. In addition to being much speedier, truck transportation

was also slightly more economical, although the difference was not sufficient to have been decisive had other factors been equal. Rates were almost identical, with a slight advantage going to truck transportation: the rate on tires from Detroit to Kansas City was $1.20 per one hundred pounds by rail and $1.15 by truck; from Detroit to Atlanta, $1.34 by rail and $1.30 by truck. This particular example of the shipment of tires by truck is only indicative of findings disclosed by the Interstate Commerce Commission in many areas of the country and in connection with the transportation of many different commodities. In most instances, truck shipments reached their destinations considerably faster than those sent by rail, and the cost was usually slightly less by truck.

Even twenty years ago, in 1931, cars were being trucked from Michigan factors for distances up to 1,500 miles. Especially were long hauls being made by trucks carrying fresh fruits and vegetables to insure more rapid delivery to markets and better quality at the time of delivery. For instance, fruits

and vegetables from northwestern Arkansas were being hauled regularly in all directions to distances up to seven hundred miles. Fifty per cent of the grape crop of Arkansas in 1930 was moved out by truck for distances up to five and six hundred miles. In California, fruit and vegetable trucks were running daily between Los Angeles and San Francisco, making the distance of 452 miles in thirteen hours. On the Pacific coast the range of profitable truck operation increased from maximum routes of 130 to 140 miles in 1925 and 1926 to four hundred miles or more in 1931, provided there was profitable return loading.[29]

In 1928-1929, the truck shipment of fresh fruits and vegetables at eleven large population centers of the nation ranged from two per cent of the total incoming shipments of these products at Boston to fifty-seven per cent at Los Angeles. Redistribution by truck from the large city wholesale markets to surrounding trade territories was a common practice by 1930, when it was estimated that fifty per cent of

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[29]Edwards, op. cit., pp. 31-33.

the total shipments received at the Pittsburgh wholesale fruit and vegetable markets was in turn trucked out to surrounding towns within a hundred-mile radius.

By 1930, great numbers of new automobiles were being shipped from the manufacturing or assembly plants to dealers by truck. On the so-called truck-aways or single-decked trailers, three or four cars could be carried; and the more recent development of double-decked trailers made possible the hauling of six new cars by one truck-and-trailer unit.

Industrial centers of Pennsylvania were reporting that from a third to half of the coal used in the plants was being hauled in by trucks. Cotton, too, was moving in great volume by trucks: in 1929, at Mobile, Alabama, 93.6 per cent of the cotton was brought in by rail, 6.3 per cent by truck; but in 1930, 62.4 per cent came by rail and 37.6 per cent by truck. At Pensacola, Florida, the movement of cotton into the port by truck increased from 40.5 per cent in 1929 to 91.9 per cent in 1930. Thus, even twenty years ago, the use of trucks for the

transportation of cotton to shipping points was increasing by leaps and bounds. In the South, the movement of cotton by truck was quite common up to distances of three hundred miles, and many hauls were made up to five or six hundred miles.[30] Today almost all cotton is shipped by truck.

In 1938, one third of the fruits and vegetables brought into twelve principal cities came by truck, compared to sixty-seven per cent by rail. The percentages varied widely, of course, as indicated by the following six cities with their percentage of fruit and vegetable receipts arriving by truck in this particular year: Chicago, twelve per cent; Kansas City, twenty-one per cent; New Orleans, thirty-two per cent; Philadelphia, forty-four per cent; Atlanta, seventy-three per cent; and Los Angeles, ninety-two per cent.[31]

These large volumes of truck freight were made possible by the rapid increase in the number of trucks in hauling service. With the return of prosperity after the depression, business conditions

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[30] Ibid., pp. 33-36.

[31] Stuart Daggett, Principles of Inland Transportation, p. 89.

improved and all types of economic transactions were booming. In 1938, about 1,400 trucks, on an average, entered freight service each week, or approximately two hundred each day of the year. This great influx of carriers provided additional facilities for transporting all sorts of commodities and at the same time foretold future serious traffic and maintenance problems on the nation's highways.[32]

Today practically all farm products are carried by truck either direct to the market or to the nearest railroad terminal, and fifty-six per cent of all livestock received by all stockyards in 1942 came by truck. Large percentages of mine, forest, and factory products go over the nation's highways in heavy trucks to the consumer, to wholesale distribution markets, or to railroad shipping points. In general, it is usually more economical and more efficient to ship by truck for distances of two hundred miles or less, although the length of favorable hauls varies widely with the types of merchandise

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[32]Magner White, "Freight Trains on Our Highways," Saturday Evening Post, CCXII (August 19, 1939), 9.

being transported and with the area of the country in which shipment is made.[33]

In 1948, in sixty-six of the nation's leading livestock markets, sixty-nine per cent of the cattle, seventy-four per cent of the hogs, seventy-three per cent of the calves, and forty-two per cent of the sheep and lambs reaching these markets were hauled in by truck. In seventy-five of the largest metropolitan areas, one hundred per cent of all milk was delivered by truck, forty-four per cent of the butter, sixty-five per cent of the fresh eggs, twenty per cent of cheese, ninety-eight per cent of live poultry, and fifty-six per cent of dressed poultry. The twelve largest wholesale markets for fruits and vegetables reported the following composite percentages of various commodities being transported by truck: apples, fifty-eight; beans, seventy-eight; cabbage, sixty-four; cantaloupes, thirty-two; cauliflower, sixty-three; celery, fifty-one; cucumbers, seventy-nine; grapefruit, twenty-eight; green corn, eighty-six; greens, ninety; lettuce, forty; oranges,

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[33]Miller, op. cit., p. 97.

twenty-five; peaches, sixty-five; potatoes, thirty-eight; squash, ninety-three; strawberries, eighty-three; sweet potatoes, seventy-five; tomatoes, fifty-one; and watermelons, forty-six. Thus fifty per cent or more of many of the highly perishable fruits and vegetables was being hauled by truck. Throughout the nation, an average of ninety per cent of all household goods and of pulpwood was being shipped by truck; whereas sixty-six per cent of sand and gravel and forty-eight per cent of crushed stone were being shipped by motor truck.[34] As a carrier of freight of many types the truck continues to grow in popularity and usefulness.

In 1932, about four per cent of the total volume of inland freight traffic was carried by trucks in intercity service, reporting a revenue equal to about six per cent of the total inland traffic revenue derived from the transportation of freight. Today, of course, much higher percentages are carried by truck, as well as higher revenues resulting, as will be shown later in this chapter. In 1932, about

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[34]Automobile Manufacturers Association, op. cit., p. 34.

twenty per cent of the intercity traffic going by truck was hauled by common carriers, thirty per cent by contract carriers, and fifty per cent by privately owned trucks. Twenty to thirty per cent of all motor truck operations were interstate in nature, rather than intercity or local.[35]

Distances of haulage varied widely. For both common and contract carriers, many regular runs of over five hundred miles in length were reported as early as 1933, and occasional hauls extending up to 2,500 miles were not uncommon. Long-distance hauling of many varieties of commodities was rapidly increasing. However, the great bulk of the trucking operations were for relatively short distances. Over half of the routes operated by 182 freight trucking companies engaged in common and contract carrier service in thirty-seven states and the Dictrict of Columbia in 1933 were shorter than seventy miles in length. Only twenty per cent of the routes were longer than 120 miles; eight per cent, over two hundred miles; and five per cent,

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[35]Moulton, op. cit., pp. 520-521.

more than 250 miles. In a majority of instances, the ability to make overnight deliveries determined the radius of haulage distances.[36]

In 1939 one author, in discussing the expansion and scope of the trucking industry and pointing out some of its complexities and achievements, wrote as follows:

> Motor trucks — "highway freight trains," both common carriers operating lines several thousand miles long and "contract carriers" operating over shorter distances, but with 100-ton loads — are getting bigger and bigger. Within five years the operations scope of those in heavy hauling has been enormously enlarged by the placing of cranes on them. The business has gone from main-strengthing things onto trucks to feats in engineering, and many contract haulers now have engineers on their staffs to solve loading-and-hauling problems. To these engineers, when one witnesses some of their loading-and-hauling accomplishments — towers, derricks, transformers, gadgets up to 130 feet long and weighing far over 100 tons — nothing seems impossible. Tire improvements, permitting spread of the weight, have made big loads commonplace.[37]

There has been a tendency in recent years for trucking companies which engage in long-distance hauling to specialize in this particular type of service. On the other hand, of course, many companies practice both short-distance and long-distance runs either on a contract or a common-carrier

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[36] Ibid., pp. 523-524

[37] White, op. cit., p. 8.

basis. The vast majority of trucking operations, however, are confined to distances which permit overnight deliveries.

> The long-distance trucking services often but not always specialize in the type of traffic hauled. Many long-haul motor carriers transport only certain types of commodities, such as textiles of all sorts, household goods, livestock, office equipment, and construction materials; commodities which need speedy transportation on account of special market conditions, or commodities which are not conveniently and safely shipped by rail, such as goods requiring additional packing when shipped by rail, goods not accepted by railroads on account of high value or other characteristics, and mixed shipments which have to pay rates applying to the highest article if shipped by rail. Hauls of 1,000 to 2,000 miles are not uncommon in this type of service.[38]

Making a careful nation-wide study of freight transportation by trucks, the United States Public Roads Administration estimated that the total ton-mileage of freight transported by commercial trucks on all highways outside of city limits in 1941 amounted to 64.2 billion ton-miles. In that year motor truck traffic, on the basis of the number of tons carried, reached its highest pre-war total, rising from 41.8 billion ton-miles in 1937. Wartime conditions lowered the ton-mileage to 58.9 billion ton-miles in 1942. This was due mainly to the

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[38]Wilson, op. cit., p. 158.

shortening of the average haul because of gasoline and other restrictions. Naturally, during the war the trucks were loaded more heavily than ever, and the total tonnage transported was somewhat higher than that for 1941, although total ton-miles were lower because of shorter distances of the average haul. An interesting comparison between trucks and railroads indicates that in 1937 the railroads carried 362.8 billion ton-miles of revenue freight, or about nine times the total ton-mileage of trucks. In 1942 the railroads accumulated a total ton-mileage of 641 billion ton-miles, or approximately eleven times the ton-mileage of all commercial trucks in the same year.[39] The fact that railroads ordinarily transport freight for much greater distances than is true of trucks tends to throw a higher total of ton-miles to the railroads than would be true under exactly comparable situations.

Freight traffic on the highways of the United States in 1943 totaled over forty-eight billion ton-miles, or about 6.5 per cent of the total ton-miles

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[39] Johnson, Transport Facilities, Services, and Policies, p. 211.

transported by railroads in the same year. These calculations, like those previously given, were based on all haulages of all distances. Interestingly enough, the total quantity of merchandise and products hauled by trucks for distances up to 250 miles was more than double the amount hauled by the railroads for similar distances.[40] This fact indicates that there is a distinct function for both trucks and the railroads in carrying out effectively the transportation needs of the country.

> Many people have the idea that our great railroad network amply serves the needs of all parts of our country but this is not quite true. There are in this country almost fifty thousand communities served by trucks alone. A railroad train can go only where the tracks lead, and it costs money to build a track to a new town. A truck can go anywhere that there is a highway and it can change its route at will. Trucks carry eight per cent of all our commercial freight traffic. Without the truck lines our transportation system would be incomplete. With it, we have such freedom of trade as the world has never known.[41]

Characterized by remarkable flexibility, going literally from door to door and traveling to its destination without interruption, the truck was early thought of as a potential competitor of the railroad. In fact, so strong a competitor did the

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[40]Bigham, op. cit., p. 89. [41]Reck, op. cit., p. 207.

truck become that some rail lines were forced to cease operations, and all began to lose heavily on freight shipments when much of the major freight transportation went to truckers. Like street railways in connection with meeting the competition of the early "jitney" services in cities, the railroads in many instances did not make any attempt to enter in to direct competition with the truck lines, but instead they sought ways of utilizing the truck as an auxiliary to their own services, with the result that many railroad companies began to employ trucks instead of or as supplements to their regular freight haulage by rail.[42] Railroads as well as shippers have come to look upon trucks as valuable elements in the total picture of freight transportation. Realizing some of the advantages of trucks, the rail lines have, in many instances, utilized motor vehicles in their own pickup and delivery services, for haulage between stations in near-by vicinities where the truck is more economical and efficient, in handling shipments to points situated

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[42]Hunt and Ament, op. cit., pp. 221-222.

off the rail lines, as substitutes for freight trains, and to replace trains on unprofitable routes.[43] The willingness of the railroads to co-ordinate trucking services with their own particular methods of commodity transportation indicates that rail lines recognize that there is a definite place in the total transportation picture of the country for both freight trains and motor trucks.

> Both the motor truck and the railroad are essential parts of the facilities for the transportation of farm products [and of many other commodities as well]. The motor truck now dominates the hauls of less than 50 miles, and in many instances up to 100 miles. It possesses natural advantages which make it unlikely that it will be easily replaced in this field of activity. On the other hand, the railroad has great advantages in the transportation of farm products for long distances, and it is not handling the great bulk of the business from 200 miles upward. Between these two limits there is a considerable volume of business which is now divided between the two carriers. Eventually, this will be handled by the agency which offers the best service at lowest cost, or perhaps by a combination of the two agencies.[44]

The above excerpt, written in 1933, proved to be somewhat prophetic of actual developments in the field of freight transportation. Today, trucks are making ever longer and longer hauls, and in specially constructed and refrigerated trailer units

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[43]Bigham, op. cit., p. 92. [44]Moulton, op. cit., p. 667.

they are able to transport even fresh fruits, vegetables, and meats from coast to coast with a minimum of cost, bruising, and handling. The big new truck-and-trailer units are now equipped to perform any haulage services which the railroads can offer, and their efficient services are coming more and more into demand for transcontinental hauling of all kinds.

So large had the freight trucks become by 1939 that Secretary of the Interior Harold L. Ickes characterized the mammoth highway freight haulers as "perambulating monstrosities."[45]

So great was the demand for highway freight services that trucks were growing in size almost by leaps and bounds in order to be able to transport larger quantities of commodities and thus make larger profits per haul. Width and height were becoming fairly well standardized because of the requirements of highway widths and bridge heights, and there was no appreciable variation in these particular characteristics of the trucks. But length

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[45]"How Big Are Trucks?" Business Week, December 2, 1939, p. 26.

was another thing entirely. Many states had enacted legislation to limit the over-all lengths of motor vehicles and of tractor-and-trailer units, but there was utter lack of uniformity in these regulations; and many other states had not yet endeavored to enact such legislation.

The huge trucks and trailers now so common on the highways became particularly numerous during World War II because of the Army's demand for large numbers of big vehicles weighing ten and fifteen tons empty, and capable of carrying many times their own weight in freight. It was believed, even during war-time, that the demand for these big trucks would continue after the war because of the probable need for vast volumes of freight-transportation facilities during the business "boom" that was sure to follow the war. It was also believed that monster American trucks would become highly popular in Europe after the war to help counteract the widespread transportation shortages there resulting from the shattering of rail lines by aerial

bombardment.[46] Both of these prophecies have become realities: trucks in America are constantly growing bigger and more numerous, and they are making their way overseas in ever-growing numbers.

During the early years of freight transportation by motor vehicle, rates were not regarded as important from the standpoint of the shipper, who usually was willing to pay rather high rates in comparison to those assessed by the railroads in return for the greater flexibility, convenience, efficiency, and speed of truck service. By truck, the number of handlings was reduced from four or more to two, and the time required for deliveries was radically reduced. Deliveries within a radius of thirty to forty miles could be made the same day, while goods picked up late one day were carried overnight and delivered to the consignee's door by eight o'clock the next morning, even over distances of 250 miles or more. Through the impetus of this new transportation plan, new communities and agricultural districts developed in many areas. Vegetable farms one hundred miles

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[46]"More Trucks in '44," Business Week, January 29, 1944, p. 39.

distant from the consuming centers could have their perishables picked up late in the afternoon, knowing they would be delivered to distant produce terminals around midnight. On longer runs, overnight delivery often removed the need for refrigeration. New dairying areas became accessible, for trucks could provide marketing service in a few hours that had required a day or more by rail. As the trucking industry grew, specialized motor equipment was developed to meet particular needs. Tank cars came into existence for the transportation of liquids such as crude oil, gasoline, and milk; vans with special padding on the sides were manufactured for the hauling of office and household furniture; truckaway units for hauling automobiles became very popular; and refrigerated trucks for perishables came into being.[47]

As previously indicated, the truck, soon after its invention, became highly popular with farmers; and to this day a substantial proportion of the smaller trucks in use in the country are to be found on farms.

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[47]Edwards, op. cit., pp. 28-29.

Advantages of the truck to the farmer have been pointed out as follows:

1. The truck makes it possible for the farmer to haul larger loads for longer distances in less time, thus reducing the actual cost of hauling.

2. Speed of delivery makes it possible for the farmer to take advantage of market fluctuations and thus be able to sell at high market prices.

3. A truck on the farm will replace several horses, and the cost of keeping these horses far exceeds the cost of maintaining the truck.

4. Produce may be taken to market while horses are working in the field.

5. The truck makes it possible for land otherwise too far from the market to be farmed with perishable but better paying crops.

6. By means of trucks the farmer is often able to place his hogs and other livestock on the early morning market in less time from the farm, with less shrinkage in weight en route, and consequently gaining the advantage of better prices.[48]

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[48]Chatburn, op. cit., pp. 197-198.

> The truck finds its chief field of usefulness in the local movement of goods to and from farm, factory, store, warehouse, and terminal, where it offers a greater variety of services than any other means of transportation. It has at least five outstanding advantages: First, truck transportation is frequently cheaper than rail, either because railroad rates, loaded with terminal charges, are relatively high for short distances, or because the cost of cartage must be added to the railroad charges. . . . Second, the truck is speedy on the short haul because it eliminates much rehandling and can take the quickest route, especially where carriage is on a contract or private basis. With hand-to-mouth buying, this is a very important consideration. Third, the truck can operate more readily from door to door than other agencies of transportation. Railroads give a completed service in moving cars to and from private sidings, but a substantial portion of their cars are loaded and unloaded on public tracks. Fourth, the truck can supply a comparatively frequent service; it is well adapted to light or special hauls. Fifth, packing requirements are generally less burdensome in trucking than in rail or water shipment, because of differences in handling. This advantage is of great significance in transporting such goods as fresh fruit, vegetables, and household effects.
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> Shippers reported to the Federal Coordinator of Transportation, in the order of frequency stated, one or more of the following reasons for choosing truck rather than rail transportation: faster service, store-door delivery, cheaper total cost, store-door pickup, more flexible or convenient service, cheaper packing, late acceptance of shipments, simpler classification or rates, less damage to or loss of freight, and personal friendship or interest.[49]

As a further summary of the advantages of the truck as a means of freight transportation in comparison with other means, especially the railroad, the following discussion is quoted in its entirety. These statements serve to indicate the general nature of

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[49]Bigham, op. cit., pp. 91-92.

the trucking business as well as to point out the advantages of shipping by way of truck instead of by rail.

> It is fundamental that the motor truck has attained its present place in the transportation system of the United States because it has possessed certain inherent advantages over other modes of transportation.
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> Truck transportation is extremely flexible and convenient. Being a self-propelled vehicle on rubber-tired wheels, a truck is able to go wherever there is a road or highway, and even where none exists. Thus, trucks are able to serve economically many points and areas not served by other modes of transportation, since trucks have access to even the most remote places. In the United States there are 25,000 communities which have no railroad facilities. Most of them depend upon trucks for freight service.
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> Any point on any road is a point of origin or destination for the motor truck. Trucks pick up shipments right at the door of the shipper on short notice and deliver them directly to the door of the consignee. This results in less handling of the goods, faster delivery, and decreased costs. Since transfer of freight is held to an absolute minimum, packing and crating costs are greatly reduced or eliminated. In some instances, notably in movement of household goods, trucks do the entire job for less than it would cost for packing of goods for movement by rail. Reduced handling, as well as greater speed, curtails spoilage or damage of cargo.
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> Trucks excel in fast and cheap delivery of smaller shipments. This enables merchants to have fresh stock in the quantity they want and when they want it. Truck service also makes it possible for the merchant to reduce his inventory to fit his day-to-day requirements; he thereby cuts the costs of maintaining inventories and warehouses, maintains up-to-the-minute stock for his customers, avoids getting "stuck" with large quantities of out-dated items that will not sell, and increases inventory turnover with resulting increased profits.
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> Refrigerated motor trucks have revolutionized distribution of meats, fish, oysters and other perishable food products. Such products can be kept fresh and unspoiled while being transported hundreds of miles, and have been made available

to countless small communities which once found it extremely difficult to obtain them.

Motor transportation is outstanding for its ability to adapt its service to the needs of the shipper. A wide range of sizes and types of vehicles enables truck transport to fit a wide range of needs, both on and off the highways, which cannot be met by other modes of transportation. Trucks are built to carry almost any type of load and to operate under all kinds of conditions, and if there is no truck available to do a particularly unusual job an existing truck usually can be adjusted or rigged to meet the need. When the war stopped production of passenger cars, the approximately 8,000 trailers formerly used to transport automobiles from factory to dealer were adjusted to carry jeeps, ambulances, guns, lifeboats, airplanes, and other military equipment. Many were converted into buses to transport war workers. Some trucking companies specialize in unusual jobs and maintain trucks and equipment which make it possible for them to accomplish remarkable feats of transportation.

Truck service has resulted in a personal and co-operative relationship between those who own the freight and those who transport it. In the case of farmers and other private carriers who own their own trucks, the owner of the freight and the transporter of the freight have become the same. Thus, these private carriers have fast, flexible, and economical transportation at their beck and call at all times and they can transport their goods whenever and wherever they choose on a moment's notice. For these who do not have trucks of their own, a telephone call is all that is necessary to obtain the same kind of service from a for-hire trucking company. The average for-hire company is relatively small and its service is dedicated to relatively few shippers, most of whom are known personally by the owner of the trucking firm.

The natural speed of the motor truck on the highway, when compared with the more liberal packing requirements and the lack of need for transfer of freight, makes it possible for trucks to give service which in many instances is fatter than the U. S. Mail. A phone call brings a truck to the shipper's door in a few minutes. The shipment is soon loaded and the truck is on its way. There is no waiting for accumulation of enough freight to make a carload and no sidetracking or reloading at points en route. Overnight service for distances of two to three hundred miles is common.

> The natural economy of operating and maintaining truck equipment has combined with the other numerous advantages of motor transportation to make truck service outstanding from the standpoint of costs. Motor carriers have been able not only to perform cheap service themselves, but their competitive influence has resulted in lower rates by other transportation agencies.[50]

Perhaps at this point a brief comment should be made concerning one of the most frequently emphasized advantages of transportation of freight by truck; namely, its economy. It may be cheaper to the individual shipper, on the basis of the individual shipment, than rail transportation; but in the absolute and over-all sense truck transportation generally is not so economical as it appears to be. For example, one authority has estimated that 140 five-ton trucks, with a total fuel cost of over five dollars per mile, would be required to carry as much freight as the average freight train, with a train crew of five or six men and a fuel cost of about fifty cents per mile.[51] On the basis of the new Diesel-powered freight trains, which easily carry unbelievably heavy loads, the ratio of operating cost between the truck

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[50]Bresnahan, op. cit., pp. 249-250.

[51]Bigham, op. cit., p. 93.

and the train would be even more unfavorable to the truck. In spite of these considerations, however, the truck serves a real transportation need and renders an efficient service, both locally and on long-distance hauls.

Since the beginning of the depression period in 1929, the trucking industry has become complicated and disturbed by the appearance of a large number of individual truckers who offer their services by public advertisement or word of mouth, who are regarded as "fly-by-night" operators. It is their usual practice to gain possession of a truck on credit, cut haulage rates below those charged by bona fide trucking firms, and eke out a living until their truck is reclaimed by the seller for lack of payment on the part of the purchaser. In rare instances the trucker may complete payments on his vehicle, but ordinarily he has simply "borrowed" it for a while and makes little or no effort to purchase it. Then, when it is reclaimed, he usually obtains another vehicle from some other dealer and repeats the process. This type of trucking operation is so transient that it can easily evade all

efforts at regulation. Because of the nature of their technique and the short duration of their stay in any one locality, no definite or accurate data have been collected on these "fly-by-night" operators; but enough is known about them to justify the conclusion that they are menace to the legalized trucking industry. The "cut-throat" competition which these unscrupulous operators have engaged in has led many organized trucking companies to favor the regulation of all rates and activities of trucking firms.[52]

In a detailed study of 217 trucking companies in forty-one states and the District of Columbia in 1932, the Department of Commerce concluded that motor trucking at that time was still a new and unorganized industry. Its equipment and methods had been undergoing rapid change and improvement. There was little cumulative experience in the industry to serve as guides to the trucking operators, and each had to work out for himself what seemed to be the best solution for his own particular problems. Although great improvement and growth had occurred

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[52]Moulton, op. cit., pp. 521-522.

since its beginning, the industry was still predominantly one of small fleets of trucks and of individual management. The report concluded, however, that there was at that time considerable evidence to indicate a strong tendency toward consolidation and large-scale operation in the motor freight transportation field.[53] Since then, of course, consolidation has proceeded at a rapid pace until now there are many mammoth trucking companies operating hundreds of vehicles over the highways of many states and even from coast to coast.

One of the logical outcomes of the movement for consolidation has been the organization of the so-called freight agency, serving as a clearing-house for both shippers and transporters of goods. It is the means whereby firms desiring to ship goods make that fact known to a trucking company which may be interested in doing the hauling. The freight agency, at the same time, assists trucking firms in contacting prospective shippers and provides storage

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[53]United States Department of Commerce, Motor Truck Freight Transportation, Domestic Commerce Series, No. 66, p. 1.

space for trucks and merchandise for the various hauling companies patronizing the agency. The functions of the freight agency have been concisely stated as follows:

> Another kind of service rendered in connection with motor freight transportation is that performed by freight agencies. The agencies are not common or contract carriers, but are engaged in selling, and arranging for, the transportation services of motor carriers. They are the intermediaries between the shippers or consignees and the carriers that perform the transportation services. They are of much assistance to the carriers in building up and retaining their traffic. A motor traffic agency may act as a joint agent of several carriers. The joint agent may provide a building having storage space for each motor line served, and loading and unloading platforms with equipment for handling freight. The agent may receive freight from one carrier and turn it over to another for further transportation. Freight is transferred by the joint agency from long-haul lines to local carriers for delivery to consignees. The local lines also bring freight to the agency for shipment by the long-haul lines radiating from the agency. Many large shippers have an agency handle all their motor freight. The agency with its own trucks or those of local operators brings the freight of the shipper to the agency warehouse, assorts the shipments with reference to destinations and assigns them to the long-haul motor carriers. For the use of facilities and for providing services rendered shippers and carriers, the agents are paid fees or commissions; and, as might be expected, the owners of agencies may have a financial interest in the carriers for whom they provide facilities.[54]

Thus it is apparent that the trucking industry is truly "big business."

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[54]Johnson, Transport Facilities, Services, and Policies, p. 207.

One cannot escape being impressed as he notes the large numbers of huge truck-and-trailer units that speed back and forth over American highways, carrying tons upon tons of all types of merchandise and commodities. Trucks are no longer small and insignificant; but those that are engaged in commercial hauling have been rightly called "the freight trains of the highway." They are never still; they hurtle back and forth day and night over the roads of the land, transporting valuable goods from place to place. Even when they are forced to be idle for a few hours for loading or unloading, the truck units are often uncoupled from the detachable trailer units and hurry away with other trailer units which are loaded and ready for delivery. The largest of the trucks on the roads today are really not trucks at all; they are, rather, made up of a comparatively small truck to furnish the motive power, coupled to one or more huge and capacious trailers or semi-trailers which are the units in which the shipments are accommodated. Thus these "freight trains of the highway" can transport vast loads at great speeds

and thereby fulfill a major transportation need of the modern age. Trucking has developed from insignificance to a position of vast importance. Its period of growth is only beginning.

In the succeeding chapter a study will be made of the development of passenger traffic by means of motor busses.

CHAPTER III

DEVELOPMENT OF PASSENGER TRAFFIC ON MOTOR BUSSES

When one notes the large number of palatial motor busses that today speed over the nation's highways carrying multitudes of passengers, one finds it difficult to realize that the motor-bus industry has grown to its present gigantic and streamlined proportions within the past thirty-five to forty years, with the most rapid and far-reaching developments occurring within the past quarter century. One can almost say that the transportation of passengers by motor bus has come into existence since 1925; this is certainly true in regard to long-distance traveling and to large-volume transportation. Yet the beginnings of bus transportation reach considerably farther into the past.

As early as the first decade of the eighteenth century a public wagon was being operated across

New Jersey, and in 1732 the first long stage line began operating on a monthly schedule between New York City and Boston. Today, in contrast, large motor busses leave both New York City and Boston every hour and complete the trip in eight hours.[1]

Urban mass transit originated in New York City in 1830, when 120 horse-drawn omnibuses provided more or less scheduled service on several of the main thoroughfares. Two years later, in 1832, the first rail street-car was put into operation, drawn by horses. These vehicles soon replaced the horse-drawn omnibuses, to be replaced later by the mechanically propelled cable car. Around 1890 the electric street railway became the dominant means of mass transit in New York and in other cities. For a time, electric street railways increased rapidly and prospered. The year 1917 saw the largest number of street-cars in operation, totaling 72,911—a number not equalled either before or since. In 1923, however, came the peak passenger year on

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[1] Leslie Williams, "Mass Transit on the Highway," Highways in Our National Life, edited by Jean Labatut and Wheaton J. Lane, pp. 255-256.

street-cars. Thereafter, street railways began to decline in number and in patronage, to be replaced, duplicated, or supplemented by motor busses rolling on pneumatic tires over paved streets and highways. By the end of 1948, there were only 17,911 street-cars left in the entire United States, the number having dropped from 24,730 in operation in 1946. Soon, perhaps, the harsh clang-clang-clang and the thunderous rumble of the street-car will be heard no more on the city streets of America.[2] A new age in urban mass transportation is being ushered in—the age of the motor bus and of the electric trolley bus.

The use of motor busses on both city streets and the highways of the nation has developed from highly inauspicious beginnings. As recently as three decades ago, even the most far-seeing of prophets could never have foretold that the crude, rickety vehicles then in use for human transportation would so soon grow into the beautiful, speedy, luxurious motor coaches that now continuously hurry

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[2] Ibid., pp. 256-257.

back and forth over the nation's highways, transporting human passengers from place to place.

> The motor bus industry as we know it today is a development of the past three decades resulting from the progress made in mass production of motor vehicles in the two previous decades and from the extensive highway construction which was precipitated by such mass production of vehicles. Its inception was on a small and lowly basis. The pioneer carriers were obscure individuals who operated small automobiles in irregular service in the vicinity of their home communities. Many of them were local livery men. The service met with a favorable public response, in some instances because it suited the convenience of its patrons better than available steam or electric railway service and in other instances because there was no other for-hire service, and they began running regular schedules between nearby cities or towns. The ease with which such service could be instituted, simply by acquiring a used vehicle, attracted the attention of other persons who also began similar operations. In New England operators of so-called "jitneys" in intracity service were forced out of that business by local laws and many of them started intercity operations between adjacent communities which they gradually extended to 35 or 40-mile routes on regular schedule. Following world war [sic] I scattered operations were being conducted, and new operations were being instituted at an increasing rate, over rural roads in most sections of the country.[3]

Although all writers agree that the motor-bus industry has developed from the original "jitneys," which were merely touring cars in which people were transported from place to place for the payment of a small fee, there is some uncertainty as to when the

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[3]Interstate Commerce Commission, "Investigations of Bus Fares" (mimeographed), Proposed Report No. MC-C-550, 1950, p. 4.

"jitney" first came upon the scene of American transportation. Some authorities state that such "jitney" service first appeared as early as 1912,[4] others maintain that 1913 was the year in which the "jitney" was first used,[5] and still another is quite definite in stating that it was in the fall of 1914 when the "jitney" came into existence.[6] At any rate, it can be said with certainty that during the three-year period from 1912 to 1914, "jitney" service became established in some areas of the nation as a popular means of transportation.

With amazing rapidity, due to its instantaneous popularity with city dwellers, the "jitney" industry employed thousands of individually owned second-hand cars. Most of these vehicles were Fords, and at first were so-called "touring cars" in all stages of decrepitude. Despite their age and state of repair, however, these cars proved themselves capable of carrying unbelievable loads of human freight, and

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[4]Edwards, op. cit., p. 8.

[5]Hunt and Ament, op. cit., p. 214.

[6]Wilson, op. cit., p. 147.

during rush hours they almost choked the streets of some cities because of their large numbers. As their earnings justified it, many "jitney" operators began to use better classes of second-hand cars in their transportation services. In some cities everybody seemed to have a "jitney." Workmen driving to and from work earned extra money by carrying fellow-workers to their jobs; adventurous young men thought that driving a "jitney" would be more fun and afford better income than their ordinary jobs; many unemployed wished to have a try at the mushrooming business. Inevitably, of course, speculators and promoters were quick to see the chance for merging "jitney" services or establishing new ones.[7]

Between 1915 and 1920 the number of "jitneys" in operation in the cities of the nation increased rapidly. Factors which were instrumental in the growth of this business were (1) the serious unemployment situation in 1914, (2) the accumulation of large stocks of second-hand cars, (3) the appeal to large numbers of people made by the opportunity to

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[7]Hunt and Ament, op. cit., pp. 214-215.

ride in an automobile, and (4) the extraordinary local transportation demands during the war.

> The jitney was often uncomfortable and frequently unreliable, and the service was not infrequently unprofitable. Unprofitable operations and adverse legislation forced many operators out of the field, and the jitney made way for the much improved modern motor busses or coaches.[8]

But let us consider further the nature of the "jitney" business before proceeding to note its evolution into modern bus service. Unlike the great corporations which today own and control both urban and nation-wide bus services, the "jitney" was an individual project, and the owner was also the driver in most instances. If one owned a passenger car and wished to make a little extra money, he might place a sign on the side of his car saying "Mack Avenue via Fourth" or some similar designation, and then stop his car at some busy street and collect a load of passengers who wished to go to Mack Avenue. Thousands of owners of private cars did exactly that shortly after the "jitney" made its appearance, and continued to increase in number during the World War. Drivers usually charged

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[8]Wilson, op. cit., p. 147.

five cents for a ride, and, as the word "jitney" was a slang expression for five cents, the cars soon became known as "jitneys." These passenger automobiles possessed several advantages over street-cars. For example: they could go anywhere, they could serve new residential areas of a city without having to wait until tracks were built, they could take on passengers at the curb instead of compelling them to walk out to the middle of the street; and they were not so noisy as street-cars.[9] Needless to say, these advantages contributed to the immediate popularity which the "jitneys" enjoyed.

Touring cars of nearly every make and description, and even crude home-made trailers, were employed in "jitney" service. When the motor of his car was burned out beyond hope of repair, one resourceful "jitney" operator lifted out the damaged engine, removed the front wheels, and coupled the front of the chassis to a frame constructed at the rear of another car. With this unique trailer

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[9]Reck, op. cit., pp. 207-208.

arrangement he could take care of overloads and transport a number of additional passengers on each trip.[10]

Much of the "jitney" service began in cities when normal street-car operations were interfered with by the strikes which were then so common in the industry. Thus the passenger car helped to meet the need for mass transportation when street railways were not in operation. When street-cars went back into service after the troubles with labor were settled, many of the motor passenger vehicles continued to operate — sometimes in areas of the city where street railways had not been built; some providing services to and from the ends of street-car lines, and others entering into direct competition with the street-cars. Organization and order were lacking in the "jitney" business; the individual car owner, seeking a new source of income, operated his vehicle whenever and wherever loads of passengers could be found. In case of breakdowns, the combination owner-operator-repairman either

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[10]Edwards, op. cit., p. 7.

repaired it or went out of business. His resources were usually low, and often he could not afford repair bills even if he could find, in those early days of the automobile industry, anyone who could do the work. Obviously, such instable conditions could not exist for long, and a few of the more far-sighted persons began to broaden their operations by making short, local runs to near-by towns. Later, when city ordinances placed increasingly rigid restrictions upon the use of "jitneys" upon city streets, after their large number and sometimes reckless operation were becoming a public menace, most of the "jitney" operators entered this intercity type of local service, although many, of course, ceased operating altogether.[11]

At first looked upon as something of a joke and ridden in the spirit of daring and adventure, "jitneys" rapidly became a serious menace to the very existence of street railways in the cities. Municipal governments aligned themselves into two separate camps: "jitneys" were either outlawed or permitted

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[11] Ibid., p. 5.

to continue their services. In some cases the street railway company threatened to cease operations unless "jitneys" were completely barred from the city; and the street-cars usually won their case. But the "jitney" left a new idea in the public mind; the need for a new form of urban transportation had been proved, and before long the "jitney" gave way to its logical successor, the motor bus.[12]

But the story of the "jitney" is not yet complete:

> To such popularity did the jitney grow as soon to become a serious competitor of the street-car. There seemed to be a certain exhilaration about crowding into an old automobile --- for some time it had the novelty of a fad, though it is not to be denied that it likewise afforded real utility. Its shortcomings were readily overlooked while it was yet a novelty; but it proved to be none too dependable as a fair-weather bus --- on stormy days the people were glad to resort to the neglected street-car.[13]

Frequently the "jitneys" had routes paralleling or coinciding with those of the street railways. After they began to operate on more or less regular schedules, the drivers of the motor vehicles would often make an effort to arrive at each trolley stopping point a few minutes ahead of the street-car,

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[12]Percival White, Motor Transportation of Merchandise and Passengers, p. 293.

[13]Hunt and Ament, op. cit., p. 215.

and by this practice, regarded as highly unsavory by the street-railway interests, passengers were usually taken away from the trolleys. This unfair competition was, in time, removed by forcing "jitneys" and busses from the streets of many cities, by the acquisition of motor lines by street-railway companies, and by the action of state and municipal authorities in such a way as to arrange competing transportation services so as to serve the public adequately and efficiently without ruinous rivalry.[14]

With the passing of the "jitney" from the streets of American cities, there arose a demand which had to be filled at once. Multitudes of people had become patrons of the convenient and quick-moving automobile as a means of urban transportation. These persons objected to an enforced patronage of the street-cars when the "jitneys" disappeared from the streets. Even the street-railway companies acknowledged that motor transportation could fill a real need within the cities, but they were careful, of course, to specify certain limitations which would

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[14]Johnson, Huebner, and Wilson, op. cit., p. 582.

give assurance that there would be no unscrupulous competition between trolleys and automobiles. In many instances the trolley companies reserved the right to inaugurate motor passenger services of their own.

Where such franchises were not granted to the street-railway companies, all sorts of vehicles were requisitioned by private individuals to be used in the transportation of passengers. Old trucks were resuscitated and put into operation as busses. The novelty of the idea of bigger motor vehicles than the "jitneys" impressed the public, and the demand grew for motor transportation. Operators who could afford to do so, bought truck chassis available from the truck manufacturers and had crude wooden bodies built upon this larger framework. Usually the bus body consisted simply of a wooden floor, wooden benches fitted lengthwise of the vehicle, and a wooden roof supported by a number of upright pieces of lumber. No effort was made to have windows in these earliest busses, although some of them were equipped with thick cloth which was rolled

up and fastened to the roof in fair weather but which could be let down on inclement days to form flapping noisy walls which afforded some protection from the weather. By 1923 truck companies were experimenting with the problem of manufacturing busses, as it had been proved that truck chassis were not suitable for busses. A few busses were marketed in this year, coming from the factory with the body built on. Still the vehicles were open-air affairs, and they were very small in comparison to present-day busses; but the manufacturers were proving that busses should be built as units in the factory, rather than as separate chassis with the body to be constructed by the purchaser.[15]

Again it may be pointed out that

> . . . when motor busses first came into use, they were often operated in direct competition with street-car and railway lines. The result of economical and successful motor bus operation would be the detriment or ruin of the railroads. Therefore, the street-car companies, forced to analyze the situation from a purely business standpoint, perceived that there were certain advantages in motor bus operation and that under some conditions bus lines could be more economically operated than street railways. Gradually there emerged the idea, as the result of a natural but very rapid evolution, that the ideal

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[15]White, Motor Transportation of Merchandise and Passengers, p. 293.

> transportation system would include the motor bus operated in co-ordination with the street cars and not in competition with them.[16]

In the years since they were introduced, motor busses as auxiliaries to street and interurban railways and for long-distance travel have won popular approval and patronage. As the popularity of motor transportation grew in the early days of city "jitneys" and as more routes were established to supplement street railways, such motor lines being owned either by the street-car companies or by others, the number of passengers mounted and additional seats were squeezed into the old touring cars. Then the chassis of passenger cars employed in public transportation services were extended to allow for nine, then twelve, then fourteen passengers. Then light freight-weight chassis were used with specially built bodies to carry fourteen to eighteen passengers. Before long, special factories were established to manufacture much longer and wider chassis and bodies by mass-production methods.[17] With this step, the

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[16]Hunt and Ament, op. cit., pp. 215-216.

[17]Ibid., pp. 217-218.

bus transportation industry was firmly launched, and succeeding years were to prove its efficiency and its general acceptance by the traveling public.

Busses have proved themselves so economical and efficient that they not only have largely replaced street-cars in American cities, but also they have run most of the interurban lines out of business. In fact, many interurban companies have bought fleets of busses of their own and are letting their tracks rust. Railroads, too, have replaced short feeder lines with busses. Why operate trains when busses can provide the same service more frequently and efficiently at one fifth of the cost of operating even a short train? In the past generation, railroad track mileage has decreased appreciably, largely because of the replacement of short lines with busses.[18]

When operators of "jitneys" and of the first motor busses began to extend their services into the country to provide intercity transportation between points situated in close proximity, they began in a

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[18]Reck, op. cit., p. 209.

modest way the vast network of nation-wide bus routes which are now in constant use by the traveling public. In those days of the 1920's, however, these short bus lines were owned and operated by individuals or by small firms of two or more partners. No effort was made to provide "through" services by co-ordinating schedules with those of other lines operating out of near-by towns or cities. Consequently, long-distance transportation service provided by independent operators of short intercity bus lines was not only slow, but it often placed great hardships upon "through passengers" because of the failure of connecting lines to correlate their schedules. For example, a passenger traveling the 168 miles from Sacramento to Fresno, California, had to use the facilities of five different bus companies and purchase tickets and change busses four times, with long holdovers at most of the changes. The small size of the average early "jitney" or bus company is indicated by the fact that one operator, in 1921, consolidated sixty different local lines in

central California to establish what later became the California Transit Company.[19]

As has been implied previously, motor vehicles began to transport passengers between cities largely for two reasons: (1) municipal legislation in many cities was prohibiting the operation of "jitneys" or placing such restrictions upon them that they could no longer provide acceptable services, and (2) some "jitney" operators who had been successful in urban transportation entered the field of interurban traffic with the belief that greater profits were to be had there. In most cities where "jitneys" had become established, they were put out of operation only after bitter litigation and numerous compromises. Usually the forces urging their abolition from city streets were led by street-railway interests and not by the public at large, who for the most part would have preferred to see the "jitneys" remain in service. As a result of the legal battles and the unethical competition that developed between the motor vehicles and the street railways,

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[19]Edwards, op. cit., pp. 7-8.

> The squadrons of jitneys disappeared from the city streets as quickly as they had come. The city of Los Angeles passed what is believed to be the first ordinance in the United States to take care of the outlaw jitneys. While they had many defenders and while they undoubtedly represented real economies, at least of a temporary character, they were sadly lacking in dependableness, co-ordination, and unified control. In a word, viewed as a phenomenon of transportation, the privately owned horde of motley jitney busses that thronged the streets of our cities for a time must be regarded as ephemeral — a passing phase of the fascinating story of transportation.[20]

Because of the valuable contributions made by the "jitneys" to the total conception of effective urban transportation services, many street-car companies in all sections of the country adopted the policy of using motor busses as regular auxiliaries, both to meet serious competition from private owners and to expand their own passenger services into areas where tracks had not been laid. The universal, growing popularity of the automobile caused executives of street-car companies to realize that they most offer more attractive service in many districts by increasing their facilities to include up-to-date motor busses. If they did not do so, popular demand would give rise to the granting of franchises to private operators who would be in a position to

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[20]Hunt and Ament, op. cit., p. 217.

offer serious competition to the street railways. At the same time, bus operation proved to be an effective method of serving new territory with a minimum investment and expense. Bus lines satisfied the patrons and were far more economical than railway extensions. Early in the urban-bus era it became generally realized that an adequate city transportation system should include a plan for universal transfer; the fact was apparent, however, that it was impossible to have desirable co-ordination when several different companies or individuals operated street-cars, rapid-transit lines, motor busses, and assorted "jitneys" within the city. Hence, the established street-railway companies tended to adopt motor-bus service in order to keep a unified control of city transportation facilities within their own hands and also with some sense of responsibility for providing the best possible transportation to serve the greatest number of patrons.[21]

A nation-wide survey conducted in 1932 revealed that motor busses were already forming an

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[21] Ibid., pp. 216-217.

important adjunct to electric-railway operations, carrying over 1,300,000,000 passengers each year within the bounds of American cities. In cities of over 25,000 population, electric street railways already controlled 10,655 busses out of a total of 14,333 in operation in such cities. In smaller cities 633 busses were operated by street railways, whereas 1,824 motor vehicles were operated by electric interurban lines. Bus routes in cities or interurban areas under control of street-car companies totaled 13,138 miles. In 1931, 1,150 new busses had been purchased by electric railways, and larger orders were forecast for 1932. In the same year fewer than one hundred street and interurban rail cars were purchased—the lowest year on record up to that time—and more than two thousand such cars were scrapped.[22]

During the one year of 1935 forty-three cities substituted motor busses for street railways. Over three thousand new busses for operation in cities

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[22]"Truck Operators Call Federal Regulation Premature, Hostile," Business Week, February 3, 1932, p. 9.

were delivered, compared with 2,422 in 1934. In 1935, urban bus revenues were up eight per cent above the level of the preceding year; route mileage also increased eight per cent, and the number of passengers transported rose 6.25 per cent.[23]

Because of their merits, motor busses were being added rapidly to the equipment of many street-railway companies either as supplements or auxiliaries to their regular rail facilities. At first the busses were gasoline-powered, but with the advent of Diesel motors in the late 1930's, most of the newer models were equipped with Diesel engines. By the end of 1939, 168 electric street-railway companies in the United States were engaged in bus operation, using 16,859 busses over city routes totaling 16,168 miles. At the same time, 543 cities of 10,000 population or more were relying entirely upon busses for their commercial transportation (exclusive of taxicabs) and 273 others of this class employed busses as supplements to trolley services.[24]

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[23]"Happy Bus Year," Business Week, December 28, 1936, p. 32.

[24]Daggett, op. cit., p. 86.

As a means of indicating at a glance the changes in the urban transportation picture during the period from 1917 to 1948, the following figures are listed concerning the number of street-cars, trolley busses, and motor busses in use in American cities on December 31 of the indicated years:

Year	Street-cars	Trolley Busses	Motor Busses
1917	72,911	.....	.....
1928	58,950	41	19,700
1938	31,400	2,032	28,500
1948	17,911	5,708	58,540[25]

Street-cars decreased in number from almost 73,000 in 1917 to less than 18,000 in 1948. Trolley busses, which are street-cars without tracks and with pneumatic tires instead of flanged steel wheels, first made their appearance in 1928, when forty-one were in use. By 1948 almost 6,000 of these vehicles were in use in the cities of the nation. In 1917 no motor busses were in use in the cities, as that year was in the "jitney" era and busses as such had not made

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[25]Williams, op. cit., p.266.

their appearance. By 1928 there were 19,700 motor busses employed in urban service, and this number had grown to 58,540 in 1948. Thus street railways are disappearing from the transportation picture in the cities of the United States and are being replaced by the more economical and more flexible motor busses and trolley busses. Although the trolley bus uses overhead electric cables as sources of power, its trolley beam which contacts these cables is flexible and automatically lengthens and shortens itself as required by the moving vehicle which is thereby permitted to pass cars in its traffic lane and to stop at the curb to permit passengers to enter or leave.

> The reasons for the continued substitution of buses for trolleys are: too few trolley passengers; people are demanding street improvements; many trolley companies cannot finance replacement of worn-out track; new buses give faster service and the new equipment stimulates business; buses give curb loading and improve street traffic conditions in larger cities; changes to local control.[26]

Not only were busses coming into widespread use in urban transportation during the 1920's and 1930's, but they also were beginning to venture out into the

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[26]"Happy Bus Year," Business Week, December 28, 1936, p. 32.

country areas, thus providing transportation facilities between cities and towns. Whereas, after the era of the "jitney," municipal governments exerted rather strict control over the development and use of bus transportation within the cities, no such restraining influences existed outside the city limits, and consequently many regions of the country were plagued by innumerable mushrooming local bus services which entered into cut-throat competition with each other and for a time rendered highly chaotic the entire pattern of intercity transportation by motor busses. In spite of the high degree of individualism which characterized these local bus services, however, there were some operators who recognized that there could be no secure future in providing merely local services and in refusing to correlate schedules with other companies.

It was these far-seeing individuals who were able to bring about remarkable advancement in the establishment of long routes under the control of their respective companies and, at the same time, realize some progress in the setting up of "through

routes" by a correlation of the services offered by connecting lines. In the late twenties and the early thirties the more forward-looking operators were learning that more profitable and permanent business could be developed by providing dependable long-journey service to the public. Endeavoring to establish through services by means of co-operation between connecting lines, they were, for the most part, successful only to a negligible degree before 1930.

Among the various carriers, considerable distrust existed, and in this atmosphere co-operation for the improvement of service was hardly to be expected. Some of the more ambitious carriers met this distrust and individualism in the industry by extending their own routes to provide through service between larger cities, even though such extensions might duplicate connecting lines already in existence. By this method of expansion, some of the carriers developed widespread operations. In the early 1930's much of the distrust began to disappear, especially in regard to connecting-line

services. Even the most obstinate of the individualists among the motor carriers were recognizing that a correlation of schedules and services between connecting lines would be advantageous. Consequently, many through routes were being established, and more convenient and dependable long-journey service was being made available.

In a number of states bus companies began to operate under state-wide policies formulated by associations which they organized to promote their common interests and to work out their policies and problems collectively. These organizations were later to become interstate and national in scope.[27]

> These early carriers did not use tickets, but collected cash fares which were paid to the drivers. The roads over which they operated were largely unsurfaced, and those which were surfaced were, at best, narrow, winding, two-lane highways. The individual operations were over relatively short routes or short networks of routes. These carriers had no terminals and they made no provision for connecting-line service. Their operations were almost entirely in intrastate commerce. Some of them performed unusual services such as purchasing groceries and other supplies for, and delivering them to, persons in the rural areas along their routes. It is of interest to note that many operations which were inaugurated in comparatively recent years were started in a similar unpretentious manner, some of them over then unsuitable highways.[28]

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[27]Interstate Commerce Commission, "Investigation . . .," pp. 6-7.

[28]Ibid., pp. 4-5.

The earliest busses were merely the old "jitneys" which had left the city streets for the highways and were, therefore, light-weight touring cars, for the most part. A little later larger and heavier touring cars were used. Before long they were replaced by crude bus bodies of the sedan type, with a door on the right side at each cross seat, the whole being mounted on truck chassis. The first busses specially designed for intercity service were manufactured about 1925. The seats on these vehicles were low-back, covered with leather, and had little padding and no springs. Aisles were narrow, and no provisions were made for carrying baggage, which had to held on the knees of the passenger or sometimes it might be tied to the side or top of the vehicle, exposed to the weather.[29]

In the early days of the highway bus-transportation business, the owner-operator was a law unto himself and many amusing incidents occurred. One progressive operator boasted of having the first exhaust whistle in California, and on the morning

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[29]Ibid., pp. 40-41.

of its first appearance he proudly blew it without ceasing while passing through all the towns along his route. An offended officer of the peace arrested the driver, unloaded the passengers, seized the bus, and refused to permit any more busses to enter the town. This peremptory injunction, however, was soon rescinded when the aggrieved bus owner threatened court action. Thereafter, it might be added, he did not blow his whistle unceasingly while passing through towns.[30]

There were few paved roads, cars were still a luxury, and traveling by means of the early busses was slow and uncertain, but it was far faster than by horse. "To get there---that's the thing!" was the sign bannered on the sides of vehicles in the small fleet of one bus owner. The same slogan appeared inside the cars, intended to chide impatient travelers. Even in the early days there were clashes with the rail lines. Busses had no schedules, but simply departed when they had anybody to carry. Drivers became so aggressive in seeking business

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[30]Edwards, op. cit., pp. 6-7.

that the president of a railroad operating out of Stockton, California, boasted that he would drive the busses from the streets of that city. Immediately thereafter the bus and "jitney" companies moved their "loading stand" in front of the railroad passenger station and prospective rail passengers, in order to reach the railroad ticket office, had to walk beside several insistent and often aggressive bus drivers seeking their patronage. Soon the railroad modified its militant attitude when its passenger traffic decreased alarmingly and when the bus operators agreed to move their "stands" elsewhere.[31]

> At that time [in the 1920's] the terminals operated by the carriers generally consisted of small storerooms, usually without sanitary facilities. Very few of the carriers operated stations having waiting rooms. On-street, or curb, loading and unloading in front of such storerooms or near the entrances to prominent hotels or department stores was the prevailing practice. When one carrier opened a terminal the competing carriers usually opened terminals nearby. Thus all terminals in a city generally were concentrated in the same area. "Sidewalk men" employed by competing carriers endeavored to seize every prospective passenger who came along. Taxicabs brought prospective passengers to the terminal of the carrier which paid them the largest commissinn. To a large extent the service was not dependable or satisfactory to the public.

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[31] Ibid., p. 7.

> Frequently schedules were not operated unless or until a pay load was available. Automobile travel agencies were operated in many cities, some by unscrupulous persons. By extensive advertising they attracted large numbers of patrons whom they placed on the vehicles of carriers which allowed them the greatest commission. It was common practice for them to turn their patrons over to irresponsible carriers who failed to provide the service for which tickets had been sold. These conditions continued until the early 1930's. The unrestricted exploitation of the inherent advantages of motor carrier service during this period resulted in uneconomical development of such service in some sections of the country and, no doubt, was harmful to the sound and healthy growth of the industry.[32]

From twelve to thirty passengers could ride in the busses that were in use about the year 1923, with more vehicles having capacities of less than twenty persons than had more than twenty. Some of the vehicles had seats arranged crosswise like those in railroad cars; some had seats running lengthwise; and others had combinations of the two seating arrangements. Both entrance and exit doors were located close to the driver's seat. The majority of the motor busses were converted truck chassis.[33]

By 1923 suburban and interurban motor-bus passenger service was growing rapidly. Such busses

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[32]Interstate Commerce Commission, "Investigation . . .," p. 6.

[33]White, Motor Transportation of Merchandise and Passengers, p. 295.

as were in operation were well-patronized, usually bringing passengers to cities in time for business or shopping and returning them home in the late afternoon or evening. Fares were about the same as for trains—approximately four cents per mile. Wherever roads were dependable and passable at all seasons of the year, bus lines were springing up between towns to offer more or less regular service. Most of the routes were local in character, being no more than fifty to sixty-five miles in length, although some routes twice as long were proving practical and profitable. With ease, busses were making fifty-mile trips at average speeds of approximately twenty miles per hour, including stops. Some of the latest models were equipped with springs in the chassis and also in the seats, which contributed greatly to the comfort of travelers.[34]

By the year 1923 it could be said:

> The transportation of passengers by self-propelled, trackless vehicles has now reached a point where it can be called a business. That is, there is an organization with

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[34]Chatburn, op. cit., pp. 186-187, 194, 196.

> responsible executives in control, there is a carefully prepared cost system, and there is provision for the care of equipment as well as for the maintenance of regular, dependable schedules. Last of all, there are profits. The automobile preceded the truck by many years, and, in this country, the truck was well developed before the bus made any rapid progress.
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> In the last few years, the business of bus operation has made much headway. It has passed from the hands of the irresponsible independent operators into the control of companies having the character of public utilities and capable of taking upon themselves the duties and responsibilities hitherto borne by the steam and electric roads. Thus it is possible to study bus operation from the angle of a public utility, serving the public transportation needs, and returning profits to the owners and stockholders, and doing this by close adherence to sound business principles.[35]

For many years, almost since the beginning of bus transportation, there have been two distinct types of motor busses employed in the transportation of passengers: revenue and nonrevenue busses. "Revenue busses may be city, intercity, or sightseeing and charter hire. Those operating between cities are generally common carriers. Nonrevenue busses may be school, hotel, industrial, or miscellaneous."[36] In other words, revenue busses are those whose income is derived from the fares paid by passengers for the service of transportation;

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[35]White, op. cit., p. 291.

[36]Bigham, op. cit., p. 88.

nonrevenue vehicles, on the other hand, are operated without direct cost to the user, as in the case of school busses, or as auxiliary services in conjunction with some other activity or convenience for which charges are made, as with hotel busses. When the primary service is paid for, the bus service becomes available without additional cost.

Data relating to the registration of motor busses before 1927 are unreliable and incomplete, but since that date the figures are fairly reliable and accurate. In 1927, 36,550 revenue busses were reported to be in operation in the United States, including interstate and intrastate carriers and sight-seeing services. In addition, there were 38,400 nonrevenue vehicles in use, including those classified as school, hotel, industrial, and miscellaneous busses. The growth in the number of revenue and nonrevenue busses in use in the nation for the four years following 1927 is indicated in the following tabulation:

Year	Revenue Busses	Nonrevenue Busses
1928	39,650	43,075
1929	42,650	44,160
1930	44,650	47,150
1931	45,400	53,500[37]

In 1931, revenue busses carried 1,726,000,000 passengers, of whom 1,325,000,000 were carried by urban bus lines and 395,000,000 by interurban or highway busses. Composite passenger-miles for that year totaled 10,880,000,000, including 3,975,000,000 passenger-miles in city service and 6,725,000,000 passenger-miles in intercity service. In the same year the steam railroads of the country carried 596,339,000 passengers and traveled 21,898,506,000 passenger-miles. Thus, intercity busses carried about two thirds as many passengers in 1931 as did all the steam railroads combined and performed about one third as much intercity passenger transportation service as did the steam railroads on the basis of passenger-miles of

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[37]Wilson, op. cit., p. 148.

transportation service rendered during that particular year.[38]

By 1938 more than 2,500 companies were operating over 17,000 busses over more than 300,000 miles of route, which was more mileage than that reported by all American railroads combined. A tremendous network of motor-bus lines, reaching into all corners of the nation, developed in the twenty years following the first World War.[39] At the beginning of 1940, 20,142 city busses, 10,193 suburban and city busses, and 18,614 intercity or highway busses were in operation. These were all classified as common carriers. In addition to these common carriers, totaling 48,949 motor vehicles, of the three types mentioned, there were 89,301 non-common carriers, including 2,601 sight-seeing and charter busses, 85,700 school busses, and 1,000 busses devoted to miscellaneous usages. Thus, in the year 1940, there was a total of 138,250 busses of all types in operation in the United States.[40]

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[38]Ibid., pp. 148-149

[39]Reck, op. cit., p. 207.

[40]Daggett, op. cit., p. 85.

In 1946 there were 26,000 intercity busses, 1,475 charter-contract vehicles, 81,200 school busses, and 52,450 urban busses in use in the nation. In addition, 3,896 trolley busses and 24,730 street-cars were reported. Thus, 188,751 mass-transit vehicles—motor busses, trolley busses, and electric street-railway cars—provided rides on streets and highways of the United States during the all-time record riding year of 1946. In this year intercity busses traveled over two billion vehicle-miles, carrying nearly a billion passengers. In less than a quarter of a century intercity motor busses had become a primary public-service carrier, exceeding the passenger loads of the railroads. During the first World War the railways carried the bulk of intercity passenger loads, but in the first year of the second World War intercity busses had already assumed more than half of the total volume of intercity travel.[41]

Indicative of the steady and rapid growth in various types of motor busses is the following

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[41] Williams, op. cit., p. 257.

tabulation giving figures identifying the numbers of vehicles in use in the nation for the years 1941 and 1948:

Types of Busses	1941	1948
Intercity busses	18,420	31,775
Local or urban busses	37,855	57,175
Charter and sightseeing busses	2,383	3,200
Total common-carrier busses	58,658	92,150
School busses	87,400	90,400
Total, all busses	146,058	182,550[42]

It should be pointed out that the second World War produced a decline in the number of all types of busses in use, with the greatest proportionate decrease occurring in charter and sightseeing vehicles, which decreased in a year's time from 3,300 to 1,033. Immediately after the war, all types of busses increased rapidly in number. Thus the figures presented in the above tabulation do not indicate the true nature of the situation, as they omit the number of busses for the war years, when drastic

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[42]Automobile Manufacturers Association, op. cit., p. 8.

cuts occurred in the number of all motor vehicles. Thus the data for 1948 reflect a greater growth than is apparent in the comparison with figures for 1941, as severe declines occurred in the interim which had been completely overcome by 1948.[43]

Concurrently with the steady growth in the number of motor-bus vehicles in use in the United States, there also was evidence of a great increase in the volume of bus traffic. This, of course, was a logical accompaniment for the mounting number of busses in operation. As early as 1935 more people were riding upon busses than upon trains. Intercity bus traffic jumped from 378,200,000 revenue passengers carried in 1934 to 651,999,000 in 1935. By contrast, 445,995,000 people rode on trains in 1935, which was less than the rail passenger volume for 1934, when train passengers numbered 449,907,000. City bus lines increased their total number of passengers from 1,809,300,000 in 1934 to 2,084,052,000 in 1935. Revenues of intercity bus lines rose from $171,200,000 in 1934 to $239,940,000 in 1935. This

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[43] Ibid.

income was considerably less than the revenue of steam railroads, which amounted to $345,887,351 in 1934 and $357,480,974 in 1935 for passenger traffic alone. Differences in rate schedules followed by the two carriers and in length of trips accounted, for the most part, for these apparent discrepancies between passenger volume and income of busses and trains. Railroads were—and still are—far ahead of busses in regard to the number of long-distance travelers who select the respective means of transportation.[44]

From 1938 to 1943, travel by bus increased steadily in both number of passengers and total passenger-miles, reaching the peak in 1943. In 1938, motor busses on American highways marked up a total of 10,157,000,000 passenger-miles, which represented 3.89 per cent of all passenger-miles traveled that year by all means of transportation (bus, private car, railroad, inland waterways, and airways). In 1943 the enormous peak of 27,416,000,000 passenger-miles was attained by the

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[44]"Busses Pass Trains," Business Week, March 14, 1936, p. 16.

busses, representing 10.23 per cent of all American travel within the country for the year. For the war years, 1943-1945, the volume of bus traffic remained almost constant, and thereafter began to decline slightly. In 1948, 23,648,000,000 passenger-miles were reported for motor busses, accounting for 6.56 per cent of all passenger-miles by all modes of travel.

All means of transportation except that by airplane and private car had approximately the same growth curves as did bus travel, increasing in volume at a more or less steady rate until the second World War, then decreasing rather abruptly. Railroads, since the war, have experienced a drastic and serious decline in passenger traffic, although rail travel during the war was at its peak because of restrictions that rendered travel by motor vehicle, especially by private car, difficult and hazardous. Air travel has grown steadily in popularity, though it is still responsible for less than two per cent of all passenger-miles traveled by Americans. At the same time, travel by private

automobile has mounted steadily with the exception of the war years, until in 1948 the Interstate Commerce Commission calculated that 79.69 per cent of all passenger-miles traveled in America were by means of private car.[45]

At the same time that busses were increasing in number and the volume of bus traffic was mounting by leaps and bounds, there was a widespread tendency within the industry toward consolidation and merger. For example, in 1926, at least 6,900 separate and distinct bus-operating companies were doing business in the United States. Within the next five years many consolidations occurred, so that the number of companies operating fleets of one hundred or more busses steadily increased. By 1931, the number of companies had been reduced (within a five-year period) by nearly 1,700, being 5,250 firms, which operated 45,400 motor busses traveling over 390,000 miles of motor-bus routes.[46] Occurring in the early and middle thirties, the greatest period of consolidation and merger still

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[45]Interstate Commerce Commission, "Investigation . . .," p. 22.

[46]Wilson, op. cit., p. 150.

further reduced the number of companies operating intercity busses until by 1938 there were only 190 such bus lines. After this time the trend changed somewhat because of Federal restrictions on monopolistic tendeicnes in all lines of business. Some of the larger bus corporations disintegrated into two or more smaller organizations, and at the same time new operators were permitted to enter the bus-transportation field to a limited degree. As a result, by 1949 there were 366 bus companies in the nation engaged in intercity or highway traffic.[47]

By 1940 urban motor busses were annually rendering about 715,000,000 miles of revenue transportation service wholly within city limits, and earning over $192,000,000. These vehicles were transporting each year more than 2,800,000,000 passengers. Approximately 13,000,000,000 passengers were being transported annually by all means of commercial transportation in the cities, including surface electric railways, 56.49 per cent of the total number of passengers; motor busses,

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[47]Interstate Commerce Commission, "Investigation . . .," p. 21.

22.46 per cent; rapid-transit, subways, and elevated lines, 18.27 per cent; electrified suburban railroads, 1.49 per cent; and trolley busses, 1.29 per cent. At the same time, intercity revenue busses were traveling over 345,050 miles of highway routes, annually performing 1,359,000,000 revenue bus-miles of service, carrying 627,000,000 passengers, and earning $298,000,000.[48] In 1943 the passenger-miles of intercity busses totaled about 31,000,000,000, or thirty-four per cent of the passenger-miles of the railroads. In that year the typical bus carried from twenty-five to thirty passengers, although many were of twice this capacity.[49]

The year 1946 was the all-time high in passenger volume for city busses, as more than 20,437,000,000 passenger rides were reported for that year. If the estimated 18,000,000 people carried in motor busses, trolley busses, and street-cars during an average evening rush hour in 1946 had gone home in private automobiles instead, an additional 10,000,000

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[48]Johnson, Huebner, and Wilson, op. cit., pp. 584-586.

[49]Bigham, op. cit., p. 89.

private cars would have been required in order to transport them.[50]

In 1948, 4,156 towns and cities of the United States, ranging in population from 1,000 to 1,000,000, were entirely dependent upon busses for local mass transportation. In the same year, 2,074 communities of 1,000 to several thousand population had no means of local mass transportation whatsoever. Hence, a total of 6,230 cities were wholly dependent upon busses and automobiles for transportation.[51]

It has already become apparent in the preceding discussion that there are three classes of motor-bus service: city, intercity, and long-distance. All possess individual functions and special services, and have developed with astonishing rapidity; but the last type is perhaps the most unique and interesting. Called the "modern seven-league giants of transportation," the most modern of the long-distance busses have every needed comfort and refinement, including cushioned chairs, adjustable

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[50]Williams, op. cit., pp. 256, 261, 267.

[51]Automobile Manufacturers Association, op. cit., pp. 30-31.

heaters, air conditioning, hot and cold lunch, radio, upper deck for observation, and sleeping quarters. Since the introduction of the first so-called "night coaches" in 1938, with comfortable accommodations for sleeping as well as for luxurious day travel, it has been claimed that "a new planet has appeared in the transportation sky."

Long-distance bus transportation has kept pace with the construction of paved highways. The cost of building a railroad into a new region may be approximately $50,000 per mile, and the project may require many months for completion. Bus companies, on the other hand, were ready to offer transportation services as soon as roads were completed, at an initial cost only a fraction of that of rail lines.

One serious drawback to the motor bus has always been its inability to handle mass transportation. Despite their rapid increase in size in recent years, busses still cannot, and never will be able to, accommodate large numbers of people who desire transportation at any given time to or from any given point. In such situations the railway train is far

superior, as its ability to couple on more coaches and even additional engine units endows it with an almost unlimited passenger capacity.[52]

One special type of bus which has been mentioned a few times in the preceding pages is the school bus, which, within the past two or three decades, has become an indispensable adjunct to American education. The widespread movement which began shortly after the first World War for the consolidation of small rural schools and for the closing of country schools and letting the pupils attend school in near-by towns or cities made the distances too great for many of the children to walk to school. In meeting the need for transportation of such pupils, horse-drawn vehicles were used at first, but the problem was not adequately solved until motor busses became available. As early as 1923, over 12,000 consolidated schools were served by motor busses.[53] In 1938 over 3,000,000 students were carried daily between their homes and the school in over 80,000 busses at

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[52]Hunt and Ament, op. cit., pp. 218-220.

[53]Chatburn, op. cit., p. 210.

an annual cost of over $50,000,000.[54] In 1946 school-bus operation was an industry totaling over $100,000,000 a year. Almost five million children were transported to school daily by 81,200 busses operating over 2,000,000 miles of highways, piling up a half-billion bus-miles and more than one and a half billion student rides during the year.

This was by no means the total story of student transportation, however, as it did not include students riding on common carriers or in passenger cars.[55] In 1948 twenty-two per cent of the public-school pupils of the nation, or slightly more than one pupil in every five, were being transported to and from school by bus. The percentage of the total enrollment traveling by bus ranged from two per cent in Nebraska to thirty-eight per cent in North Carolina. A total of 46,400 schools or school systems used 90,400 school busses to transport 5,416,000 children over 4,026,000 miles of route to and from school each day at an annual composite cost of

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[54]Reck, op. cit., p. 212.

[55]Williams, op. cit., pp. 257-258.

$145,200,000.[56] Thus it is obvious that the school-bus phase of transportation alone is a significant element in the total field of travel by motor vehicle.

During the thirty-five or forty years since its inception, the growth and development of the motor bus as a new means of intercity transportation of passengers have been both promoted and retarded by its own inherent advantages, namely:

> . . . its flexibility, including its ability to provide convenient service for both thinly and densely populated areas and during heavy as well as light traffic periods through use of varied sizes of equipment and provision of suitable number of schedules, its ability to pick up and discharge passengers at places most convenient for them, the small capital investment required for its provision, and the relatively low cost at which it could be provided; by the establishment of connecting-line through services; by mergers and consolidations of carriers; and by the forced dependence of most of the carriers on self-help and self-improvement. This growth has been vitally affected by the vast public highway construction which took place; by governmental action; by improvements in equipment and facilities; and by conditions brought about by world war [sic] II.[57]

Interestingly enough, railroad competition had little effect in retarding the inauguration of motor-bus operations, but it did serve to place a ceiling on fares for competitive long-journey transportation services.

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[56]Automobile Manufacturers Association, op. cit., p. 32.

[57]Interstate Commerce Commission, "Investigation . . . ," p. 5.

From the ordinary or seven-passenger touring cars which were the first "jitneys" or busses, the vehicles rapidly increased in size to capacities of twelve, eighteen, twenty-five, forty, and fifty passengers. At present, few busses are in use on the main highways or in cities which have capacities of fewer than fifty persons, and many vehicles now carry seventy-five or more persons with ease.

Even more important than the increased size of the busses has been the improvement in the comfort and convenience of the passengers. Whereas the first busses, after the abandonment of the touring car, were usually crude affairs, ordinarily locally built, with hard wooden seats and open sides, the newer models soon incorporated the riding ease and attractive upholstery of the private car, and before long the sides were glassed in with adjustable windows. Within the past twenty years busses have taken on the appearance and comfort of parlor cars, complete with reclining chairs and reading lights. Many are cooled in summer by electric fans or circulating air and heated in winter with circulating hot water.

Concurrently with the growing bus industry, plans of organization similar to those of the railroads were developed. Elaborate bus terminals were constructed, equipped with all conveniences and comforts for the traveler, including comfortable chairs, lounges, facilities for eating, rest rooms, and opportunities for amusement and recreation. Bus dispatchers speaking over amplifiers notified waiting travelers of the imminent departure of their busses. Also, garages and maintenance departments were established at strategic points along the bus routes so that repair and replacement services could be provided with a minimum of delay and inconvenience to travelers. Interline tickets and correlation of schedules have added to the convenience and speed of long-distance traveling by bus. Dependable schedules have almost attained the degree of precision possessed by railroad time-tables.[58]

The largest, best-known, and possibly the most efficient of all the huge bus corporations in existence is that of the Greyhound system. Because its

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[58]Edwards, op. cit., pp. 9-12.

beginning, development, and efficiency are typical of all the major bus companies of the present time, the story of the Greyhound system will be outlined in brief at this point.

Carl Eric Wickman, a Swede, had come to the United States in 1905 at the age of seventeen. Soon he was earning good wages as a diamond-drill operator in the iron mines near Hibbing, Minnesota. Before long, he became interested in the new automobiles that were beginning to appear occasionally even in such small towns as Hibbing. In either 1912 or 1914—historians differ[59]—Wickman bought a new car with the idea of setting up a dealership in Hibbing. Investing his savings in the project and quitting his work at the mines, he tried earnestly to make a success of his new dealership, but he was never able to sell his first car. Eventually, in order to recover his investment, he drove it out of the showroom and began driving it as a "jitney." He had noted the difficulty experienced by the mine workers in going from their homes in the old town of

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[59]Ibid., p. 8; Reck, op. cit., p. 208.

Hibbing to their work in the mines and foundries in the new community of South Hibbing; in fact, he had had the same difficulties himself as a worker in the mines and foundries. A railroad connected the two towns, but trains did not operate on schedules that were of much help to the workmen.

Wickman's "jitney" was not the first in the area, for several others were already running spasmodically between Hibbing and South Hibbing. These operators ran their vehicles when they felt like it and charged whatever they could get—two dollars for the three-mile trip to the mines was not unusual. Wickman began operating his car for a fee of fifteen cents per passenger for one-way rides, or twenty-five cents for a round trip. Business proved to be good, and soon he invited Andrew G. Anderson, another young Swede, to become a partner and to do half of the driving. They decided to put their "jitney" on a regular schedule which would be convenient for these early-day commuters to and from the mines and foundries. Soon the people formed the habit of waiting for the "jitney" operated by

Wickman and Anderson, for they had learned that it not only was much cheaper than the service provided by other operators, but also that it operated on a regular schedule and was reliable. When it pulled out for its three-mile trip in either direction, fifteen to eighteen passengers were always on board, some clinging to the running boards and fenders. In a few months the partners bought a second car, a seven-passenger touring model. Before long, two more such vehicles and two additional partners were added to the thriving business, one of the partners being Ralph Bogan, a famous motorcycle racer who is now executive vice-president of the Greyhound Lines — Wickman himself is chairman of the board. With these additions, the routes were extended to other near-by towns, and the firm which later became the Greyhound system was experiencing its initial growth.

As every "jitney" that departed for a run was loaded far beyond its seating capacity, Wickman decided to provide more seats on one of his cars as an experimental measure. Renting a corner in a Hibbing

blacksmith shop, Wickman himself soon built his first highway bus—a crude, twelve-passenger vehicle with long seats down each side, the body having been constructed on a chassis originally built for a truck. Soon Wickman had made similar bodies for all of his cars, and the first fleet of Greyhound busses was on the road, although they were far different in appearance, comfort, size, and speed from the modern passenger busses that are to be seen everywhere, in every state of the Union and throughout most of Canada, all of them with the racing-greyhound emblem on the sides.

By 1917, Wickman and his partners had established regular bus runs to several towns in the vicinity of Hibbing, and the firm was earning over $40,000 annually. As business continued to improve, other partners were taken into the business, and the firm bought other near-by short lines and connected them into a single system. Consolidations and mergers followed until, by 1920, the Greyhound had reached Chicago. From there it soon began racing

out in all directions to all sections of the United States and before long into Canada as well.[60]

> The Hound grew fast. But the bus industry itself was a mess. Fly-by-night companies lured passengers into uncomfortable, smelly vehicles which often broke down on the highway. Faulty information about connecting routes inconvenienced and angered patrons.
>
> In leading his buses through this wildcat struggle, Wickman formed long-range plans. He wanted to build a solid organization, linking routes to give dependable through service. Standardized equipment, well serviced, would cut down mechanical troubles.
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> He turned to the railroads. "We're here to stay," he told them. "You can't duplicate our fares or our flexible, door-to-door service. So why not come in with us?" First the Great Northern, then the Pennsylvania, the Southern Pacific and other roads bought in and provided funds to back Wickman's ambitious plans. By 1928 the Hound's routes reached from the Atlantic to the Pacific.[61]

By 1935, Greyhound was operating 138,000,000 bus-miles annually, compared with 125,000,000 in 1934. In 1936, new thirty-six-passenger, rear-engined Greyhound busses were being built after two years of experimentation by Greyhound engineers and those of the General Motors Corporation, builders of Greyhound busses since the beginning. The use of aluminum alloys reduced the weight of the new

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[60]Joseph P. Blank, "How to Please 210 Million People," Reader's Digest, LVI (January, 1950), 65-66; Edwards, op. cit., p. 8; Reck, op. cit., pp. 208-209.

[61]Blank, op. cit., p. 66.

vehicles by twenty per cent and thereby brought savings in fuel, tires, and maintenance costs. In 1936, 340 such busses were delivered and placed in service.

At the same time the Greyhound's monopoly of transcontinental bus service was coming to an end with the organization in 1936 of the National Trailways System, representing a merger of half a dozen large regional bus corporations. The formation of this new transportation giant was permitted by the Interstate Commerce Commission for the specific purpose of breaking Greyhound's monopoly of transcontinental bus transportation. National Trailways began operation with daily routes of over 150,000 miles, providing continuous transportation on one ticket to all parts of the country. The new corporation planned aggressive, large-scale competition with Greyhound in matters of speed, safety, economy, and luxury of travel. Transportation authorities prophesied that the forthcoming "battle of the giants" in the field of bus transportation would result in the stimulation of further progress in design and

development of equipment and of widespread improvement in bus services.[62] This has come true.

The lone "jitney" with which Wickman began the Greyhound bus operations in 1912 or 1914 had become, by 1950, 5,800 sleek Greyhound busses, operating over 84,400 miles of highways—more than six times the mileage of any one American railroad. Greyhound busses carry annually about 210,000,000 passengers—more than the total number of people living on the entire continent of North America![63]

In the bus business long-distance traffic is important, but the Greyhound's analysis of fares collected by the system over a period of three decades has proved that the major portion of the firm's $192,000,000 annual revenue comes from the fifty-cent passenger riding to and from his farm to a village or from a small town to a near-by city for a day of shopping or business. Estimates indicate that Greyhound serves over ten million people who have no other means of public transportation.[64]

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[62]"Enter Trailways," Business Week, March 14, 1936, pp. 14, 16.

[63]Blank, op. cit., p. 65.

[64]Ibid., pp. 67-68.

In 1944 the Consolidated Vultee Aircraft Corporation began producing new busses for Greyhound, using air-cooled aviation engines after they had been proved highly efficient in stringent experiments. At the same time, General Motors, long-time builders of Greyhound busses, were making identical vehicles powered with Diesel engines. These new vehicles carried fifty-one passengers with ease—ten more than could be accommodated by the seating arrangements in the most modern Greyhound busses in use up to that time. Toilet facilities were provided within the busses, and a special compartment was designed for a snack bar and smoking lounge. Some of the models were being equipped with sleeping quarters similar to Pullman accommodations. Wider seats, deeper cushions, and more leg room contributed to the comfort of travel, and new methods in shock absorption eliminated most of the annoying and uncomfortable vibration and roughness usually experienced in bus travel. Complete air conditioning was provided, including both temperature and humidity controls. Larger window areas

would contribute to an enjoyment of scenic attractions along the route. The engine was installed in such a manner that it could be readily removed for repair, and each bus was to carry a new spare engine for replacement in case of motor trouble which could not be quickly eliminated, thus decreasing delays as a result of mechanical difficulties.[65]

General Motors, in 1949, filled an order for 1,900 modern "silversides" coaches for the Greyhound Corporation, each costing $29,500 and equipped with air conditioning, heat-resisting glass, and much-needed wider and more comfortable seats. Into 1950 road tests were continued on two radically new busses which are now coming into use on the Greyhound lines. One of these models, the "Highway Traveler," is an elegant two-level motor palace with lavatory, water cooler, individual radios built into the seat headrests, buffet service, card tables, and walking areas for stretching one's legs. The second type of bus features a raised, glass-paneled observation compartment accessible by stairway from

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[65]"Superbus on Way," Business Week, September 2, 1944, pp. 32, 34.

the regular riding areas of the bus. These special vehicles will be used in areas where daytime travel provides especially scenic attractions. In 1950, after experimenting with two-way radios on three hundred busses in the Middle West, the company decided to install the system on all vehicles. By this means dispatchers can be informed concerning delays, capacity loads, and road conditions. Incidentally, radio communication in the busses serves as a means of reporting accidents and reckless motorists to state police.[66]

Drivers of Greyhound busses have to meet stiff requirements. Two thirds of all applicants are eliminated by physical tests that demand perfect vision and health and by psychological tests that weed out daydreamers, worriers, and those who hesitate to make decisions. Successful candidates, incidentally, must be able to ride a bicycle efficiently, as handling a twelve- or fifteen-ton loaded bus on icy pavement and guiding it successfully around curves require a fine sense of balance.

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[66]Blank, op. cit., p. 67.

Drivers also must like people. Lacking this trait, they would become nervous, short-tempered, and tense from their contacts with hundreds of passengers during the thousand miles or more that they drive each week. Courteous drivers are safe drivers, it has been learned in billions of miles of road experience. Greyhound is justly proud of its "ten-year men," all of whom have been Greyhound drivers for ten years or more, and most of whom have driven half a million miles or more without a scratch.

The driver is expected to be the master of his vehicle. He is to keep off all drunks, and if one does sneak onto the bus and becomes bothersome, the driver is to eject him. "Mashers" or any other disturbers are to be removed from the bus, by force if necessary. Except for Seeing Eye dogs, the driver is not to permit any animals or pets on his behicle. This rule was adopted by the company after a harmless snake escaped from its wicker basket and slithered merrily under and over seats, creating pandemonium on the bus. Each driver must have eight hours of rest each day. En route he eats

lightly to avoid drowsiness. He must always stop the bus and open the door at railroad crossings, not only to enable him to hear whistles from unseen trains, but also the opening of the door breaks the monotonous rhythm of driving and alerts his senses.

> The 9000 men who steer the buses are all "defensive" drivers. They always assume that other drivers on the road are going to do the damn fool thing. That is, they never put their passengers in a situation where their safety depends upon the other driver's good sense.[67]

The depression which stifled the economy of the nation in the early 1930's resulted in a decline in passenger travel on all modes of transportation, but as bus service has been called "the poor man's transportation," the bus lines held their own quite well.[68] Immediately after the depression, the volume of travel mounted again, as did revenues from transportation services. In 1939, for example, the bus companies of the country combined reported a gain of 33.45 per cent over 1938 in passenger-revenue per road mile. In the same year, city and suburban companies had a rise in revenues of 32.25 per cent.[69]

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[67] Ibid.

[68] Interstate Commerce Commission, "Investigation . . .," p. 7.

[69] "Bus Revenues Rise," Business Week, December 2, 1939, p. 26.

In 1946, the Henry J. Kaiser industries in California began production of the newest styles of huge highway busses. This firm had not before been engaged in bus manufacture. Its vehicles were sixty feet long, made principally from magnesium and aluminum except for strong steel framework. They had twelve giant wheels, and were flexible in the center to permit easy turning within a radius of thirty-eight feet, accomplished by means of a special steering device which synchronized the movement of the rear wheels with that of the front wheels. The weight of each bus, empty, was 28,000 pounds, compared to the average bus weight of 22,000 pounds (for smaller models). Some of these busses were equipped with foam-rubber swivel chairs accommodating forty passengers. Others, equipped with ordinary standard seating arrangements, could seat sixty-five people with ease. The vehicles were thoroughly air-conditioned. Separate lavatories for men and women contributed to speedier schedules because of the necessity for fewer stops. Originality produced the newest in bus beauty and comfort. Produced

under initial contract for the Santa Fe Trailways, this bus is now being used by other lines as well. Its six-cylinder, 275-horsepower Diesel engine situated under the floor is mounted on a roller carriage, enabling easy removal for repairs or quick replacement, when necessary.[70]

Seats on present-day busses are much wider and far more comfortable than those of the earlier models. Windows are large and are glazed with safety glass affording a better view and greater safety for the passengers. Push-out windows are used extensively to permit ready escape in case of fire or accident. The electrical lighting and wiring are designed to prevent fires and to provide adequate light. Better spring suspension and shock absorption have improved riding qualities of the modern vehicles tremendously in comparison with busses of earlier years. The early two-wheel mechanical and booster-brake systems and front-end engines have been replaced with efficient air brakes and safer, more powerful, and more dependable rear-end

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[70]"Train without Tracks: Kaiser Style," Business Week, July 27, 1946, p. 16.

engines. Gas fumes from the motors are almost entirely eliminated from the interior of the bus. In addition to safety regulations prescribed by the Interstate Commerce Commission to which all busses must conform, the carriers themselves have been very active throughout the past two decades, especially, in improving the inherent safety of their vehicles and the safe operation of all busses. Within the past few years more efficient Diesel engines have been installed in about ninety-five per cent of the new busses in place of gasoline engines. The more powerful engines and improved brakes permit operation on faster schedules.[71]

> Some of the bus lines are major trunk line carriers operating over heavily-traveled routes between densely populated points, some are long-haul carriers traversing thinly populated rural areas, and others are engaged to a considerable degree in providing service which is auxiliary to or supplemental of rail service. A number of bus companies hold no intrastate operating authority and hence provide little or no local service. However, the majority of the carriers are engaged largely in providing short-journey service. The frequency of the schedules of each carrier varies greatly depending upon the particular type of service which it provides.
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> Long-journey bus traffic is usually heaviest on week-ends. The volume is more evenly balanced in direction of flow, and more predictable than short-journey traffic.

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[71] Interstate Commerce Commission, "Investigation . . .," p. 41.

The passengers are not so much concerned with frequency of schedules as they are with particular departure times and comfortable riding. Week-end travelers usually desire a departure time soon after the close of the week's labor or business. For this reason the number of long-journey schedules and the times of their departure . . . are greatly influenced by those of competing bus, rail, and air carriers. Extra sections rather than additional schedules are utilized to the extent necessary to provide needed service, but where the volume of traffic is heavy, either seasonal or all year, two schedules departing about the same time are used, one with an express or limited bus serving only major points and the other with a local bus serving the small intermediate points as well as the major points. This permits faster schedules between the major points. Competitive long-journey bus lines, like competitive railroads, tend to maintain almost identical departure times for schedules from and to the same cities. Between the larger cities with few exceptions there are more daytime bus than rail schedules.

Short-journey bus service is of far greater importance to the public than long-journey service. It is the service on which the public depends for home and work travel, for travel between nearby metropolitan centers, for travel by shoppers and other persons between large cities or small trade centers and surrounding areas, for farm-to-farm travel, and for travel between homes and nearby resort and vacation points. Except for resort and vacation traffic the volume of short-journey traffic is heavy on week days and light on week-ends. It is largely unbalanced, moving in one direction in the morning and in the other direction in the evening. It is highly fluctuating and unpredictable in volume and on-and-off demands. At times the regularly scheduled buses carry extremely light loads and at other times service is sought by several more passengers than can be carried on the regular schedule necessitating operation of a lightly loaded extra section and considerable deadhead mileage. The conditions described above contribute toward high costs of providing short-journey service. The fluctuating needs of the public must be satisfied, however, even though the cost of providing the service is higher than it would be if the volume of traffic was balanced, stable, and predictable.[72]

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[72] Ibid., p. 47.

The motor bus finds its greatest field of service where traffic is comparatively light or where flexibility is required. In such situations the bus is more economical than the railroad train, is able to change its route more readily, can provide more frequent service, and can load and unload largely according to the convenience of passengers. In journeys of moderate length the bus is therefore an effective competitor of the steam and interurban electric railway. Railroads themselves often employ the bus, realizing real economies by substituting bus service for all-rail service on branch lines, or by operating busses in lieu of local trains on main lines. Busses are also frequently advantageous in terminal service and in transportation to off-rail points. However, the bus appears at a disadvantage where traffic is heavy, both in cost and in speed. Here it must yield, still, to the railway, which operates at a low unit cost when the volume of travel is large and which ordinarily is less obstructed by traffic congestion. In spite of a number of improvements in recent years, the bus still cannot compete

with the train in the comfort of travel afforded, and this is an important consideration on long journeys. Bus transportation, moreover, is subject to interruptions and dangers growing out of changes in the weather and because of congested traffic conditions.[73]

Between 25,000 and 30,000 places in the United States are now served by motor busses, yet there are only 8,918 communities of more than 1,000 population in the country. A number of relatively large and many small communities depend entirely or almost entirely upon bus transportation in addition to private cars. Many of these points are not situated on railroad lines, whereas others are served by infrequent trains which may pass through the community in the early hours of the morning or at other times equally inconvenient for the traveling public. Of the 229 points in Vermont served by busses in 1950, only 120 had railroad service as well. Somewhat similar conditions exist in many other sections of the country. Often rail travel

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[73]Bigham, op. cit., p. 91.

is available in only two directions, whereas bus service in communities of any noticeable size is ordinarily provided in four or more directions.[74] Thus bus travel is much more adaptable to the needs and convenience of the traveling public.

In summary it may be said:

> The attractiveness of motor bus transportation to the traveling public is due to a number of factors, including lower rates of fare, guaranteed seating arrangements which may be made in advance, the directness of the routes, the convenience to passengers who wish to board or leave the busses at intermediate points, the frequency of service, the opportunity afforded by the busses to travel directly to or from small communities which are not served by steam or electric railways, the more attractive scenery along the bus routes, the availability of what frequently amounts to house-to-house service, and other factors peculiar to the individual taste or needs of the passengers.[75]

The succeeding chapter presents a discussion in some detail of a phase of the present study which has already been intimated a number of times, namely: the co-ordination of truck and bus services with the regular transportation facilities provided by railroads, the motor vehicles being used either as auxiliaries to or as replacements for rail transportation of freight and passengers.

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[74] Interstate Commerce Commission, "Investigation . . .," p. 40.

[75] Wilson, op. cit., p. 149.

CHAPTER IV

CO-ORDINATION OF RAILROAD AND HIGHWAY TRANSPORTATION

Because of large volumes of tonnage which have been diverted from the railroad to the highway, the competition of the freight-hauling truck has become a factor of extreme importance to the railway. Even in the 1920's many rail lines began to take steps to meet this serious competition by establishing their own motor-trucking services. A survey conducted by the Southern Pacific Railroad in California in preparation for its own entry into the trucking industry in that state indicated the extent of motor-carrier competition. In 1929, total freight revenues of California truck operators were approximately $45,000,000, whereas intrastate revenues of the Southern Pacific totaled only $36,500,000 and its interstate revenues allocated to California amounted to $46,128,000. The Southern Pacific estimated that its loss in revenue due to freight diversion to

the highways in California alone totaled about $15,000,000 in 1929. Similar situations with varying volumes of traffic and losses existed all over the nation. In the face of this crisis the railroads discovered that if they wanted to regain any substantial portion of the freight tonnage lost to motor trucks, they would have to offer equivalent facilities, rates, and services such as those which had attracted so much of their business to motor carriers in the beginning.[1]

In its effect upon railroad traffic, highway and automotive development has operated in two directions: (1) it has brought the railroads freight traffic that would not otherwise have moved by rail, and some of which would not have moved at all; and (2) it has diverted freight and passenger traffic away from the railroads that would otherwise have moved by rail. The net effect of these two influences, operating as they do in opposite directions, is difficult to ascertain, but it is believed that railroads have almost certainly lost more in both

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[1]Edwards, op. cit., pp. 42-43.

freight and passenger traffic than they have gained as a result of highway construction and rapid development of motor vehicles.[2]

Since the first World War, many changes have occurred in methods of distribution, merchandising, and business practices, and the motor truck has been one of the greatest contributing factors in bringing about these changes. Many manufacturers now distribute their products direct to retailers and jobbers; merchants can therefore hold their inventories to a low level of investment, since their stocks can be quickly replenished by motor truck—in many instances, overnight. As the radius of motor-truck service has increased, jobbing territories have become overlapped and rail competition within such areas has become more aggressive. The rapid expansion of chain-store systems has been made possible in the main by the motor truck. The maintenance of central warehouses into which carload lots of goods are shipped permits distribution to branch stores in less-than-carload lots at

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[2]Julius H. Parmelee and Earl R. Feldman, "The Relation of the Highway to Rail Transportation," Highways in Our National Life, edited by Jean Labatut and Wheaton J. Lane, p. 229.

frequent intervals. This practice has, in many instances, eliminated jobbers at interior points who formerly received goods by rail in carload lots and then reshipped by rail in smaller quantities to outlying points.[3]

> Railroad efforts to meet truck competition through rate cutting, the offer of store-door pick-up and delivery service and improved train service have met with indifferent success, unless the carrier has itself entered into truck operation and offered a service fully equivalent to that of the independent truck operator. Where such is done, however, it is only reasonable that the certificated motor carrier, who has pioneered and developed the improved type of service to which the shippers have so widely turned, should be protected in his investment.[4]

When busses compete with railroads for relatively long hauls, bus fares cannot be as high as the cost of rail transportation because the railroad is recognized as a higher-grade, faster means of transportation with which, on long journeys, busses cannot compete advantageously. For long-distance trips, speed is another factor decidedly in favor of the train, since busses require approximately six days and six nights for the journey from New

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[3]Leo J. Flynn, Coordination of Motor Transportation, Report of Interstate Commerce Commission, Senate Document No. 43, 72d Congress, 1st Session, p. 9.

[4]Edwards, op. cit., p. 4.

York to San Francisco, whereas the fastest time by rail between these two cities is approximately three and one-half days.[5]

From 1926 to 1941 annual ton-miles of freight transported increased 6.7 per cent for the railroads, whereas for trucks the increase was 142.8 per cent. During the same period, passenger-miles increased 17.6 per cent for the railroads, and 211.9 per cent for busses.[6] Although these figures appear gloomy enough for the railroads, the actual situation in passenger trends was much worse for rail lines than that implied, since a large volume of passenger traffic formerly going by rail was traveling by private car and was, therefore, not reflected in these calculations. Private passenger automobile travel on all highways and roads outside of city limits has been estimated by the United States Bureau of Public Roads at 135,000,000,000 vehicle-miles in 1941. Assuming an average of two persons in each car, which is probably a conservative estimate, we

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[5]Flynn, op. cit., p. 28.

[6]Parmelee and Feldman, op. cit., pp. 231-232.

arrive at the astonishing figure of 270,000,000,000 passenger-miles by automobile on roads and highways outside of cities. This total was almost twenty times the volume of travel by commercial bus in that year, 9.2 times the passenger travel by rail, and represents eighty-six per cent of the combined passenger mileage for all three modes of travel--rail, bus, and private car.[7]

> Whatever may be true of the future, the principal immediate public concern is to determine the type of business in which rail and motor facilities shall, respectively, be encouraged to engage, rather than to promote the elaboration of joint agreements for the conduct of complementary operations. Motor vehicle and rail relations are competitive, at the moment, more than they are complementary. The rail is losing business to the road. This disquiets governments which are responsible for railroad bills and shippers who fear a closing of the railroad plant. Proposals are, therefore, made to divide the field of transport between rail and road on some principle and by some method which may be generally approved. The process is called "coordination."[8]

The term "co-ordination" has assumed a prominent position in recent years in the literature of the transportation problem. By "co-ordination" of transportation is meant the fitting of each form or mode of transport into its proper place in the total

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[7] Ibid., p. 233.

[8] Daggett, op. cit., p. 615.

transportation system. Co-ordination is the assignment of each facility to those transportation tasks which it can perform better than other facilities, under conditions which insure its fullest development and most efficient service in its particular area of transportation. The term is sometimes employed in its narrower sense of implying the provision of joint services by two or more transportation agencies, or of avoiding unnecessary duplication of transportation facilities and services, whether the same or different forms of transportation are involved.[9]

> **The co-ordination of motor and rail transportation may be effected through the ownership and operation of automotive vehicles by the railroad companies; through the ownership and operation of automotive vehicular equipment by subsidiary companies organized and controlled by railroad companies; by the establishment of agency arrangements under which motor transportation companies perform certain transportation services as agents of the railroad carriers, or by the establishment of joint services and through routes and rates by railroad and motor transportation companies. . . .**
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> **Co-ordination in the last analysis means, in the ultimate, an integration of various types of carriers, under common or diverse ownership, in which all types of carriers work together harmoniously without destructive competition under arrangements or agreements mutually satisfactory to the carriers and advantageous to the public.[10]**

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[9] D. Philip Locklin, Economics of Transportation, p. 834.

[10] Wilson, op. cit., pp. 324-325.

Today, the transportation problem is mainly one of adjustment between the different forms or methods of transportation. The problem of co-ordination is not new, as the relation of rail transportation to water transportation has been a matter of concern since railroads came into the transportation picture. In recent years, however, the problem has become more important because of the revival of water transportation and the development of new means of transportation — highways, airlines, pipelines, and so on. When roads were used by horse-drawn vehicles, there was no problem in establishing their place in the transportation system, but when motor vehicles and hard-surfaced highways appeared, the highway became a strong competitor of the railroad.[11]

During 1926 and 1927 the Interstate Commerce Commission conducted a nation-wide investigation of bus and truck operations. As a result of this study, the Commission recommended that railroads should enter more and more into highway operations in order to supplement their rail operations, always

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[11]Locklin, op. cit., p. 835.

under the supervision of the Commission, and that truck and bus operations should be adequately regulated, preferably on the basis of uniform federal legislation.[12]

Partly as a result of the Commission's survey, perhaps, the years after 1925 were characterized by widespread interest on the part of railroads in motor-bus and motor-truck transportation. Railroads lowered their passenger rates to meet those of busses, and they themselves began increasingly to enter the field of motor-bus operation. Short-distance bus transportation has continued to be preeminently successful even in the face of rail competition, and will undoubtedly continue to be so. Its most serious threat of competition comes, in fact, from the private automobile rather than from the passenger train. Even long-distance bus transportation will probably continue to meet railroad competition successfully. Even by reducing their fares for passenger travel to the level of those charged by bus lines, the railroads have not generally succeeded in attracting many patrons from the

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[12]Duncan, op. cit., pp. 86-87.

busses. The fact that corresponding increases in patronage have not followed drastic reductions in railroad fares has brought about increased losses. At the same time, railroads themselves have been rapidly going into long- and short-distance bus operation, often in direct competition to their own rail lines.[13]

In the six-year period from 1925 to 1930, the number of railroads in the United States adopting the use of motor equipment to some extent rose from ten to eighty-one, and the number of motor trucks operated by rail lines increased from three hundred to an estimated four thousand. At the same time, the number of miles of bus routes operated by railroads mounted from about 2,000 to approximately 50,000.[14]

In November, 1930, the Association of Railway Executives issued an official statement of policy setting forth their ideas concerning existing unfairness in the field of transportation and the steps

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[13]Edwards, op. cit., pp. 3-4.

[14]Ibid., pp. 22-23.

necessary to correct the situation. The statement said, in part:

> **The public is entitled to the best transportation at the lowest reasonable cost. However, where the rail carriers are prevented through legislation or regulation from fairly competing with new or old forms of transportation, or where the service rendered by the competitor is a subsidized one, such unfair handicaps should be removed.** [15]

While opposing highway transportation of freight and passengers to the limit of their powers, railway companies were, at the same time, entering the very field which was beginning to offer them such strong competition. In 1927, railroads operated a total of 745 busses over 2,856 miles of intrastate routes and 1,051 miles of interstate routes, earning a total passenger revenue of $6,866,475. By January 1, 1930, thirty-two steam railroads or railway systems had control, in whole or in part, of motor-vehicle operations either directly or through subsidiary or affiliated companies. Property investment of the railroads in such motor services totaled $46,114,891. During the first six months of 1930, they operated 3,105 busses over 38,168 miles

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[15] Duncan, op. cit., p. 87.

of intrastate routes and 27,633 miles of interstate routes. During this period a total of 35,930,847 passengers were transported by these rail-controlled busses, earning revenues totaling $16,182,-029. These figures do not include data for motor-vehicle companies which were neither affiliates nor subsidiaries of the railroads, though having contracts with rail lines for the transportation of passengers or property beyond rail lines, or in substitution for rail hauls.

In 1927, railroads had operated 114 trucks and thirty-four trailers over about two thousand miles of intrastate routes and 386 miles of interstate routes. By 1930, seventeen steam railroads owned, as of June 30, 551 trucks, operated over 8,863 miles of intrastate routes and 1,546 miles of interstate routes. These rail lines also owned 115 trailers. During the first six months of 1930, these trucks carried 413,259 tons of freight, of which 22,968 tons were interstate shipments.[16]

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[16]Flynn, op. cit., p. 7.

For a period of several years concerted efforts were made by many railway companies to prevent further diversion of freight traffic to the highway and to regain tonnage already lost to the trucks. But, unless the railroads established some form of co-ordination with truck services, these efforts were not successful to any marked degree.[17] Motor transportation of both goods and passengers was coming into widespread prominence.

In 1933 the Federal Co-ordinator of Transportation reported that 209 steam or electric railway companies were engaged to some extent in motor-vehicle operations. Motor-truck service was performed by rail carriers over 469 distinct routes, totaling 16,394 miles.[18]

At about this same time it was estimated that the actual operating cost of a passenger train averaged somewhere between eighty cents to $1.25 per mile, depending upon the type of road and the locality which it served. This meant that this amount would be saved by the rail company if the

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[17] Ibid., p. 62

[18] Locklin, op. cit., pp. 851-852.

train was taken out of service. Motor-coach operation, on the other hand, cost from sixteen to thirty cents per mile, with an average of about twenty-five cents for the standard twenty-nine-passenger vehicles of that day. The difference between the cost of operating a motor bus and the cost of operating a train indicates the savings to the railroad if motor-coach service was substituted for train service. Savings ranged from fifty-five cents to one dollar per mile. Thus, on a daily route two hundred miles in length with passenger service three hundred days a year, the saving to be realized by bus operation in comparison to the cost of operating a train would range from $33,000 to $60,000 annually. It should be kept in mind that these were mere operating costs, and that passenger fares in each instance would change the picture somewhat.

Becoming aware of the wastefulness involved in operating trains over unprofitable passenger routes, many railroads began the use of busses instead of trains. A few typical examples will be cited. The

Boston and Maine Railroad, a pioneer in the use of motor coaches, was able to save $195,000 annually by using busses for some of its trains. The New York, New Haven, and Hartford eliminated 836,366 passenger-train miles a year at an annual saving of $1,201,523. The Reading Railroad replaced a number of passenger trains with motor coaches with a saving of 391,000 passenger-train miles a year and a reduction of $409,000 in operating expenses. The Pennsylvania Railroad System eliminated 798,-561 train-miles annually, at an annual saving of $478,240. In testimony before the Interstate Commerce Commission in 1931, officials of the Pennsylvania System stated that its co-ordination of rail and bus transportation had resulted in substantial profits without regard for operational savings to the railroads.[19]

In 1933 the following summary of the benefits inherent in railroad-bus co-ordination was written:

> Under the pressure of rapidly declining passenger revenues the railroads will undoubtedly turn to an increasing use of the motor coach as a means of reducing

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[19]Edwards, op. cit., pp. 23-24.

> their losses from passenger train operation, the bus providing the most satisfactory instrument for this purpose. In this connection it has been the policy of the Greyhound system [for example] to divide its operating units roughly in accordance with the railroad transportation districts of the country and to secure the cooperation of the major railroad in each territory by selling it a minority interest in the bus company. The bus company is thus able to perform a valuable service to the railroads in permitting them to withdraw unprofitable local passenger trains from both main lines and branch lines upon substitution of bus service.[20]

Not until Congressional approval of the so-called Motor Carrier Act in 1935 were legal steps taken to define the nature of co-ordination in transportation. This Act attempted to define the problem and authorized the Interstate Commerce Commission to exercise authority in the realm of highway transportation as it had long done in the fields of water and rail transport.

Section 207 of the Motor Carrier Act deals with specifications for beginning new truck or bus operations, wheress Section 213 has to do with the consolidation or co-ordination of transportation services. It is evident that the two are closely related. They are actually alternative methods of the realization of a single purpose, since railroads may enter

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[20] Ibid., p. 27.

motor-transportation fields either by organizing new companies, by purchasing control in concerns already in operation, or by entering into contracts with existing companies. In reality, railroads find it more difficult to acquire control of existing motor lines under Section 213 than to initiate new enterprises under Section 207. This is true because Section 213 requires the Interstate Commerce Commission to find out whether the proposed consolidation or co-ordination will "promote the public interest by enabling such carrier . . . to use service by motor vehicle to public advantage in its operations," whereas Section 207 requires that proposed new services by truck or bus must merely be "required by present or future public convenience or necessity."[21]

Section 213 of the Motor Carrier Act states, in part:

> It shall be lawful, under the conditions specified below, . . . for a carrier by railroad, express, or water to consolidate, or merge with, or acquire control of, any motor carrier or to purchase, lease, or contract to operate its properties, or any part thereof.

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[21]Daggett, op. cit., p. 641.

> When ever a consolidation, merger, purchase, lease, operating contract, or acquisition of control is proposed under this section, the carrier or carriers or the person seeking authority therefor shall present an application to the [Interstate Commerce] Commission, and thereupon the Commission shall notify the Governor of each State in which any part of the properties or operations of the carriers involved in the proposed transaction is situated, and also such carriers and the applicant or applicants, and other parties known to have a substantial interest in the proceedings of the time and place for a public hearing. If after such hearing the Commission finds that the transaction proposed will be consistent with the public interest, and that the conditions of this section have been or will be fulfilled, it may enter an order approving and authorizing such consolidation, merger, purchase, lease, operating contract, or acquisition of control, upon such terms and conditions as it shall find to be just and reasonable and with such modifications as it may prescribe: Provided, however, That if a carrier other than a motor carrier is an applicant, or any person which [sic] is controlled by such a carrier other than a motor carrier is an applicant, or any person which [sic] is controlled by such a carrier other than a motor carrier or affiliated therewith, . . . the Commission shall not enter such an order unless it finds that the transaction proposed will promote the public interest by enabling such carrier other than a motor carrier to use service by motor vehicle to public advantage in its operations and will not unduly restrain competition.[22]

Such restrictions, of course, were designed to serve as protection for each mode of transportation from suppression or strangulation by competing transportation agencies. Almost identical provisions were carried over into the Transportation Act of 1940.

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[22]Ibid., pp. 640-641.

The leading legal contest under the above provision of the Motor Carrier Act is known as the Barker case, in which an affiliate of the Pennsylvania Railroad sought to acquire control of a motor carrier. The Interstate Commerce Commission, in this case (1936), was "not convinced that the way to maintain for the future healthful competition between rail and truck service is to give the railroads free opportunity to go into the kind of truck service which is strictly competitive with, rather than auxiliary to, their rail operations." In the final decision of the case the Pennsylvania Railroad affiliate was allowed to acquire the truck line, but the Commission laid down a number of conditions to insure that motor-carrier operations would remain strictly auxiliary to rail service, such as the substitution of truck service for freight trains. No truck service was to be provided to or from any point not on the railroad lines. Thus the Interstate Commerce Commission specifically disapproved of railroad-controlled motor-carrier operations in competition with the railroad itself, or those

competing with an established motor carrier, or those which would invade a territory already adequately served by another rail carrier. The policy formulated in the Barker case has been applied in many other instances and may be regarded as the established policy of the Commission.[23]

As already cited, the Motor Carrier Act of 1935 required that proposed combined transportation services must enable the rail carrier "to use service by motor vehicle to public advantage in its operations and will not unduly restrain competition." The Interstate Commerce Commission, consequently, has felt obligated to approve unifications that offer reasonable prospects of improving or increasing transportation facilities and/or services. Railroads have been given considerable freedom to substitute highway services for rail operations in areas already served by rail transportation. In connection with a leading case involving the Pennsylvania Truck Lines in 1936—referred to above as the Barker case—the Commission formulated a concise statement

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[23]Locklin, op. cit., pp. 852-853.

of its policy, a portion of which is reproduced as follows:

> The proof is convincing that over some of the routes in question the railroad can "use service by motor vehicle to public advantage in its operations." The motor vehicle can undoubtedly be used as a very valuable auxiliary or adjunct to railroad service, particularly less-than-carload service, and the many opportunities for such use here have been pointed out of record and are clear. Such co-ordination of rail and motor-vehicle operations should be encouraged. The result will be a new form of service which should prove of much public advantage. Nor do we believe that the creation of this new form of service will "unduly restrain competition." On the contrary, it should have the opposite effect.[24]

Railroads, of course, have been greatly restricted in their provision of highway freight service by the fact that the Interstate Commerce Commission often enforces stringent conditions and requirements governing the service. Each proposal for co-ordinated services is evaluated by the Commission in the light of all contributing factors, and decisions influencing its operation are made accordingly. Ordinarily, railroad-owned or controlled motor-freight operations are not permitted to conduct a direct common-carrier operation, but are limited to the handling of freight that is carried

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[24]Charles L. Dearing and Wilfred Owen, National Transportation Policy, pp. 308-309.

part of the distance by rail, or to services taking the place of those formerly rendered by rail. Thus, motor operations are looked upon as supplementary to rail haulage. Most railroads claim that they should be permitted to handle less-than-carload freight moving entirely by truck, as well as that being hauled by a combination of rail and truck, in order to perform efficient rail-truck service in the public interest.

Under such restrictive or limiting conditions, railroads find it difficult to engage in motor-freight operations of a long-haul nature to any great extent; and when they do undertake large-scale, long-distance hauling by truck under the regulations enforced upon them, they seldom can operate at a profit.

Many railroad companies also offer co-ordinated rail-highway, common-carrier passenger services. The highway busses are operated either by the railroad or by an existing motor-coach company with which the railway company has entered into a contract, or, on the other hand, they may be

operated by a subsidiary company owned by the railroad or by an affiliate of the railway system. Ordinarily, passengers may use the busses provided by the co-ordinated service without having to ride on the train at all, if they prefer not to do so. Such railroad bus service is especially valuable for use in place of trains on light-traffic branch lines, as feeder services for off-rail points, and for sightseeing tours supplementing long rail trips through scenic areas.[25]

In the United States the policy of co-ordination in transportation has resulted chiefly in the exclusion of a number of enterprises which were inadequately financed or for some other reason thought to be unlikely to render adequate service in common-carrier operations. Co-ordination has done little to reduce the growth of transportation facilities proposed by companies or individuals with sufficient experience and capital to promote their proposals, and still less to induce already established carriers to relinquish their place to others which might be

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[25]Parmelee and Feldman, op. cit., pp. 237-238.

preferred on grounds of greater efficiency, economy, and public service.[26]

During the period of World War II, from 1942 to 1945, railroads regained a large share of the proportionate traffic they had lost between 1926 and 1941, for reasons already stated in previous chapters. The railroads attained their traffic peak, however, in 1944, both regarding ton-miles and passenger-miles, both of which have since declined substantially. For example, railroad ton-miles in 1947 were 11.2 per cent less than the 1944 peak, and railroad passenger-miles were 51.9 per cent below 1944 levels. Still further declines occurred in 1948 and 1949. In contrast, highway freight traffic has increased. Truck freight rose in volume from 49,300,000,000 ton-miles in 1944 to 77,900,000,000 ton-miles in 1947, representing an increase of fifty-eight per cent. During the same three-year period, bus traffic declined by 11.7 per cent, perhaps because of increased use of passenger cars after the war.[27]

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[26]Daggett, op. cit., p. 645.

[27]Parmelee and Feldman, op. cit., p. 233.

Whereas the railroads formerly lobbied for highway "road-block" legislation to restrict truck and bus traffic and still try to keep as many of these laws on the books as possible, since the war they have put first emphasis upon a new idea, "integration of transportation." This plan proposes that the government should permit a number of so-called transportation companies to buy up all means of transportation—rail, ship, air, and highway. These transportation companies would then compete with each other, but no longer would there be competition between the various means of transportation. Advocates claim that such a plan would bring about much greater efficiency and economy by eliminating wasteful duplication of services and facilities. It could be put into operation without destroying any single means of transportation, which is the fate which may now await the railroads in competition with the trucking industry. Truckers are violently opposed to the proposals for "integration of transportation" because of their fear that the railroads would dominate the new transportation companies to

be established under the plan. Many Congressmen see too much of a monopolistic trend in the scheme and insist that it would be neither efficient nor economical.[28] Meanwhile, purposeful lobbying continues.

> Railroad management should have a receptive and constructive attitude toward new business practices, new methods of distribution, and new forms of transportation. Railroads should be permitted to use any agency with a view to making available to the public the most efficient and economical transportation service. Coordinating highway transportation with railroad transportation offers a field of transportation expansion which should not only meet modern business needs by lowering distribution costs, but should be reflected in more stable and satisfactory returns upon capital invested in all forms of transportation.[29]

Within recent years the railroads have been rapidly enlarging both the number and scope of their motor passenger services, both supplementary and complementary to rail services. Simultaneously, rail lines have been extending and rounding out their freight services by the performance of motor-freight transportation, either with their own trucks or those of a contract carrier. Such practices have

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[28]Robert Bellaire, "Let 'em Roll!" Collier's, CXVI (October 27, 1945), 23, 73.

[29]Flynn, op. cit., p. 5.

often resulted in joint use, by rail and motor carriers, of facilities formerly used only by the railroads. The relationships of motor passenger terminals with railroad passenger stations is especially close, as is that of the freight terminals of the two types of carriers. Thus, real progress is being made in the integration and co-ordination of facilities and services for both passengers and freight.[30]

Great operational economies are possible through the substitution of bus service for all-rail operations on unprofitable branch lines on which rail passenger traffic is light. Busses have also replaced many local trains on main rail lines. In addition to greater economy for the company, busses can provide more frequent service for the patrons. In the main, bus lines do not act as feeders for rail service. Usually bus lines tie in with one another rather than with the railroad. Except for terminal bus service, employed in transferring passengers from one terminal to another, and

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[30]Johnson, Huebner, and Wilson, op. cit., p. 647.

provision of bus service to off-rail points such as national parks and resorts, bus operation as a supplementary feeder service for the railways has not been highly successful.[31]

The substitution of motor-coach service for trains operating at a loss is not the only reason for railroad operation of motor busses. Several rail lines began operating busses in direct competition with their train operations in order to protect themselves from competition from an established bus line. In 1929, for example, a single large motor-coach company purchased and consolidated local bus lines until every city on the trunk line of the Union Pacific Railroad was served by the bus line. Since 1920, passenger-train travel had been steadily decreasing and some trains, even on this large system, were being operated at a loss. This twofold pressure of serious competition from the bus line and of financial losses from train operation caused the Union Pacific to begin extensive motor-bus operations in 1929 and 1930. Strategic

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[31]Moulton, op. cit., pp. 690-691.

feeder lines were purchased and certificates of public convenience and necessity were secured from the various state regulatory commissions. Transcontinental bus operations were then established paralleling the lines of the Union Pacific from Chicago and St. Louis to Portland, Oregon, and Los Angeles. East of the Missouri River, these new bus lines were operated by the Chicago and Northwestern, an affiliate of the Union Pacific.[32]

When railroads enter the field of passenger transportation by motor bus, their method of operation takes one of four distinct forms, or it may possibly employ elements of two or more of these forms: (1) The bus service is railroad-owned and managed directly by railroad employees, usually by means of the establishment of a motor-coach department in the administrative organization. (2) The railroad contracts with an independent bus operator to provide the desired services for the rail line. (3) The railroad may acquire an interest in existing bus companies by means of stock

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[32]Edwards, op. cit., pp. 25-26.

ownership; this is usually a minority interest, but the facilities of the motor-bus line are thus made available to the railroads. (4) The majority of railroads which engage in bus operations set up subsidiary companies with their own distinct administrative organizations, but using the ticket-selling and solicitation facilities of the railroads.[33]

In the present age of big business and of nation-wide operations on a gigantic scale, it is reasonably clear that the future lies with the large bus companies rather than with the small or local operators. These larger concerns alone can provide equipment and services designed to attract traffic from the railroad, they can employ superior managerial ability, and they are more likely to adopt sound policies of accounting and finance.[34] There is a strong tendency at present for the largest of the bus companies to be owned by railroads, in whole or in part. Hence, there is likelihood that ownership of railroads and of bus lines will, in time, become identical.

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[33]Ibid., p. 26.

[34]Daggett, op. cit., p. 88.

To obtain a permit to own or acquire a motor-bus or truck line, a railroad company must convince the Interstate Commerce Commission that proposed motor services would be of public advantage and not bring about undue restraints upon competition. Until 1941, the Commission interpreted this provision of the law to mean that railroads could use trucks for hauling traffic that had been, or was to be, transported by the railroad, but no other types of traffic. In that year the Commission broadened its interpretation, and has in numerous instances allowed railroad-controlled motor-freight carriers to handle traffic other than that which has been, or was to be, moved by rail. When such non-rail traffic is allowed, however, the motor carrier concerned is restricted from transporting freight between designated "key points" along the route. This provision is enforced for the purpose of preventing railroad-controlled motor carriers from unduly limiting or competing with the traffic of other motor carriers.[35]

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[35]Johnson, Transport Facilities, Services, and Policies, p. 126.

One of the most important reasons why large volumes of freight have in recent years abandoned the railroad in favor of the truck lines is the appeal which store-door service has for many shippers, combined with convenient initial pickup of merchandise ready to be shipped. In an effort to regain this lost traffic many rail lines have developed a plan offering truck pickup and delivery combined with rail long-distance hauling. These services provided by the railroad are complete from the door of the shipper to the door of the consignee, from the door of the shipper to designated freight stations in the vicinity of the consignee, or from the freight station of the shipper to the door of the consignee. Such a system saves much time and expense of terminal handling, freight-car switching, and storage, and speeds up deliveries considerably.[36] At the same time, the plan has enabled the railroads to regain some of their lost freight business. Except for air express, trucks are the fastest and most flexible means of freight transportation now

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[36]Moulton, op. cit., p. 679.

in use.[37] Realizing this, rail lines are capitalizing on the natural advantages of motor-truck hauling, combining this means of carrying freight with the advantages of the railroad for long-distance hauls.

Freight transportation on the highways as we know it today in the United States is "a substantial fulfillment of man's age-old need and quest for faster, cheaper and more efficient means of moving things from where they are to where he wants them to be."[38]

In carrying out this objective and at the same time utilizing the co-ordination of rail and motor services, the use of steel containers has proved to be highly practical and economical for the transportation of certain types of commodities. The size of these containers varies, but ordinarily from eight to twelve of these receptacles can be placed on a railroad flat-car. This system provides more expeditious service and cheaper rates. Containers,

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[37]Bellaire, op. cit., p. 22.

[38]Bresnahan, op. cit., p. 247.

used by shippers, trucking companies, and railroads, are placed by truck at the door of the shipper or the consignee for loading or unloading, respectively. Packing and wrapping costs are reduced or entirely eliminated; loss and damage to goods are practically unheard of; and the service is faster. Trucks haul the loaded containers to the railway freight terminal, where cranes place them on flatcars. When they reach their destination, they are crane-loaded onto trucks for fast delivery to consignees. Trucks used in this service may be either railroad-owned or railroad-contracted. To the advantage of the railroads, the favorable points in the use of steel containers include the simplification of billing, reduction in light loading, less switching and terminal freight-car movement, speedier service, and fewer transfers in shipping.

The steel container was first used in 1921 between Cleveland and Chicago, and a year later between Buffalo and New York City. The New York Central lines handled 278 containers in 1922, 10,217 in 1927, and 47,886 in 1930; whereas the Pennsylvania

Railroad hauled 63,084 containers between June 20, 1928, and January 3, 1921. Containers are now used extensively between many of the larger cities, especially in the eastern part of the country.[39]

Demountable truck bodies were first used experimentally in the Cincinnati terminal, and since 1920 they have been employed extensively at that terminal and at many others. This plan, whereby easily detachable truck bodies, loaded with merchandise, may be lifted by crane onto railroad cars and hauled to their destination, where they are placed upon waiting truck chassis for delivery, provides rapid and economical transfer of less-than-carload quantities of freight. Actually, the principle involved is the same as that employed in the use of steel containers, except that in this instance the "container" is the truck body itself. The demountable truck body eliminates the rehandling of unit loads and provides a means for linking existing facilities of rail companies and truck lines. The Pennsylvania Railroad has, for many years, used

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[39]Moulton, op. cit., pp. 675-676.

demountable truck equipment between Philadelphia and New York City. Rates are so reasonable that truckers have found it profitable to dispense with highway hauls for many commodities and to send them in demountable truck bodies by rail, while maintaining at the same time highway truck services for other merchandise.[40]

The use of motor vehicles by railroads—including both busses and trucks—sometimes takes the place of train service, sometimes supplements train service, and sometimes is independent of and in addition to regular railway operations. At terminals, railroads find trucks to be highly useful in varying freight movements within the terminal area or between different terminals, and also for the collection and delivery of freight at the shipper's loading docks or at the consignee's place of business.[41]

Admittedly, there are both advantages and disadvantages in the co-ordination of transportation facilities and services, but the favorable aspects

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[40]Ibid., p. 677.

[41]Daggett, op. cit., p. 615.

appear to outweigh the unfavorable. Certainly, from the viewpoints of economy, speed, efficiency, and convenience, the practice of co-ordination has already proved its worth.

Whereas the co-ordination of the facilities and the integration of the services of rail and motor transportation have attained only a partial state and are by no means complete or fully developed, real beginnings have been made. Since interstate rail and motor carriers are now subject to uniform regulation by the same Commission, the trend toward co-operation and co-ordination may be expected to continue.[42]

With the succeeding chapter this study of truck and bus transportation in the United States will be brought to a conclusion. The remaining phase of state and federal attempts to regulate such transportation will be considered.

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[42]Johnson, Huebner, and Wilson, op. cit., p. 650.

CHAPTER V

STATE AND FEDERAL EFFORTS TO REGULATE THE TRUCKING INDUSTRY

> Everyone agrees that there is a place in the transportation industry for trucks.
>
> How big they should be — how fast they should run — how much they should pay for use of the public highways — are questions which the truckers dispute with the public.[1]

As earlier sections of this paper have dealt jointly with both truck and bus operation and problems, so likewise should the present chapter include some mention of the efforts to regular bussess and bus transportation as well as the trucking industry. However, most of the regulatory enactments at both the state and national levels have been aimed primarily at freight transportation on the highways, and for this reason little will be said concerning the regulation of busses.

Control over passenger transportation within cities is vested in the franchise, a contract or

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[1]Frank R. Connolly, The Case of the One Per Centers, pamphlet, unpaged.

agreement between the governing body of the city and the carrier, whereby the carrier promises to provide certain specified transportation services and to meet certain conditions set forth by the city. Protection is promised the company against competition, and in return the company promises to provide certain transportation services under any and all conditions, regardless of weather, traffic, breakdowns, and other factors. The franchise is usually granted for a designated length of time, subject to repeated renewals if satisfactory transportation service is rendered; but the city may refuse to renew the franchise, or it may attempt to revoke it at any time before its expiration date by taking court action.[2]

Most of the states found it desirable during the 1920's to regulate the quality and quantity of motor-vehicle transportation of passengers. These regulations often dealt with interstate bus traffic as well as intrastate passenger travel, and were aimed at curbing the cut-throat competition which was

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[2]White, op. cit., p. 304.

coming into existence as well as to provide safe and convenient services for passengers. During this time the "jitney" was still to be found in competition with the organized bus companies which were striving to establish regular schedules and stable fares. Something of the disorganized condition in which bus transportation, at that time, was experiencing its "growing pains" may be gained from the following vivid description:

> At that time the terminals operated by the carriers generally consisted of small storerooms, usually without sanitary facilities. Very few of the carriers operated stations having waiting rooms. On-street, or curb, loading and unloading in front of such storerooms or near the entrances to prominent hotels or department stores was the prevailing practice. When one carrier opened a terminal the competing carriers usually opened terminals nearby. Thus all terminals in a city generally were concentrated in the same area. "Sidewalk man" employed by competing carriers endeavored to seize every prospective passenger who came along. Taxicabs brought prospective passengers to the terminal of the carrier which paid them the largest commission. To a large extent the service was not dependable or satisfactory to the public. Frequently schedules were not operated unless or until a pay load was available. Automobile travel agencies were operated in many cities, some by unscrupulous persons. By extensive advertising they attracted large numbers of patrons whom they placed on the vehicles of carriers which allowed them the greatest commission. It was common practice for them to turn their patrons over to irresponsible carriers who failed to provide the service for which tickets had been sold. These conditions continued until the early 1930's. The unrestricted

> exploitation of the inherent advantages of motor carrier service during this period resulted in uneconomical development of such service in some sections of the country and, no doubt, was harmful to the sound and healthy growth of the industry.[3]

Although the states early sought to place bus companies under some degree of regulation, specifying especially those safety rules that should be upheld, the types of busses to be used, and speed limits, it was not until the National Industrial Recovery Act was enacted in 1933 that any effort was made to establish regulation at the national level. This act prescribed a code of fair competition in the bus industry, setting forth requirements for continuous and dependable service, regulations for the certification of both new and old carriers, rules for the establishment of through routes and regular schedules, and principles for the establishment of fair rates.[4] Since these initial efforts, regulation has been broadened at both the state and national levels until bus travel is now almost as thoroughly regulated as is rail traffic.[5]

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[3]Interstate Commerce Commission, "Investigation . . .," p. 6.

[4]Ibid., pp. 7-14.

[5]Ibid., p. 137.

Before 1920 commercial highway transportation by means of motor vehicles was not of sufficient importance to require regulation to any great extent. The movement for regulation, therefore, was a development of the 1920's and the 1930's, only seven of the states having enacted any type of regulatory measures before the first World War. Pennsylvania passed the first law in 1914. Twelve states followed suit between 1919 and 1922, and twenty-five others between 1923 and 1927. Since 1930 most states have rewritten their early statutes because of imperfections in them, the tremendous growth of the commercial motor freight and passenger industry, and because of the increasing need for legal distinctions between common and contract carriers. The new laws are broader in scope, more drastic, and more nearly uniform. The tendency has been to conform to the main principles incorporated in the model law formulated and advocated in 1932 by the National Association of Railroad and Utilities Commissioners, although many differences in state regulations still exist.[6]

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[6]Bigham, op. cit., p. 137.

In the earlier years of its history the motor carrier was wholly unregulated. The original Inter-State Commerce Act of 1887 had no provisions for the regulation of that type of transportation, for motor traffic on highways was unknown at that time. Before March 2, 1926, state regulatory bodies had assumed some control over both passenger and freight traffic on the highways of the respective states, and some state railroad or public-utility commissions had gone so far as to require permits or franchises for busses and/or trucks engaged in interstate commerce. On the particular date mentioned above, the United States Supreme Court decided the cases of Buck vs. Kukendall and Bush Co. vs. Maloy, in which the opinion was formulated that the various states could not restrict the operation of either motor busses or trucks engaged in interstate commerce except in connection with highway conservation and the enforcement of state safety regulations.[7]

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[7]Starr, op. cit., p. 177.

Motor-vehicle regulation, like railroad regulation, was first attempted locally. But whereas initial efforts in the case of railroads were directed toward the lowering of rates and the prevention of discrimination, the purposes of motor-vehicle regulation were to determine the types of motor vehicles which might be used and the conditions of their operation, in order to protect the public and to conserve roads.

> Hence a multiplicity of state and local rules which specified the speed, weight, and size of motor cars, the kinds of brakes, the number, color, and position of lights, gongs, and whistles, the location of gasoline tanks, the strength of chassis frames, and the use of signals and the relative priority of vehicles at intersections. Later federal regulation was to deal with these same subjects.[8]

Truck operators were almost unanimously proclaimed "Public Menace No. 1" in peacetime America because of their invasion of public highways with enormous boxcars carrying weighty loads of freight. The reaction of millions of owners of private passenger automobiles immediately made itself felt in every state legislature. Even Harold Ickes, Secretary of the Interior, once said that he would

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[8]Daggett, op. cit., p. 785.

like to have at his command an armored tank in which he could bump big trucks from the highways![9]

Although the Interstate Commerce Commission had no jurisdiction over highway traffic, it conducted two early surveys of motor-bus and motor-truck activities. The first, in 1926, studied motor transportation in its relationships with common carriers subject to the control of the Commission under the terms of the Interstate Commerce Act. Results of the study, entitled Motor Bus and Motor Truck Operation, did not produce Congressional action, but the report did constitute the first step toward ultimate federal regulation of motor carriers engaged in interstate commerce. On the whole, the report was favorable to highway transportation, pointing out that truck and bus services had brought transportation facilities to some ten per cent of the nation's population who had no access to railroads, thus enabling them to contribute to national production and to share in the earnings, as well as to secure the benefits of rising industrial production,

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[9]Bellaire, op. cit., p. 22.

higher wage levels, and higher standards of living for those thus being benefited.

The second survey by the Interstate Commerce Commission was conducted in 1930-1931 for the purpose of collecting needed information about the volume and nature of commercial motor transportation and its relation to interstate commerce, its relationship to rail transportation, the existence of possibilities for co-ordination with railroads, and any apparent necessities for the regulation of interstate commerce by motor vehicles, especially trucks.

This investigation disclosed that motor transportation, within certain distances, was superior to rail traffic, primarily because of its flexibility. A high degree of competition was found to exist between motor and rail services, and it was being conducted largely on an inequitable basis because of the lack of motor-carrier regulation. To some extent, the unsatisfactory financial condition of the railroads was due to the unrestrained competition of rival transportation agencies. It was the opinion

of the Commission that superfluous transportation facilities existed, and that the unrestrained competition of unregulated facilities was not in keeping with the desired co-ordination of the various elements making up the total transportation system of the country. It was therefore recommended that Congress, in the public interest, enact such legislation as was necessary to bring the motor-carrier industry under the proper regulation of the Commission in all matters having to do with interstate commerce.[10] It was to be five years before Congressional action would be taken, although several efforts were to be made before final enactment of national regulation was attained, as we shall see later.

The most extensive motor-vehicle legislation rests in the laws of the several states and in ordinances enacted by city and county governments. Because of the constitutional separation of powers of the federal and state governments, as well as for practical reasons, it is generally recognized that state laws rather than federal enactments

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[10]Starr, op. cit., p. 179.

should be the basis for motor-vehicle legislation. Laws, to be effective, must be enforced, and the federal government is not equipped with administrative, enforcement, or judicial agencies appropriate to control traffic in all parts of the United States.[11]

The state's power to regulate motor carriers, or any of the public utilities, comes from its general police power. Local or municipal authorities, in turn, base their power to regulate upon police functions granted them by the state in charters or by general legislation. These powers are exercised through special ordinances or franchises which may apply directly to the motor-carrier company individually or, as is more often the case, they may confer administrative powers upon a local commission or board which, in turn, exercises supervisory authority.[12]

Desirable outcomes of state regulation of motor transportation, as conceived from the beginning, may be stated briefly as follows:

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[11] J. Allen Davis, "Motor Vehicle Legislation," Highways in Our National Life, edited by Jean Labatut and Wheaton J. Lane, pp. 432-433.

[12] Edwards, op. cit., p. 304.

1. The promotion of the safety and convenience of the public in the use of the streets and highways.

2. The protection of the highways against improper or destructive use.

3. The prevention of the use of the highways by a larger number of carriers for hire than is needed to serve the public adequately and efficiently.

4. The prevention of excessive and destructive competition of motor common carriers with each other, with other common carriers, and with contract carriers; and, likewise, the prevention of the destructive competition of motor contract carriers with each other and with common carriers by highways, railroads and waterways.

5. The fostering of the fair distribution of traffic among the several available transportation agencies, in order thereby (a) to prevent the unnecessary burdening of the highways to the consequent disadvantage of the public, and (b) to enable carriers by railroads and waterways to develop the services upon which the public is dependent.

6. To establish, by applying like principles of regulation to all classes of carriers, conditions that will make possible the desirable co-ordination of all transportation agencies and facilities.[13]

It is interesting to note that Texas, by its Motor Carrier Law of 1931, took the lead in providing that the state's entire transportation system should be considered in the regulation of motor carriers. This law required operators to obtain permits before beginning operations within the state. When this law was contested in the case of Stephenson vs. Binford, the United States Supreme Court upheld the right of Texas or of any other state to prevent the

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[13]Emory R. Johnson, Government Regulation of Transportation, pp. 539-540.

overburdening of its highways by the undue diversion of traffic from railroads. This early act limited the length and width of motor vehicles and set 7,000 pounds as the maximum load that might be carried over the highways, with certain exceptions. These exceptions were for the purpose of encouraging truck transportation of farm and ranch products to railroads for shipment, and made it possible to employ, for this purpose, vehicles fifty-five feet in length instead of the ordinary thirty-five feet, and the weight of the load might be as much as 14,000 pounds, instead of the usual 7,000 pounds.[14]

Many complicated developments have occurred in the history of regulation of motor traffic, but they can be summarized briefly in the following manner:

> Regulation of utilities has been effected through any one of three agencies. The first was that of the courts, the individual having the right to bring a lawsuit against a common carrier for failure of the latter to observe his "common-law" obligations to provide reasonable service at reasonable rates. Such regulation, however, was slow, costly, inflexible, haphazard, and only attempted to right a wrong after it had happened. Corrective policies to meet the changing needs of the future could not be applied.

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[14] Ibid., pp. 517-518, 533.

> A second agency of regulation was that of the legislative bodies regulating the utilities directly through special legislation, franchises and charters. While a vast improvement over the judicial method, it still contained many weaknesses. The legislative bodies lack the necessary technical knowledge. The issuance of the charters or franchises or the passage of statutes is slow and, what is more important, the provisions they contain soon become antiquated with changing conditions. Furthermore, such measures fail to eliminate discrimination.
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> The third and last agency of regulation is that of the commission to which the legislative body delegates the administrative and enforcement functions. This form of regulation has found overwhelming favor --- every state except Delaware now [1933] having a commission. Furthermore, every other state except Kentucky has given to its commission jurisdiction over motor carriers, this one state having placed its motor lines under the authority of a Commissioner of Motor Transportation. The advantages of the commission form of regulation are manifold. It provides direct contact with the consumer, on the one hand, and the carrier, on the other, permitting prompt action on complaints of injustice or discrimination. It is composed to a large degree of a relatively permanent body of men who, because of the long tenure of office, become trained in the problems of regulation. It usually has at its command an organization of experts trained in the various fields of engineering, rate making, service standards and finance. It can adopt a consistent policy over a long period of time and applied alike to all utilities. It is as relatively free from the influence of politics, pressure from the utilities, the popular prejudices of the moment and narrow sectional grievances as any regulatory system can be. It is capable of direct and decisive action. For these various reasons the commission form of regulation has generally come to win the widespread confidence of the public.[15]

From the standpoint of administration of motor-carrier regulation, two broad policies have been

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[15]Edwards, op. cit., pp. 314-315.

established in this country. The first is that of police regulation, now practiced by all states, which began before the first World War, mainly at the suggestion of officials charged with the administration of public highways. Such regulation, under the supervision and authority of the state regulatory commission, deals with such factors as weights and dimensions of carrying units, speed, safety appliances, and lights; and it includes private passenger cars as well as commercial vehicles, although under different standards. Commercial motor operators are also required to carry insurance for protection against injuries to persons and damage to property and cargoes. Police regulations are obviously in the public interest, as they safeguard travel and protect the highways. Some states, however, have enacted restrictions which appear to be more stringent than required for safety and protection. In some instances, railroads apparently are favored by the regulatory measures enacted against highway motor traffic.

The second type of regulation is that of business regulation, which has resulted mainly from the demands of transportation industries, especially railroads. Under rigid restrictions themselves, the railways have insisted that their competitors should receive like treatment. Railroads, however, have been joined in their demands, strange to say, by organized bus and truck operators, many of whom thereby have sought relief from severe competition. The public has always appeared rather apathetic in regard to the business elements in regulation, but it often becomes vitally concerned in matters of police regulation.[16]

In the United States the main authority for the co-ordination of rail and highway operations and for all regulation of transportation is the state and/or federal regulatory commission, as already implied. These commissions exert their greatest influence through their power to grant or to refuse permits for commercial motor-vehicle operation. These permits are known as "certificates of convenience

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[16]Bigham, op. cit., pp. 135-137.

and necessity." State commissions are more important bodies in the regulation of road traffic than in that of air, water, or rail transportation, because such a large proportion of motor traffic is local or intrastate in nature. The power of these bodies was enhanced by the Motor Carrier Act of 1935, exempting carriers holding state permits for intrastate operations from the requirement of having to obtain a federal certificate in order to engage in interstate commerce, provided the carriage of such commerce is limited to the bounds of the state which has issued license. State authority was further strengthened by the Transportation Act of 1940, which exempted, under certain conditions, motor carriers operating within a single state from federal control.[17]

The regulation of motor carriers is only a small part of the duties of the state regulatory commissions, which vary in personnel from three to seven members, with two thirds of them having three members each. Authority of these commissions varies,

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[17]Daggett, op. cit., pp. 633, 639.

of course, with the several states, but it usually includes the regulation of railroads; interurban lines; street railways; gas, light, heat, and power companies; pipe lines; steamship operations; and telephone and telegraph companies. Regulation in these various fields may deal with any one or more of the following: service, rates, financial organization, security issues, safety of operations, accounts, and other areas into which these fields may be subdivided.[18]

During the years of the depression many state legislatures tried to protect local manufacturers, businesses, and farmers against out-of-state competition. Although the Constitution of the United States prohibits interference with interstate trade, the legislatures evaded this by exercising their right to "regulate" the trucking industry "in the public interest." In some states practically all trucks were run off the highways except those home-owned or operated within state boundaries. As a result,

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[18]Edwards, op. cit., pp. 315-316.

interstate trade was cut drastically. At the same time, various taxpayers' groups, private-car owners, and railroad interests combined to fight for further regulation and taxation of commercial motor traffic on the grounds that trucks were not paying their fair share of highway costs and maintenance.[19] This struggle, begun some twenty years ago, is still in evidence.

Speed limits for commercial vehicles have always varied with the type, size, and weight of the vehicles being considered. By 1938 the speed of passenger busses was fixed at forty-five miles per hour in ten states, at forty miles per hour in three states, and at thirty-five miles per hour in three states, whereas Nevada and Florida allowed only thirty miles an hour. In nine states the speed of all trucks was limited to thirty-five miles an hour on open highways, whereas in three states the speed limits had been established at thirty, forty, and forty-five miles per hour, respectively. A group of twenty-one states had separate speed limits for trucks of various gross weights and net loads.

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[19]Bellaire, op. cit., p. 22.

These ranged from ten to forty-five miles an hour, and provided for a gradual decrease in speed with increase in load. Similar variations were in the statutes of various states in regard to gross weight and size of trucks. For example, the maximum gross weight allowed per axle was 10,000 pounds in South Carolina, 15,000 in Vermont, 16,000 in Illinois, 18,000 in Ohio, 22,400 in New York, and 24,640 in the District of Columbia.

Most states had passed regulations governing the width of motor vehicles, and many controlled the height and length as well. Limitations of dimensions, especially of height and width, are obviously necessary, but there has always been considerable controversy as to proper limits. In 1938, for instance, Florida required that the maximum width of a truck should not exceed eighty-four inches, whereas most other states permitted ninety-six inches, and Connecticut and Rhode Island allowed 102 inches. Maryland and Rhode Island had no limitations as to the length of vehicles, but Kentucky permitted lengths of 26.5 feet; Tennessee, twenty-

seven feet; Massachusetts, Mississippi, and New Jersey, twenty-eight feet; Georgia and South Dakota, thirty feet; thirty-one states, either thirty-three or thirty-five feet; Connecticut, Maine, Minnesota, and North Dakota, forty feet; Oklahoma and Utah, forty-five feet; Vermont, fifty feet; and Nevada, sixty feet. Maximum lengths permitted for truck and full trailer combined, where there were any limitations, ranged from thirty-five feet in Tennessee to eighty-five feet in Arizona, Georgia, and Rhode Island.[20]

By 1945, maximum gross weights for commercial trucks and their loads ranged from 18,000 pounds in Kentucky to 101,000 pounds in Nevada. Long-haul cargoes, of course, were limited automatically to the lowest maximum weight of any state through which they must pass.[21] Thus the wide divergence of maximum loads, as well as various other state regulations which differ widely from state to state, has always presented a serious obstacle to the

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[20]Daggett, op. cit., pp. 785-786.

[21]Bellaire, op. cit., p. 23.

movement of interstate traffic by means of highway freight trucks.

> Enacted independently by all 48 states before Pearl Harbor, these road-block laws created one of the wildest legislative bedlams in the history of the republic. Not all these laws were bad laws or unnecessary laws in theory. But there was so little attempt to co-ordinate them among the states that truckers soon found themselves in the position that would confront the railroads if each state dictated the gauge of railway track which would be legal within its borders.
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> The railroads might be forced to build 48 sizes of locomotives, freight cars and passenger cars, and all traffic would have to be transferred at each state border. This almost did become the plight of the truckers, before the war, with the result that hundreds went out of business, and what should have been our cheapest means of freight transport became one of our most expensive.
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> In the early months of the war, the road-block laws interfered so seriously with the delivery of weapons and supplies to our hard-pressed troops overseas that President Roosevelt finally ordered their suspension for the duration.[22]

By 1945, eleven far-western states had agreed on remarkably advanced standards permitting the operation of trucks and trailers up to sixty feet in length and of 68,000 pounds gross weight. The laws in all of these states were not identical, but for the first time truck-trailer combinations of over fifty feet in length and 46,000 pounds in gross weight could operate legally in all eleven states---Washington,

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[22] Ibid.

California, New Mexico, Arizona, Idaho, Wyoming, Utah, Montana, Nevada, Colorado, and Oregon.[23]

In spite of this forward step in the correlation of regulations among the eleven states mentioned, however, there still prevailed, over the nation at large, widespread confusion and lack of conformity in state regulations relating to truck tires, braking equipment, the number, location, and color of identification lights, the number and location of rear-view mirrors, the thickness of windshield glass, the contents of tool and emergency kits, and dozens of other similar details. Laws governing identification lights, for example, ran the gamut from white, yellow, and amber, through green, purple, and blue. A truck traveling from New York to Iowa, for instance, would be required to carry three complete sets of lights and reflectors in order to comply with the conflicting color laws of the intervening states.

One of the serious consequences of all of this lack of correlation in regulatory measures is that it

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[23] Ibid.

has prevented truck manufacturers from designing a single standard model of truck or trailer which could operate legally in any state. Consider length limitations alone: in 1945, various states specified thirty, thirty-five, forty, forty-two, fifty, fifty-five, sixty, and sixty-five feet as maximum lengths! Such differences required the manufacture of at least eight distinct models, each far more expensive than it would have been if truck manufacturers could standardize on two or three nationally accepted sizes.[24] However, because of the fact that traffic conditions vary considerably from state to state, and because highways vary widely in type of construction, it perhaps is not practical at present to insist upon complete uniformity in the motor traffic and safety regulations among all states.[25] Needless to say, though, a much higher degree of uniformity than now exists would be highly beneficial in many regards.

It was to be expected that, in time, regulation of transportation would be placed on a federal basis,

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[24] Ibid.

[25] Johnson, Government Regulation of Transportation, p. 519.

not for the purpose of supersecind state regulation but to complement it. In the face of the many differences in regulatory measures on the state level, there was a crying need for some degree of standardization and some effort toward uniformity, which could be attained only by federal enactment.

> The Federal regulation of interstate motor carriers was important not only because it brought under government control a field of business in which public regulation was needed, and can be helpful both to those who serve and to those who are served; it was also of importance because it provided the complement necessary for the satisfactory regulation of motor carriers by the states. Highway transportation, like that upon the railroads, is both intrastate and interstate; and there are not only intrastate and interstate motor carriers, but there are many carriers upon the highways whose services are both intrastate and interstate. The entire field of regulation can be occupied neither by the states nor by the Federal Government; both need to exercise authority, and when they do, they can not only make regulation comprehensive, but they can, by co-operation with each other, accomplish the task of regulation more effectively and with more beneficial results.[26]

In the early 1930's sentiment for national regulation of motor-carrier transportation of both passengers and freight became strong in the United States. In September, 1932, President Franklin D. Roosevelt, in an address delivered in Salt Lake City, stated:

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[26] Ibid., p. 544.

> We built — properly — hundreds of thousands of miles of first-rate highways directly paralleling the railway tracks. These were paid for out of taxes or bond issues. Today many hundred buses and trucks engaged in interstate commerce use these rights-of-way for which they have made no investment.
>
> We do not desire to put motor vehicle transportation out of its legitimate field of business, for it is a necessary and important part of our transportation systems; but motor transportation should be placed under the same Federal supervision as railroad transportation.[27]

During the first years of the rapid growth of bus and truck transportation, the railroads had organized in an effort to combat the new threat to their supremacy in the transportation field. At first attempting to suppress all commercial highway transportation, the railroad interests were disconcerted to witness the fact that motor carriers continued to increase in number and in services rendered in spite of all attempts to curb their growth. Seeing that the motor-truck and motor-bus industries could not be put down, the railroads began to change their tactics. Now they insisted that these new carriers should be regulated as the railroads were regulated. Not even the rail interests claimed that abuses were

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[27]Duncan, op. cit., p. 275.

widespread in the motor transportation industries, but they sponsored the idea of motor regulation from the standpoint of unfair advantages possessed by the motor-vehicle carriers when they were allowed to operate without regulation.[28] The public was, at this time, rather indifferent to the whole question of regulation for motor transportation.

While railroads were leading the fight for stringent regulation of motor carriers, the motor-transportation interests were organizing themselves to fight all proposals for federal regulation. They based their arguments on the following grounds: (1) less than two per cent of all trucks in 1932 engaged in interstate commerce, so it appeared to be absurd to set up an intricate system of federal control for such a small proportion of vehicles; (2) neither consumers nor shippers were demanding regulation; (3) the demands for regulation were coming primarily from the railroads in an effort to strangle the trucking industry; (4) regulation would

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[28]Arne C. Wiprud, Justice in Transportation, p. 59.

increase shipping costs to the public; (5) a federal regulatory experiment was premature at that time, since state experiments with such laws had not yet been proved constitutional, practical, capable of enforcement, or of any protection to the trucker or advantage to the shipper.[29]

As early as 1925 a bill had been introduced on the floor of the United States Senate proposing federal regulation for both freight and passenger interstate carriers, but the measure was not pushed and no action was taken. In the following two Congresses, bills were introduced in the House to regulate interstate transportation of persons, but these never came to a vote. In 1933, Sam Rayburn of Texas introduced a bill designed to regulate both passenger and freight carriers. This measure probably would have been enacted eventually, as it received much favorable consideration, had not the National Industrial Recovery Act come into being, providing its detailed codes for the operation of the

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[29]"Truck Operators Call Federal Regulation Premature, Hostile," Business Week, February 3, 1932, p. 9.

trucking business and also presenting conditions to govern the operation of busses. At first, the trucking interests opposed the Rayburn bill with all their might, but they later altered their position and became its supporters, perhaps after they had seen the beneficial effects of the phases of regulation covered by the National Industrial Recovery Act. Altered somewhat by the Co-ordinator of Transportation, the Rayburn bill eventually became the Motor Carrier Act, enacted August 9, 1935. It was very fortunate that the act was adopted with the general approval and support of those who were to be regulated by it, instead of being forced upon them over their opposition, because the co-operation of those regulated was to make easier the successful accomplishment of the difficult task of administering the law effectively.[30]

Thus, after a decade of fighting, not always by fair means, between railroad and highway interests over the regulation of busses and trucks, Congress

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[30]Johnson, Government Regulation of Transportation, pp. 549, 551.

passed the Motor Carrier Act, to become effective in regard to interstate for-hire carriers on October 1, 1935. To prevent "mushroom" operations from springing up before that date, the law provided that companies in operation on June 1 would be granted certificates of public convenience and necessity upon compliance with certain regulatory features of the law. All other companies desiring to establish interstate transportation services would have to prove that a real need for their proposed services existed.[31]

The Motor Carrier Act, which was constituted as Part II of the Interstate Commerce Act of 1887, gave the Interstate Commerce Commission jurisdiction over motor carriers engaged in the interstate transportation of both goods and persons. Like the rail lines under the earlier law, motor lines were required to obtain certificates of public convenience and necessity for their operation, those already existing being allowed to continue their

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[31] "Highway Regulation at Last," Business Week, August 10, 1935, p. 11.

services. The law contained prohibitions against discriminations, undue preferences and prejudices, and unreasonable rates. Requirements were incorporated calling for the publishing, filing, and posting of rates and schedules by all carriers. All was very similar to the earlier regulations imposed upon railroads.[32]

As a result of the efforts of the National Conference an State and Highway Safety, offering "patterns" for state legislation, standardization in state regulatory measures was making some progress by 1939. In all of the states, a maximum over-all width for trucks of eight feet was enforced. The height of trucks was held down to 12.5 feet in about half of the states, whereas the maximum height was either lower or higher in the other states. Length limits ranged from 26.5 feet for single vehicles to eighty-five feet for combinations; but thirty-five feet for single units, including tractors and semi-trailers, and forty-five feet for combinations, were typical.

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[32]Starr, op. cit., pp. 179-180.

Since its organization in 1924, the National Conference had cut its recommendation for maximum overall length of trucks from eighty-five to forty-five feet.[33] In 1939, Secretary Ickes' proposal that large trucks be kept off the highways on Sundays and holidays, except for absolutely essential transportation, was considered favorably by several states. For example, South Dakota and Nebraska restricted the operation of oil trucks on Sundays and holidays, and Minnesota and Wisconsin curtailed all non-essential truck traffic during week-end peak periods of highway use.[34]

Even after the passage of the Motor Carrier Act of 1935, it was recognized that competitive conditions were inequitable between highway and rail carriers, and that they will remain so until the ideals incorporated into the national transportation policy are fully carried out. That policy was further emphasized by Congress in the Transportation Act of 1940, which was, in reality, a revision of the Motor Carrier Act of 1935. The 1940 enactment provided

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[33]"How Big Are Trucks?" Business Week, December 2, 1939, p. 26.

[34]Ibid.

that there should be fair and impartial regulation of all modes of transportation, administered in such a way as to (1) recognize and preserve the inherent advantages of each; (2) foster sound economic conditions in the transportation industry and among the several carriers; and (3) eliminate unjust discrimination, undue preferences or advantages, and unfair or destructive competitive practices. All of these procedures were designed for the purpose of developing, co-ordinating, and preserving a national transportation system—by water, highway, rail, and air—that will adequately meet the needs of commerce and of national defense.[35]

In 1940, the American Association of State Highway Officials recommended the following maximum size and weight limits for commercial trucks, with provisions for granting special permits for occasional movements requiring vehicles of sizes and/or weights exceeding the limits recommended. The over-all width of motor vehicles should be not over eight feet. Over-all height should be not more than 12.5

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[35]Parmelee and Feldman, op. cit., p. 235.

feet. Over-all length of tractors and trailers or semi-trailers should be forty-five feet or less. Over-all length of single motor-vehicle units should be thirty-five feet. A maximum axle weight of not more than 16,000 pounds per axle on high-pressure pneumatic tires should be maintained. Maximum wheel loads of 8,000 pounds per wheel on high-pressure pneumatic tires, and 9,000 pounds per wheel on low-pressure pneumatics should be enforced.[36] In 1941, length limits ranged from 26.5 feet in Kentucky for single-unit trucks to sixty-five feet in Arizona for tractor-semi-trailers or other combinations. Gross weight limits for two-axle trucks varied from 18,000 pounds in Kentucky to 44,800 pounds in Maryland. Maximum weights for tractor-semi-trailer units ranged from 18,000 pounds in Kentucky to 60,000 pounds in New Jersey. Weight limits per wheel were from 8,000 pounds to 17,200 pounds. Maximum pay loads allowed were lowest in Kentucky (10,700 pounds), and ranged up

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[36]Johnson, Huebner, and Wilson, op. cit., pp. 614-615.

to 35,500 pounds in other states.[37] The formulation of a national policy with respect to commercial motor transportation has resulted in greater uniformity in regulatory measures enacted by the states, although standardization is still far from attained. However, since the Congressional enactment of the Motor Carrier Act in 1935, "the Interstate Commerce Commission has exerted an authority over motor vehicle operation in interstate and foreign commerce parallel to that which the states still retain over more local transport."[38]

Apparently, the answer to the confusion and widespread differences which still exist in state efforts to regulate motor transportation lies in the setting up of unified federal control. This idea is opposed by state legislatures on the grounds of state rights. Also, there is good reason to question the possibility of standardizing trucking laws for all states as long as highways differ greatly in width, strength, sharpness of curves, strength of

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[37]Bigham, op. cit., note, pp. 135-136.

[38]Daggett, op. cit., p. 637.

bridges, and so on. Uniformity of regulation is highly desirable from many standpoints; yet from others it is hardly practical under existing conditions.

The many difficulties in the problem are, of course, recognized in Washington, but an important step was taken in 1944 in the adoption by Congress of the gigantic $2,500,000,000 post-war highways-appropriations bill. This law provided that federal funds would go only to those states whose post-war highway plans conformed to certain high federal specifications. Most of the states depended heavily upon this federal aid for the development of their highway systems and took steps to comply with the regulations in order to receive grants. Whether Congress ever takes over the actual control of the highways or not, it at least has guaranteed a nation-wide system of new highways over which trucks and busses may operate efficiently with a minimum of annoyance and little danger to other motorists.[39]

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[39]Bellaire, op. cit., p. 23.

Demands for rapid and uninterrupted transportation of war materials and personnel during the years of the second World War and did much to liberalize certain state regulations with regard to truck operations which had previously crippled the movement of interstate commerce. Many of the state "road-block" regulations were set aside and a movement for uniformity of state regulations was accelerated.

> To the extent that regulation has promoted safety in all fields of transportation, the public has been the gainer. But the price which the public has paid through reduced competition and high rates has been enormous. A fair appraisal of the results of present regulatory acts impels the conclusion that they contain controls and standards which operate primarily in the interest of the private companies rendering public transportation services. Certain it is that these private interests have been able to achieve, either through specific provisions in regulatory acts or through the interpretations thereof, the goal which they seek. This goal is (1) the elimination of effective competition and (2) a protected rate structure which aims at a return upon capitalization without regard to the actual or reasonable costs of rendering transportation services.[40]

In addition to state and federal attempts at regulation of commercial motor transportation, much of the total regulatory program is still left in the hands of local authorities. Traffic of trucks and busses,

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[40]Wiprud, op. cit., p. 68.

as well as of private cars, is controlled by means of lights and signs, or by police; speed restrictions are enacted; parking rules are enforced; and regulations for the use of streets are made known, such as one-way traffic, left-hand turns, governing of boulevard traffic, and the observance of quiet zones and restricted speed zones. At the same time, there may be restrictions governing the size and weight of vehicles using certain city streets or bridges; and regulations concerning maximum loads may be enforced. Bus and truck traffic is often routed over special streets or highways on which ordinary passenger traffic may be at a minimum.

Courts have held that such local regulations are constitutionally valid if they are not in conflict with federal or state regulations and if they represent a reasonable exercise of local police power. As might be expected, much diversity exists in local regulations throughout the nation, as is still true also on the state level; but progress is being made toward greater uniformity through the efforts of various associations of municipal authorities,

insurance underwriters, and motor transportation companies.[41]

Shortly after the first World War most of the states began worrying about what heavy trucks were doing to their roads. Trucks then were still midgets when compared to the huge vehicles on the roads today, but they had heavy solid tires which obviously were breaking up the rather weak roads of that period. Almost simultaneously, solid tires were quickly banished from the highways and the nation's greatest era of road building began, lasting into the early 1930's. New roads were stronger, and the states thought that the problem was solved.

The present situation developed gradually and with little warning. In the past few years the number, size, and weight of trucks have increased fantastically. The number of large commercial trucks practically doubled in a decade until in 1950 there were approximately 8,500,000 such vehicles on American roads. A survey conducted in 1948 by the United States Bureau of Public Roads revealed

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[41] Johnson, Huebner, and Wilson, op. cit., p. 609.

that twenty-five per cent of the traffic on main highways, outside of city limits, consisted of trucks. A New Jersey official says that one out of every three vehicles on the main highways of his state is a truck. But it is not the number of such trucks that does most to frighten the officials, who accept the growing number of trucks as a vital part of our modern economy. It is the increasing weight of the trucks that gives them concern. There are several ways of figuring truck weights. The one favored by engineers is that of calculating the load on each axle. On this basis, the percentage of trucks hammering the roads with eleven tons or more of weight per axle has increased tenfold in the past few years. A more familiar means of figuring weight is by the over-all tonnage of the vehicle plus its cargo. The ratio of trucks weighing twenty-five tons or more has gone up twelve times in the past six or eight years. Most of the states now allow over-all weights of much more than twenty-five tons, and in at least one state the truckers are trying to get the legal limit raised to seventy tons.

Insisting that American roads were not built to take such loads, engineers and officials point out that even most of our main highways were built when it was thought that in the distant future truck loads might reach as much as nine tons per axle. At the same time, much of the highway network is between twenty and thirty years old, less able than more modern roads to withstand the battering from overloads.[42]

If it were generally believed that trucking companies and bus lines were paying for the construction and maintenance of highways in proportion to the degree in which they help destroy or damage them, there probably would be less resentment against the use of heavy trucks on highways. It is generally substantiated that operators of trucks and busses are not paying their full share of the cost of building and maintaining highways adequate for their use. Those who have studied the situation appear to be agreed that the state or the nation should finance the construction and maintenance of

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[42]David G. Wittels, "Are Trucks Destroying Our Highways?" Saturday Evening Post, CCXXIII (September 16, 1950), 79, 81.

roads for the use of private individuals and small commercial vehicles; such is recognized as a public service to be performed by the government. But along with this idea arises the question of whether large and heavy commercial vehicles should be required to bear the additional cost of building highways suitable for their operation, over and above the standards of what would be required for private passenger automobiles.

This question has been one of the sources of contention between railroad and trucking interests from the beginning. Railroads were forced to build their own tracks over which to operate their trains, with the help of generous subsidies and grants, which they tend to have forgotten in the meantime. The truck operator, on the other hand, is free to run his heavy vehicle on the highways, built at public expense, with no cost to him except the minor license fees and various taxes which he must pay. In other words, he has no tangible investment in the highways over which he conducts his business,

and he is therefore using public property for personal gain.[43]

A graphic picture is presented of the increased cost of highway construction because of the heavy users, who pay relatively little of the additional investment required because of them:

> Texas could build highways for you with pavements costing about $20,000 per mile which would be adequate for 99 out of every 100 motor vehicles, instead of having to pay from $60,000 to $70,000 per mile for pavements because of the one heavy truck in every 100 vehicles registered.[44]

What is true in Texas is, of course, true on a national basis as well. In this same connection, Roy M. Green, Dean of the School of Engineering of the University of Nebraska, has calculated as follows:

> The average heavy truck . . . pays only about 3.4 times more per mile (in gas tax and registration fees) as each light vehicle, while its share of construction cost is nearly 26 times as much per vehicle-mile.[45]

Thus it is seen that the truck operators conduct their business over highways provided for them, in the main, by the public at large, with comparatively little cost to them.

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[43]Parmelee and Feldman, op. cit., p. 234.

[44]Connolly, op. cit., unpaged.

[45]Ibid.

Today, more than eight and a half million trucks, carrying heavy freight, rumble over the highways of the nation. They have properly been called "behemoths of the road."[46] In the decade between 1940 and 1950, long-distance trucking more than doubled, and today the trucking industry employs more people than do the railroads.[47]

As a result of the terrific increase in the number of trucks in operation and the number of heavy axle loads (18,000 pounds or more), the highways of the country, which have an average age of some eighteen years, are beginning to crumble and to show critical damage. In many states they are wearing out faster than they can be replaced with present funds available for highway construction.[48]

As an impartial representative of all who use the nation's highways, the American Automobile Association has issued the following statement concerning highway damage:

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[46]Wittels, op. cit., p. 20.

[47]Frederick G. Brownell, "The Rape of Our Roads," Reader's Digest, LVI (June, 1950), 136.

[48]John L. Beckley, "All the Railroads Want Is a Fair Deal," Reader's Digest, LVII (July, 1950), 122.

> Abuses of highways and highway use by elements of the trucking industry continue to cause heavy road damage, produce serious accidents, interfere greatly with other traffic movement, and irritate and terrify motorists. . . . Trucking abuses are so widespread, serious and costly to our highways that strong corrective measures are imperative.
>
> One type of abuse is the repeated pressure to get increased sizes and weights permitted by state legislation. . . . No offer is made to pay for the increased highway costs produced by such increases . . .[49]

Overloading is the most serious offense against the highways of which the truckers are guilty. In Texas, for instance, the legal limit for trucks and cargoes combined is 48,000 pounds gross weight, imposed by the legislature in order to prevent excessive damage to Texas highways; but arrests have been made for gross loads up to 111,800 pounds. The American Association of State Highway Officials has found that a limit of 18,000 pounds per axle is the maximum truck weight that can be carried without excessive damage to highways. But in Texas loads of 24,000 pounds or more per axle are more or less common. In this state a pitifully inadequate force of thirty-five men in the License and Weight Division of the State Highway Department are charged with the duty of patrolling the 40,000 miles of state

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[49]Connolly, op. cit., pages not numbered.

highways in an effort to arrest violators of trucking regulations. In 1949, when there were no more than twenty-five men in this division, 2,705 arrests were made for violating the 48,000-pound gross weight limit and 2,572 for violating the 18,000-pound axle load limit.[50] With such limited personnel the chances of arrest for weight violations are rather slender, and thus operators continue their practice of overloading in the hope that they will not be apprehended. If their loads get through safely to their destinations, their profits rise in proportion to their excessive loading.

The phenomenon of "pumping" is the most destructive effect to the highways of the use of excessively heavy vehicles upon them. Exactly what causes concrete highways to "pump" is a multi-million-dollar question to the taxpayers, for millions are spent annually to correct pumping. It is a problem of special interest, also, to two other groups: the engineers who build highways, and the owners of huge trucks which thunder over them.

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[50] Ibid.

These owners, incidentally, are constantly fighting load-limit legislation, claiming that pumping is the engineers' "headache" and that it will not occur if roads are properly constructed, no matter what loads are hauled over them. Engineers admit that it is possible to build roads that will not pump, but that such roads require the expenditure of tremendous sums of money. They insist that the same results may be otherwise attained, and far more economically, by the legal reduction of truck loads, since it is the over-heavy truck that is largely responsible for pumping.[51]

> Slab pumping starts with an accumulation of water under the pavement, in a plastic subgrade soil. As wheels move over the slab, the slab pushes down. The water spurts out wherever it can — through a joint or a crack, or along the edges of the pavement. At each squirt, the water carries out some soil particles with it. Pretty soon, cavities develop under the slab. Eventually, the unsupported slabs crack and break up into smaller sections. This makes new openings for the subgrade soil to pump through.
>
> Once pumping starts, there's only one way to stop it: Drill holes in the pavement and fill the voids beneath by forcing in either hot asphalt of the proper type or a soil-cement slurry. Most highway experts like the asphalt filler better. But it's a costly treatment; often it has to be repeated.[52]

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[51] "Who's to Blame for Damaged Roads?" Business Week, December 11, 1948, p. 60.

[52] Ibid., pp. 60, 62.

Each of the forty-eight states has enacted maximum load-limit laws in order to protect its highways from the destruction brought about by ponderous vehicles. However, many long-distance haulers persist in overloading their mammoth rigs in the hope that their cargoes can be delivered without apprehension. Recently several hundred drivers openly challenged highway regulations in Pennsylvania, parking their "boxcars" one after the other on the Pennsylvania Turnpike until the line stretched for miles. They asserted that they would not turn a wheel until either the legislature increased gross weight limits or else authorities stopped enforcing the law. This radical demonstration was broken up only when Pennsylvania's Governor Duff ordered state police to "haul or bull-doze" the offending vehicles off the highway.[53]

In the past fifty years, over $60,000,000,000 have been spent on the construction and maintenance of some 3,300,000 miles of roads and streets. At present costs, the sum of $35,000,000,000 will be

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[53]Brownell, op. cit., p. 138.

required to replace merely the 270,000 miles of interstate and other heavy-duty highways. In 1949, more than $3,000,000,000 was spent for road building and repairs, and indications were higher for 1950 and 1951. The United States Bureau of Public Roads estimates that at least $60,000,000,000 would be required to bring all roads and streets up to adequate standards. The Bureau also warns that, at the present rate of deterioration, by 1956 only fifty-six per cent of the high-type roads now in use will be in usable condition, despite all reconstruction programs now contemplated for the six-year period. In other words, the main highways are breaking up faster than they are being rebuilt or repaired.[54]

Although the case appears unfavorable for truckers, only extremists place sole blame for the destruction of highways upon the big trucks and their excessive loads. Admittedly, age, weather, and lack of new construction and proper maintenance during the war years produced much deterioration

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[54]Wittels, op. cit., p. 20.

in highways. Nevertheless, the giant trucks can be blamed for a large part of the highway wreckage that is occurring. "There is no doubt about it," asserts Thomas H. MacDonald, United States Commissioner of Public Roads. And the director of research for the Bureau of Public Roads, H. S. Fairbanks, says: "Overloaded vehicles are causing havoc on thousands of miles of roads throughout the country." Similarly, the American Automobile Association charges that "billions of dollars' worth of the nation's finest highways are being pounded to pieces by overweight and overloaded vehicles."[55]

A thirty-mile stretch of concrete highway in Missouri was in excellent condition until the main stream of Chicago-to-St. Louis traffic was temporarily routed over it. After up to 1,500 trucks a day had pounded it for six months, it was so broken up that a makeshift patching job cost over $150,000. A county road in northeastern Maryland was rated "in good shape" when floods cut off a main highway and forced it to carry a heavy traffic of huge trucks for

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[55] Ibid., pp. 20-21.

some twenty-four hours. At the end of those twenty-four hours this road was "all but demolished." In another section of Maryland long-distance trucks were detoured over a state road while their usual route was being repaired. Engineers had calculated that the state road should last, under normal usage, for another decade, but after two months of heavy truck traffic it was "broken to bits." A certain highway in Pennsylvania carries heavy truck traffic for part of its length. State highway officials claim that the stretch of road used by the trucks costs fourteen times as much per mile to maintain as the section used almost solely by passenger cars and light-weight local trucks.[56] Spokesmen for the trucking industry laugh at the idea that overloads produce pavement damage and insist instead that weather is to blame. But a ten-mile stretch of United States Highway 66, the main route between St. Louis and Chicago, is typical proof of the opposite. Pounded day and night by heavily loaded trucks and trailers, the two outer lanes of this

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[56] Ibid., p. 21.

four-lane highway have been smashed to pieces, whereas the two inner lanes, used by lighter-weight passenger cars, are still in good condition.[57] The above are only a few examples of actual proof that heavy-duty trucks represent high destructiveness to highways. Many similar instances of proof could be cited.

Among the sixty-three firms operating in or through the state of Maryland with fleets ranging from one to 1,200 trucks each, eight of the biggest are habitual violators of the state's load-limit laws. An executive of one of these firms helped to formulate the industry's own condemnation of overloading, but his company's trucks were nabbed more than a hundred times when Maryland had only a few inspectors and estimated that less than ten per cent of tee violators were being caught. Michigan, also with limited forces, caught one firm 177 times for violating the legal weight limits. During a statewide survey in Illinois, twenty-seven per cent of all trucks stopped were overweight. Spot checks in

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[57]Brownell, op. cit., p. 138.

Indiana and Oklahoma indicated that about thirty-five per cent of the trucks operating in those states were guilty of overloading; and a test in Nebraska disclosed that about half of the biggest trucks were overloaded.[58]

According to one federal enforcement official, at least one long-distance truck out of every four breaks the weight laws of the state through which it is passing. A truck flagged down recently by Pennsylvania police was loaded to three times the legal limit. In another instance, outside Pittsburgh, patrolmen picked up a truck bound for New Jersey, with a cargo of sheet steel which weighed in at thirty-five tons above the legal limit. Released on bond, the driver continued on his way, doing irreparable damage to much of the highway he traversed.

Many of the nation's first-class highways are built of concrete slabs nine inches thick, which will normally stand up under an indefinite number of loads as heavy as nine tons per axle, which is the maximum load permitted in two thirds of the

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[58]Witteis, op. cit., p. 21.

states. Colorado's highway engineers have determined, through actual tests, that pavements exposed repeatedly to axle loads in excess of nine tons crack up ten times as fast as those not subject to such strains. Engineers in other states have estimated that it costs from fourteen to seventeen times as much per mile to maintain a road habitually used by heavy trucks and trailers as one that commonly bears only lighter vehicles. Yet weights from thirteen tons to more than twenty tons per axle are frequently reported. In some states violations have become the general practice. In Louisiana, during a checkup in 1950, sixty-six per cent of the loaded five-axle tractor-trailers weighed were found to be violating the state law.[59]

Drivers of trucks have worked out schemes of signals and passwords that are becoming their universal language. The purpose of these devices is to warn them of the danger of official weighers in the vicinity so that, if they are overloaded, they may avoid being weighed. Two writers, in discussing

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[59]Brownell, op. cit., pp. 138-139.

efforts to evade weight-checking stations or crews, have written so interestingly of the situation that excerpts are quoted at this point:

> If you're an observant motorist, you may sometimes wonder why you encounter so many huge trucks, obviously of the long-distance type, lumbering along out-of-the-way roads. You may also occasionally notice red flags flying from some gasoline stations and roadside diners along main highways which seem free from unusual dangers. You may even pass a man peering intently through field glasses and making mysterious motions with his left arm. These peculiar doings are symbols of the most fantastic battle of wits on the highways since the rumrunning era. It is practically nationwide, and in some sections it includes such melodramatic touches as spies and counter-espionage, elaborate warning networks, high-speed chases, ambushes, bribery, and even hints of sudden death.
>
> The contest is between trucks loaded beyond legal limits and state officials who charge that such vehicles endanger lives and wreck our roads. Many of the gigantic trucks meandering over side roads miles off the routes to main shipping centers are trying to evade traps set by the officials. The red flags are signals warning that state weight inspectors are operating nearby. The man with the field glasses may be a spy who has spotted a mobile weighing crew lying in ambush, and the pumping motion of his left arm is the truck drivers' universal code for "Danger ahead!"
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> On a sunny afternoon early this summer such a spotter was stationed on U. S. 1, the main highway between New England and Florida. He was partly hidden by a clump of bushes alongside the road, atop a rise a few miles south of Baltimore. Most of the trucks he signaled kept right on going, merely blinking their rear lights as they passed. That's the truck drivers' way of acknowledging a signal and saying "Thanks, pal." These trucks were "cream puffs" — lightly or at least legally loaded — and so had nothing to fear from the inspection station set up a mile southward.
>
> But about every tenth long-distance truck hissed in vehement protest as its driver pumped the air brakes to bring

the mammoth venicle to a halt. Apparently those drivers knew they were overloaded. For them the ambush up ahead meant delay, fines, and maybe jail sentences.

Some of these pulled over to the side of the road and smoked or went to sleep, waiting until the weighing crew would go away. Some turned back to alternate roads which would detour them around the ambush. The first few stopped at the nearest telephones to flash warnings to Baltimore and Washington, and even as far north and south as Philadelphia and Richmond. Sometimes truck centers more than 100 miles away get such warnings within ten minutes after a trap is set.[60]

Forewarned drivers often move illegal loads on weekends — weighing stations customarily are closed — or simply wait until check-weighing ceases. Near Conneaut, Ohio, not long ago, more than 300 trucks were parked along a stretch of U. S. 20 just west of the Pennsylvania line, while a few miles eastward Pennsylvania police manned their scales and looked in vain for customers. On another occasion, when weighing in Virginia continued for several days, scores of drivers unhooked their trailers and drove their tractors back for second loads.

Impatient drivers and those with perishable cargoes may attempt to detour around weighing stations onto secondary roads. There the ponderous rigs inflict even greater damage. Detouring trucks have broken down hundreds of miles of blacktop built to accommodate only farm vehicles. They also have caused an alarming increase in broken bridges on country roads. Indiana alone has been losing an average of one bridge per month from overloaded trucks detouring to evade the law.

But besides wreaking highway damage that runs into hundreds of millions of dollars every year, these overloaded juggernauts are the cause of many fatal and near-fatal accidents. As they climb the slightest hills at a tortoise pace, the drivers of cars behind them become impatient and pull out of line to pass. State police report this as a common cause of highway accidents. Other accidents occur when brakes, strained beyond their limit by overloads, fail to hold on downgrades, or when drivers allow their

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[60] Wittels, op. cit., pp. 19-20.

overloaded behemoths to pick up speeds as high as 80 miles an hour on long descents.[61]

Whereas truckers have worked out many ways of evading the law, enforcement officials have tactics of their own. Weighing crews often set up their equipment as though planning to stay for hours. Then, after remaining long enough to have been "spotted" by the truckers, they suddenly rush to a parallel road in order to nab the overweight trucks that have begun to take the other route in an effort to avoid the weighing crews.

The overloading of trucks is by far the most common and likewise the most profitable type of "bootlegging" being practiced in America. Estimates very widely as to the proportion of trucks which overload—the figures run from five to fifty per cent, depending upon the area of the country. It is a big business, this trying to sneak through with illegal loads. One truck, for instance, was caught recently in Maryland which weighed seventy-eight tons—about forty-four tons above the legal load limit in that state. It should be mentioned that

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[61]Brownell, op. cit., pp. 139-140.

not all truck companies by any means engage in illegal practices; most of them, it must be said, conduct their business honestly and within the limits of the law. The spying, evasive tactics and other schemes are employed only by the flagrant and habitual violators. However, underlying the cops-and-robbers game is one of the bitterest and most significant business wars being waged in this country today. Literally billions of dollars are involved. Although frequent local incidents and unpleasant encounters are likely to occur anywhere in the nation when an enforcement officer apprehends an overloaded truck, the main battles are being fought out in the state legislatures and in Congress.[62] Who is to win yet remains to be seen. The entire problem is one of regulation—regulation of the use of public highways for the public welfare. Involved, too, are questions of the types of laws needed in order to serve best the public good and at the same time not to stifle a flourishing and necessary buriness in modern economy. Obviously, the enforcement of

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[62]Wittels, op. cit., p. 20.

legal load limits for freight-hauling highway trucks is a highly difficult task.

> . . . no state has enough crews to guard all roads at all times, and even if it were possible, stopping all trucks for inspection would jam traffic and unfairly penalize honest truckers. Therefore fixed weighing stations are rarely manned more than a couple of hours at a time and mobile crews almost never stay at one spot more than an hour. The result is a combination of guessing game and hide-and-seek, with overloaded truckers trying to get advance clues as to when and where the weighers are in action, and the officials staggering hours and jumping their mobile crews from road to road to keep the truckers from guessing right.[63]

Flagrant violations continue because fines, ranging from $10 to a rare $250, are all small compared to the potential profits to be realized from overloading. At present, the chances in most states are that the overloaded truck will not be caught, and it has been estimated that a big truck overloaded 10,000 pounds each trip can earn additional gross revenues of $12,500 annually. Company drivers receive overtime pay for delays in connection with arrests, and the companies pay their fines. Some judges have begun to send drivers to jail instead of accepting fines, thinking that such inconvenience may cause the driver to be more careful about

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[63] Ibid., p. 21.

overloading in the future. When a trucking company protested this practice of jailing the drivers, a Maryland judge replied that if the company would give him the men responsible for overloading the trucks, he would release the drivers. His offer was not accepted.[64]

Recognizing the perils to themselves involved in the growing protests concerning law violations, the trucking companies, through the voice of their national organizations, recently pledged full co-operation to state police in their enforcement efforts. A formidable barrier to enforcement is, of course, the wide discrepancies and lack of uniformity which still exist among the various states as to the legal load limits permitted. One striking example of this difficulty is the fact that Massachusetts limits the gross weight of the largest type of vehicle to twenty-five tons, whereas Rhode Island, next door, allows forty tons. Nine tons is the maximum axle load that is legal in about two thirds of the states; but Delaware allows ten tons;

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[64] Ibid., p. 86.

Maine, eleven tons; New York, 11.2 tons. Pennsylvania has fifty-three separate weight classifications for different types of trucks.[65] The over-all problem is further complicated by the lack of uniformity, and it is hardly surprising that efforts in behalf of enforcement appear at times to be ineffectual.

Trucks operate over highways built and maintained by the public by means of financing by local, state, and national governments. More just and equitable methods of taxing these common carriers are being developed, but up to now the revenues they have paid into local, state, and national treasuries are far smaller than the benefits they have received from the relatively free use of highways as their channel of operation. For this reason, the trucking business is often called parasitic in nature, especially because of its tendency to destroy roads without corresponding responsibility for their maintenance or construction. With its virtual highway subsidy, the truck has become a serious competitor of the railroad. This is the result of a lack of any well-defined policy instead of any deliberate

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[65]Brownell, op. cit., p. 140.

effort to favor the trucking business as opposed to the railroads. Huge trucking networks mushroomed almost overnight, taking state and national governments by surprise. When they at length realized the tremendous importance of the problem and noted the severe damage that trucks were causing to highways, they began to enact legislation for taxation and regulation. Apparently, progress in these fields is slow, but it is much more rapid than earlier efforts to regulate and tax railroads.[66] The problem remains unsolved; but the trucking industry is growing with amazing rapidity, and the need for solution is becoming increasingly imperative.

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[66]Hunt and Ament, op. cit., p. 222.

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