TRANSPORTATION:
ECONOMIC PRINCIPLES AND PRACTICES

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TRANSPORTATION

Economic Principles and Practices

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PREFACE

THIS VOLUME, *Transportation: Economic Principles and Practices*, is the successor of *Principles of Transportation* by the same authors. The present book is not a revision of the former one that was published twelve years ago, but is one that has, for the most part, been written *de novo*. Transportation is a business in which services rendered, facilities and agencies employed, and methods of conducting operations have been changing with exceptional rapidity during recent years. The modification and development of government policies of aid and regulation have been equally rapid. The present volume is such a treatise upon the economics and business of transportation as is needed not only by university and college students, but also by transportation officials and employees whose ability to be of service can be enhanced by a comprehensive knowledge of the business of which their special activity is a part.

Each of the five kinds of transportation, railroad, pipe line, air, water, and highway, is discussed, special care having been taken to give to each type or agency of transportation its appropriate portion of the treatise as a whole. One third of the volume is devoted to railroad transportation and the practices, principles and problems connected therewith, the remaining two-thirds being apportioned among the other kinds of transportation.

The business of transportation—the facilities, services, business methods and procedure—is here emphasized in the discussion of each type of transportation. The theory and practice of rate-making and the principles and policies of government regulation are given due consideration, but the discussion of them does not occupy the major portion of the entire volume. The book is a treatise upon the business and the economics of transportation as a whole and of the component parts thereof. This treatment of the subject should make the volume instructive and helpful to the man engaged or employed in the transportation business, and should give the university or college student what he needs to understand and to evaluate theories of rates and charges; while both

men of affairs and the university and college students who are to become men of affairs should, by a study of the volume, have a better grasp of the principles to which the carriers should adhere in serving the public and the principles which should control government policy in the regulation of transportation and carriers.

A comprehensive account of the economics and business of transportation should have for its logical conclusion and summary a brief presentation both of what constitutes an ideal transportation system and of the policy that should be followed in bringing into existence and in regulating such a system. The transportation goal to be sought by the people and Government of the United States is the continuance and expansion of private initiative and enterprise, the coordination and integration of the facilities and services of the several kinds and agencies of transportation into a unified and truly national transportation system. To accomplish this there must be a definite and consistent national transportation policy by which sound principles of government aid and regulation will be applied to each and all of the several interrelated parts of the unified transportation system. For this reason, the last two chapters of the following treatise discuss the coordination of transportation and a national transportation policy.

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PART I

INTRODUCTION

CHAPTER 1

The Functions of Transportation

Transportation is the carriage, conveyance or transfer of persons or property from one place to another. In economic science and in business, transportation plays an important, though often unappreciated, part. The economic, governmental and social progress of each individual nation and of all nations of the world considered collectively depends upon rapid, reliable, and efficient transportation services by rail, water, highway, air, and pipe line. Transportation enters into every stage in the production, distribution, and consumption of goods.

The transportation of goods from places where they are so abundant that they have no value to places where they are scarce or non-existent creates place utility. In Death Valley, California, there are enormous and apparently virtually limitless quantities of borax which there has little if any value. The borax, however, is useful for a number of industrial and domestic purposes, so it is mined, loaded on transportation conveyances and transported to cities and towns throughout the United States where it has a ready market at prices sufficient to defray the capital and labor costs incident to the production, marketing and transportation of the commodity. The difference in value of the borax in Death Valley and in New York is due, in part at least, to the services of the transportation agencies which are used to move it from the place of abundance to the place of scarcity.

Transportation adds place-utility value to all of the commodities important to modern life. In many cases, place utility is created by transportation at several stages in the process of converting raw materials into finished consumer's goods, just as industrial processing adds form and quality utility. Iron ore must be transported vertically from the underground deposits to the surface of the earth by mine facilities, including light railways or elevating equipment. Value is added by this transportation operation. At the mouth of the mine, the crude ore is loaded upon ore cars and transported by railways to ore docks or directly by railroad to smelters. If it is transported to ore docks the cars con-

taining the ore are conveyed to vessel side where the ore is loaded into the holds of ore vessels. At the large ore docks on the Great Lakes or at the seaboard ports the cars are lifted and the contents dumped by giant unloading equipment directly into chutes which convey the ore to the holds of the vessels. The ore carried by vessels is transported by water to ports where it is unloaded into railroad cars and transported, sometimes in trainload lots, to the smelters. At the smelters the ore is converted into pig iron, billets or other semi-finished products. Again these commodities are transported, by railroad, waterway, or highway transportation facilities to the rolling mills where the crude iron is converted into plates or other shapes. Further transportation, either for short distances by plant railway transportation facilities or motor trucks, or long distances by rail, water or highway routes, is necessary to move the steel in this stage of manufacture to fabricating plants where the plates or other shapes are fabricated into girders, channels or other products. After conversion into these important partly-finished products, further transportation is necessary to manufacturing plants where the articles are combined with others to manufacture finished products or finished parts of articles, which are assembled into consumer's goods such as motor vehicles, machinery, and other completed articles.

If the steel is manufactured into parts, it is often necessary to transport the finished parts to other factories where they with other finished parts and materials obtained from other places in the United States or the world are combined by assembly processes into finished articles.

The finished articles must be transported from the manufactories to wholesale distribution centers, in vessel-load, railroad carload or trainload lots, or by highway in truckload or highway caravan lots to dealers or distributors. After the goods are sold by the dealers or distributors they must either be transported to wholesalers for further sale and additional transportation in smaller lots to retail merchants or consumers, or transported directly from the distributors or dealers to consumers.

TRANSPORTATION AND THE DIVISION OF LABOR IN PRODUCTION

Another basic connection between transportation and economic life generally is the importance of transportation to the development of

industry and the division and sub-division of labor within industry. Abundant and efficient labor is indispensable to economic development. The division of labor is limited by the extent of the market in which the products can be sold. The products of local or household industries in the early stages of modern industrial development when adequate and efficient means of transportation were lacking could be produced only to the extent that they could be disposed of in the area that could be served by the small producers. The village cabinetmaker's ability to produce goods and to employ others to divide the task of producing the various parts of the furniture he built were limited by the lack of adequate transportation facilities to transport the lumber and other materials used in manufacture and to convey the finished products to consumers at a distance from his village. Later, rapid and efficient means of transportation made it possible to establish large factories, either near the sources of supply of raw materials or near the consuming markets, depending upon the difference in transportation rates on the raw materials and on the finished products. In these large factories, men and machines could be employed to perform the various cutting, trimming, glazing, smoothing, painting and finishing processes under a system of division of labor. The economies of large-scale production and division of labor are thus made possible through the availability of transportation facilities.

Transportation facilities tend to intensify the division of labor, and improvements in transportation increase the minuteness of the division of labor and extend the horizon of economic activity. Great stress is laid upon the importance of the invention of machinery to the development of the factory system and the accompanying increase in productivity and specialization of industrial labor. It must be borne in mind, however, that machines were introduced in the field of transportation as well as in manufacturing, and without the mechanization of transportation the introduction of machinery in factories would have been of little avail, because without improved transportation facilities raw materials could not have been brought economically to the factories in sufficiently large quantities to supply these centralized production units nor could the finished products be distributed over sufficiently wide areas to support the factory system.

The introduction of steam power in railroad and waterway transportation and the construction of turnpikes and highways early in the

nineteenth century greatly extended the industrial revolution. Some economists, including Professor F. W. Taussig, consider that the introduction of steam power to railroad transportation began a second industrial revolution, or at least created a second phase of the industrial revolution. It seems preferable to consider the application of steam to railroad and water transportation as the continuation of the industrial revolution which began with the introduction of steam power to manufacturing and the development of the factory system.

Another effect of mechanized transportation upon industry is found in the geographical division of labor which it made possible. Prior to the development of facilities for rapid and efficient transportation industries served limited areas, and there were centers of production in many parts of the country. On the other hand, products could be distributed only in the areas where they were produced. The development of rapid and cheap transportation has given many of those products national and international markets. Pacific Coast salmon is distributed to all parts of the United States and Canada. Citrous fruits and fresh fruits and vegetables from California, Florida, and Texas are shipped in refrigerator, ventilated, or other perishable-protective freight cars to national markets. Borax, referred to previously, is marketed in all parts of the United States. Examples of the same sort could be multiplied to show a like result—nation-wide markets for commodities grown or produced in only one or a few parts of the country.

Improved transportation has intensified the effects of the industrial revolution and the development of the factory system by extending the division of labor within factories and making possible the geographical division of labor. As the facilities of transportation have been improved, corresponding changes have taken place in industry, and the process is not yet finished.

TRANSPORTATION AND PRODUCTION PROCESSES

One of the best examples of the effects of improved transportation upon industry is found in the meat business. Before the era of rapid and efficient transportation, food animals were slaughtered and dressed by farmers or by local butchers and the meat products were consumed locally. Improved transportation prompted the raising of cattle, sheep and other food animals in large herds on the ranches of the western

and southwestern portions of the United States. From there, the animals were shipped to the great packing centers, where the cattle were slaughtered and the meat, hides, skins, and by-products were prepared under factory conditions attended by minute division of labor in which each worker or machine was used in repetitive performance of a single operation. In like manner, rapid and efficient transportation made it possible for the fresh and cured meats, canned packing-house products, hides and by-products to be distributed to sectional or national markets. Refrigerator cars were developed by the railways or private car companies to enable the packers to ship fresh meats to markets thousands of miles away, and special services, such as those by peddler-cars in which small quantities of meats and packing-house products can be shipped to small communities which otherwise would be without the benefit of city-dressed meats and packing-house products, have extended the markets and produced geographical as well as local division of labor.

Refrigerated holds of ocean steamships are used in the transportation of frozen meats from the Argentine and Australia to Western European markets, extending even further the geographical division of labor and the development of international markets.

The introduction of improved hard-surfaced highways and motor trucks has tended to change even further the methods followed in the production and distribution of meats and allied products, so that the changes in economic organization due to the impact of mechanized and improved transportation facilities cannot be considered as being at an end, but as active dynamic forces now operative.

In the extractive industries, improved transportation facilities in the form of light railways, railroads, pipe lines, steamships, aerial bucket tramways, motor trucks and airplanes, have assisted in the location and operation of mines, oil wells, natural gas production, coal, lumbering, and all other industries which are engaged in extracting wealth in the form of natural resources. Light railways or railroads are constructed into mining areas to convey to the smelters the ores produced in the mines. Bucket tramways operating upon overhead cables are used to transport ores from mines where access by rail is impracticable. Gathering and trunk pipe lines are used to convey oil and natural gas from the wells to concentration points to be held for the market. Steamships are also used to transport petroleum or its products in crude or refined forms to refineries or marketing centers. Motor trucks are used in many

ways in facilitating the production of minerals, petroleum, forest products and other resources. Airplanes are used in timber cruising, mineral prospecting and survey work, in locating and patrolling pipe lines and other transportation routes, and in other ways.

In agriculture, improved transportation has utterly changed old economic arrangements in the raising of cereal crops, fruits and vegetables, and dairy products, making possible the development of land remote from consuming centers and bringing various products into profitable production.

TRANSPORTATION AND DISTRIBUTION

Transportation is not only the indispensable adjunct of the extractive industries, agriculture and manufacturing, it is also the arterial system of modern distribution, making possible the development of international, national and sectional markets, and the placing of great varieties of the products of the mines, the forests and the factories within the reach of all people. This fact is a commonplace in the daily lives of almost everyone. It is so much a commonplace that the importance of improved and efficient transportation is often not appreciated. A simple illustration will serve to show the various transportation services and agencies which are necessary to distribute products in modern society.

A farmer in North Dakota raises a crop of wheat which, when harvested and threshed, is transported to a local grain elevator by horse-drawn wagon or by motor truck. Here the grain is stored temporarily and shipped in a railroad freight car to a primary grain-marketing center, such as Chicago, where it is inspected and graded either in the car, or unloaded from the car and stored in a grain elevator. The number of transportation and storage operations is increased at this stage if the grain is moved by rail and water routes to the primary markets. From here the grain is sold and moved by railroad again to a milling center where it is ground into flour and packed into barrels or bags. From the milling center the barrelled or sacked flour is transported by railroad or steamship lines to a wholesale flour dealer's warehouse where it is stored awaiting delivery to a baking company. After sale, the flour is transported by railroad, steamship or motor truck to the bakery, where the flour is mixed with other ingredients and baked into bread. The bread prepared for the consumer in the bakery is loaded into vehicles for

delivery to the grocery stores or the homes of the ultimate consumer. If the flour is sold in small lots to local bakeries the number of transportation operations is increased at this stage of the distribution plan.

It is unnecessary to add other examples to show the importance of transportation and auxiliary transportation operations, such as storage, to emphasize the importance of transport to commerce and industry. It will be noted, first, that numerous and highly refined transportation operations are essential to marketing; second, that each transportation operation represents a factor of cost of production and distribution; and, third, that constant efforts must be directed toward improving the efficiency of transportation, if the costs of distribution are to be reduced and waste eliminated.

TRANSPORTATION AND CONSUMPTION

All of us are consumers, in greater or less degree, of services that are performed, and commodities that are produced and distributed subject to transportation costs, and as such we are, or should be, vitally interested in the improvement of transportation and in the reduction of its costs. Improved, and reduced cost of, transportation makes it possible for the average American to enjoy foods, shelter and material comforts which were not available to those of wealth a half-century or even a quarter-century ago. Oranges or grape-fruit from California, Florida or Texas; coffee from Brazil; toast made from bread baked of flour grown in the Dakotas and milled in Minnesota; eggs laid by hens on poultry farms a hundred or a thousand miles away; bacon from Canada, Denmark or from southern or western parts of the United States; sugar from the Philippines, Cuba, Colorado or Louisiana; milk and cream transported by railway or glass-and-steel tank motor trucks, or in cans, from farms hundreds of miles away, or perhaps canned condensed milk from canneries a thousand miles or more away; prunes from California orchards; and other fruits from places a half continent or a world away. Such things are taken for granted in modern life, and the transportation system which makes them possible is as forgotten as the concealed electrical wiring in our homes.

The materials from which modern apartment houses, homes and office buildings are constructed must be transported long distances by various means of transportation—railroad, steamship, motor and air—in order

to provide adequate shelter and the niceties of civilized life. Ours is a complex civilization and one which tends to become more refined and more complex as new desires are stimulated for goods and services, many of which are possible only if adequate and cheap transportation services are available. The causes that modify the wants of men, and thus change what they produce and consume, are many, but nothing will do more to create new wants or more intense ones than a decrease in the cost and an increase in the quantity and variety of consumable commodities. The availability of commodities has been multiplied many times by improvements in transportation, and the effect of this upon human wants has unquestionably been great. Indeed, with our present facilities of transportation, there is practically no limit to the number of wants we can satisfy, and our rapidly increasing demands have spurred us on to an ever-widening range of production.

TRANSPORTATION AND SOCIAL CHANGES

Not only the material things of life represented by food, clothing and shelter require highly organized transportation services but our social and business activities depend upon them. Industry and commerce depend upon adequate passenger transportation to convey commercial travelers all over the country by railroad, motor bus, automobile and airplane. These same means of transportation are used by those who seek education and pleasure in travel to the scenic resources of the United States and the world, and by those whose lives are enriched by visiting friends, or by attending conferences, conventions, exhibitions or other social, scientific or business gatherings. The automobile has done much to put an end to the isolation of rural life. The practice of medicine is facilitated by improved transportation. The administration of justice is aided. Educational facilities have been extended and the single-room, one-teacher little red schoolhouse has given place to the modern rural consolidated school with its improved curriculum and facilities. Moving pictures are brought within reach of rural dwellers. Larger and better church facilities are also made possible for the rural population. Social life has been enriched in many ways.

Improved transportation has bound closer together the parts of the continental United States and the scattered dominions. The United States Government in assisting in the construction of transcontinental

railroads from the Mississippi and Missouri River Valleys to California and the Pacific Coast brought the Far Western and Pacific Coast territories into the Union as states, and has made political solidarity an actuality in a country of over three million square miles in area and of one hundred and thirty million inhabitants.

JOINT COSTS IN TRANSPORTATION

Several important economic laws control the functioning of transportation. One is the law of joint costs. Railroads, and to varying extents other agencies of transportation, transport thousands of different kinds of commodities in trains or other vehicles over the same roadbed or route every day. Numerous transportation services are simultaneously produced under varying conditions by the same train movements. It is possible to ascertain costs of train operation per day, or per mile, but it is difficult to determine the cost of performing the transportation services in connection with each passenger or each item of freight. The services are produced simultaneously, and the apportionment of total cost to units of traffic or service cannot be accurate. The roadbed, rolling stock, buildings, signal system, labor and other facilities of the railroads are used to produce transportation services jointly, so that the cost of producing any given service or of transporting any given commodity is lost in obscurity. Certain costs including direct labor costs, fuel, and vehicle maintenance, may be allocated to certain services, if not to particular commodities and movements, but other costs including the expenses of maintaining way and structures and the overhead costs cannot be so readily allocated. The practical result of the operation of the law of joint costs in transportation is to shift the burden of rates upon commodities according to their ability to bear the rates rather than upon the cost of performing the service, although costs insofar as they can be located or estimated have come to play an increasingly important part in modern rate making.

THE LAW OF INCREASING RETURNS

Railroads and other agencies of transportation present excellent examples of industries subject to the law of increasing returns. The costs of operation in railroad transportation per unit of traffic transported

tend to decrease, within certain limits, as the volume of traffic increases. Each successive passenger or unit of freight traffic added to the normal volume of traffic costs relatively less to transport because the fixed charges and many of the costs of operation do not increase directly with the volume of traffic transported. The roadbed, bridges, structures, signal system, rolling stock and other facilities and equipment are there available for use, and additional traffic can be transported with these facilities at a slight increase in cost for labor, repairs and fuel. Until the volume of traffic increases to such an extent that new or more facilities are required, additional traffic yields handsomely increasing net returns. Income rises faster than expenses.

On the other hand, decreases in traffic and in revenues from traffic are not accompanied by a corresponding decline in operating and fixed expenses, so that after the railroads' or other transportation carriers' traffic falls below certain quantities required to meet fixed and operating costs, deficits pile up at a rapid rate. The operation of this two-edged economic law has been tragically illustrated in the results of decreased passenger and freight traffic in recent years.

Other economic principles will be considered and the application of the laws of joint costs and increasing return will be elaborated in later discussions dealing with specific transportation services and problems.

THE COMPONENT PARTS OF THE MODERN TRANSPORTATION SYSTEM

It is a mistake to consider the various types of transportation and carriers as separate and isolated business enterprises. They are not. They are public utilities performing essentially the same service,—transportation, for all who can and wish to use their services for hire, or with such limitations as are imposed by the carriers or by public authority. They may carry all types of passenger or freight traffic, or they may devote their respective facilities to certain kinds of traffic. They may serve international, national, sectional or local areas. Essentially, however, they are parts of a transportation system, the integration and coordination of which constitutes one of the most important economic problems of recent times.

A classification of the transportation facilities and carriers forming parts of the transportation system of the United States includes:

1. Steam railroads
2. Light railways
3. Urban street railways
4. Urban elevated and subway lines
5. Urban taxicab companies
6. Motor bus or coach lines: (a) local, or (b) interurban or intercity
7. Motor truck or freight lines: (a) local, or (b) interurban or intercity
8. Interurban or long-distance electric railways
9. Railway express carriers
10. Steamship or waterway carriers:
    a. coastwise
    b. intercoastal
    c. inland waterway or canal
    d. Great Lakes
    e. overseas
11. Air transport lines:
    a. passenger
    b. mail
    c. express
12. Petroleum pipe lines
13. Natural gas pipe lines
14. Aerial tramways
15. Bridges
16. Highways, turnpikes and roads
17. Railway car lines owning and operating special types of railway equipment
18. Wharf and dock companies
19. Grain elevator and storage warehouses
20. Lighterage and barge companies
21. Freight forwarding companies, the classification of which as shippers or carriers is somewhat doubtful at the present time. The courts in the past have held such companies to be shippers in the contemplation of the law, but a bill is now before Congress seeking to regulate them as carriers.

The purpose of this volume is to discuss the principles and problems connected with the organization, services, charges and government regulation of railroads, water transportation carriers, motor transport carriers, pipe lines and air transportation companies, and the accessorial and ancillary companies related to these major types of carriers. The discussion is concerned with the economies and business of transportation, and with the relation of the public and the government to the carriers engaged therein.

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PART II

RAILROAD TRANSPORTATION

CHAPTER 2

Railroad Systems of the United States

The United States Transportation System

The transportation system of the United States consists of a number of different types of transportation agencies, each having peculiar usefulness in performing certain functions in connection with the movement of passengers, mail, and freight traffic. Of all these agencies, the railroad is the most important. Indeed, it has occupied such a dominant position in the country's transportation system that one is inclined to overlook the usefulness and the importance of the other agencies. The following tables show the distribution of freight and passenger traffic among the several transportation agencies according to ton-miles of revenue freight, or revenue passenger-miles of transportation service performed in 1937:

TYPES OF CARRIERS	REVENUE TON-MILES	PERCENTAGE OF TOTAL REVENUE TON-MILES
Steam railroads	362,815,000,000	66.0%
Water carriers including Great Lakes	110,127,000,000 [1]	20.0%
Pipe lines, trunk lines	46,044,000,000	8.4%
Intercity motor trucks	30,000,000,000	5.5%
Electric railways	799,000,000	.1%
Airways	2,000,000	....
Total	549,787,000,000	100.0%

The distribution of passenger traffic among the various types of intercity passenger carriers is estimated to be as follows:

TYPES OF CARRIERS	TOTAL PASSENGER-MILES	PERCENTAGE OF TOTAL PASSENGER-MILES
Private automobiles, intercity operation	228,364,000,000	82.9%
Steam railroads	24,695,000,000	9.0%

[1] The figure shown as the revenue ton-miles of freight of water carriers does not include domestic coastwise and intercoastal water traffic, for which ton-mile data are not reported. This tonnage amounts to about 150,000,000 tons annually.

Intercity motor busses	19,644,000,000	7.1%
Waterways	1,309,000,000	.5%
Electric railways	957,000,000	.3%
Airways	477,000,000	.2%
Total	275,446,000,000	100.0%

The "Committee of Six" consisting of three representatives of railroad labor and three representatives of railroad management appointed by the President of the United States in 1938 to consider the transportation problem and recommend legislation estimated the distribution of commercial freight and passenger traffic among the various agencies of transportation as follows: [2]

AGENCY	PERCENTAGE OF COMMERCIAL FREIGHT TRAFFIC, 1937 REVENUE TON-MILES	PERCENTAGE OF COMMERCIAL PASSENGER TRAFFIC, 1937 REVENUE PASSENGER-MILES
Steam railroads	64.6%	52.5%
Intercity trucks	7.7%	....
Intercity busses	....	41.7%
Waterways	3.0%	2.8%
Pipe Lines	8.0%	....
Great Lakes Carriers	16.6%	....
Electric railways and airways	.1%	....
Electric railways	....	2.0%
Airways	....	1.0%
Total	100.0%	100.0%

DEVELOPMENT OF THE UNITED STATES RAILROAD SYSTEM

The Baltimore and Ohio was the first rail common carrier railroad to be constructed in the United States. It was chartered in 1827. By 1830, only 13 miles had been completed and by 1835, its length had been increased to 135 miles. Rail transportation had been adopted a few years previously, but the two roads which had been completed did not offer their services to the public and their power was secured from stationary engines. They were plant facilities and designed to transport proprietary coal from the mines to the canals.

[2] Report of Committee Appointed by the President of the United States to Submit Recommendations Upon the General Transportation Situation, December 23, 1938, p. 67.

The economic needs for rail transportation were so imperative at that time that the entire country became strongly interested in its development. However, there were important groups which opposed the construction of railroads. They were interested in other forms of transportation and included innkeepers, turn-pike companies, stagecoach and wagon carriers, and canal companies. Their arguments did not prevent the growth of the American railway net because rail transportation was so much more economical. Although improved highways reduced land transportation costs substantially the transportation costs prohibited many heavy articles of low value from being moved the long distances they were required to be moved if they were to be marketed. Consequently low-grade bulk commodities were moved by river or canal transportation or they were not moved at all. Highways were used where they were available, but goods were moved over them relatively short distances.

Despite the opposition of opposing interests the steam railroad became an increasingly important factor in inland transportation in the United States after 1830.

The growth in the mileage of railroads in the United States by decades from 1930 to 1938 is shown below:

YEAR	MILES OF RAILROAD	YEAR	MILES OF RAILROAD
1830	23	1890	163,597
1840	2,818	1900	183,346
1850	9,021	1910	240,293
1860	30,626	1920	252,845
1870	52,922	1930	249,052
1880	93,267	1938	236,842

The United States railroad transportation system expanded rapidly until 1910. However, its structure had been practically completed by about 1893 and subsequent construction merely filled in this outline. By 1914, the country's rail transportation needs had become fairly well satisfied. The rise of the motor, both public and private, has now definitely arrested further railroad extension. Inland water, coastwise and intercoastal, and pipe line carriers have also become increasingly important. In the future, the United States railway net will not be changed greatly. This statement does not mean that improved facilities will not be adopted. The industry will adopt modern types of equipment, multiple tracking, and modern terminals and terminal facilities.

Until 1850, railroad construction proceeded at a relatively slow pace in all sections of the United States, except New England. In this group of states, there was a strong demand for railroads. Since its population was dense and railroads depended primarily upon passenger traffic, the large population made their construction more feasible. In general, railroad development was hampered because private capital was not adequate, the country's economic development was not particularly great, and the Government had not become active in subsidizing rail transportation.

The early railroads were designed primarily as local transportation agencies. Most of them connected nearby cities or radiated from seaports. An outstanding transportation characteristic at this time was the close coordination between rail and water carriers as the former were located generally so as to be able to interchange traffic with the latter. This condition was particularly true in the region of the Great Lakes, and in the southern states. Many railroads in these sections of the country supplemented existing water transportation systems and they were not active competititors. The situation changed, however, when the railroads became larger and stronger lines.

About 1850, the public realized the tremendous advantages possessed by the rail carrier and that this facility could be built at a much lower cost than canals. As a result, important canal projects were virtually abandoned. Individuals, sometimes aided substantially by private, local, state or federal grants of land, or loans of credit or funds, turned to railroad construction, with the result that the rail network more than tripled by 1860. Other factors aiding in this development were the rapid development of the Middle West, the development of agriculture and manufacturing, railroad success in its competition with the canal, and the country's recovery from financial and economic depression. During this period, the small local railroads were joined together into larger systems. Through service between New York and Chicago became possible in 1853, and Chicago and St. Louis were connected by through rail service in 1854. A number of short lines were welded together due to the economic need of longer distance transportation, the political and social desirability of fast transportation service to connect the far-flung states of the Union, and the development of large corporations as devices for concentrating and directing the large sums of capital and the large credits required for the management of larger railroad systems.

The period 1860-1870 was marked by the panic of 1857 and the Civil War. In 1856, 3,600 miles were laid down; in 1860, 1,837 miles; in 1861, only 700 miles. The year 1866 marked the resumption of railroad construction. Progress was especially rapid in the West. The first transcontinental railway, the joint Central Pacific-Union Pacific was completed in 1869. This railroad connected the Missouri River with the Pacific Coast. By 1870, there were about 53,000 miles of railroad in the United States.

Rail transportation facilities prior to 1870 were crude and primitive. Most of the rails were made of iron, and heavy rolling stock could not be employed. There was no uniform gauge or spread in between the rails.[3] In New York and New England, the standard gauge was 4 feet, 8½ inches. West and south of Philadelphia, it was 4 feet, 10 inches. In the Far South, it was 5 feet; and in Canada and Maine, either 5 feet, 6 inches, or 6 feet. Between Chicago and Buffalo, 5 different roads still had no common gauge. Clumsy expedients of shifting car trucks, three rails, or extra wide wheel flanges were adopted. The New York Central was the first railroad which laid double track. This occurred during the Civil War. Bridges had not yet been built over many of the widest rivers. Steel rails made by the Bessemer process were not introduced until after the Civil War.

The next decade, 1870-1880, witnessed the construction of about 40,000 miles of road which was built very largely before and after the panic of 1873. This depression was due partly to the construction of railroads at a pace far beyond the economic needs of the country, the overcapitalization of many railroads, and the overexpansion of credit in connection with railroad promotion. East of the Mississippi, railroad construction centered on branch and feeder lines, although the Baltimore and Ohio extended its lines to New York and Chicago in 1873 and 1874 respectively. Much of the mileage constructed during this period was laid down in the upper Mississippi Valley and in California.

The decade 1880-1890 was one of great significance in the economic history of the country and particularly in the development of transportation. More than 70,000 miles of railroad line were constructed in virtually all parts of the United States, especially in the Middle and Far West. This construction record was fostered by the free flow of private

[3] There are still over 1,000 miles of narrow gauge track in the western district and a few miles of broad gauge tracks in the eastern district.

and foreign capital and the liberal policy of Federal, state, and local governments.[4] The Government's policy was dictated largely by its desire to develop unoccupied land and to increase its value for agricultural purposes. Land grants, although sometimes indulged in with excessive prodigality, were decidedly to the advantage of the public as well as the railroads.

Much of the railroad construction between 1866 and 1890 paralleled existing rail facilities and was built not to extend railroad facilities into new sections of the country, but to share the large movements of traffic between large centers of population. Railroad competition became keen and often ruthless as a result. Freight rates and passenger fares between competitive points were forced to low levels, frequently far below the cost of performing these services, while rates and fares between non-competitive points or between points located on only one road were placed at high levels. Large communities served by several railroads, large shippers with heavy tonnages of attractive freight, and the traffic of favored shippers were given concessions in freight charges and standards of service so vastly superior to those given their less prominent rivals that the latter's welfare was imperiled. There arose in many parts of the United States a feeling of great bitterness against railroad oppression. Many demagogical politicians used this sentiment to their own interests.

Many state legislatures enacted primitive railroad legislation and in 1887 Congress passed its first comprehensive legislation regulating rail transportation. This Act was directed principally against unjust and discriminating rates and charges, secret rate agreements, and the pooling of competitive traffic or earnings. Defective as it proved to be in later years, it did much to correct the abuses complained of and it has served, with amendments, as the foundation upon which our present elaborate railroad regulatory legislation has been built.

The decade between 1890 and 1900 added only one-half as much new railroad mileage as did the previous ten years. The panic of 1893 and the five-year period of depressed business following this economic crisis

[4] It has been estimated that the Federal and State Governments granted over 200,000 square miles of land, an amount almost equal in size to the states of Wisconsin, Illinois, Michigan and Indiana. Not all of the land granted was obtained by the carriers, the conditions of the grants not being fully met within the time limit fixed in the grants.

was partly responsible for this low construction rate, but the mileage constructed between 1880 and 1890 undoubtedly provided the country with an almost adequate railroad network.

Between 1900 and 1910, about 47,000 miles of new road were built. By 1910, the major railroad construction program was practically completed although several thousand miles were built each year until the outbreak of the World War in 1914. By that time, the railroad system of the United States comprised 252,105 miles. By 1920, it totaled 252,845 miles, a negligible increase since 1914.

The decade 1920-1930 witnessed an actual net shrinkage in the number of miles of railroad line. Each year, excepting 1928 and 1929, the number of miles of railroad abandoned has exceeded the amount of new construction. In 1930, the United States railroad system comprised 249,052 miles, but by 1938 this figure has been reduced to 236,842 miles, by the excess of abandoned mileage as compared with new mileage constructed. In 1937 only 159 miles of main track were constructed while 1,140 miles of main track were abandoned.

Abandonment of railroad mileage has been due to: (1) the exhaustion of the resources to develop which the railroads were built; (2) the shifting of industries from one section of the United States to another; (3) the deterioration of communities; and (4) the competition of other forms of transportation. From 1921 to 1938, a little over 7,000 miles of road have been constructed and 19,000 miles have been abandoned permanently. Additional miles of road have been abandoned temporarily.

RAIL TRACKAGE AND RAIL MILEAGE

The figures given for railroad mileage do not include second, third and fourth main track, yard tracks, and sidings. The shrinkage in railroad trackage has not been so severe due to the double and quadruple tracking of railroads and to yard and siding construction.[5] Originally, many American roads were of light single-track construction. As traffic increased, heavier rails were laid, curves straightened, grades reduced, and additional tracks were built. It is very fortunate that the American railroads, contrary to European practice, adopted the policy of light,

[5] A mile of double-tracked line is a mile of road, but two miles of track.

cheap construction for it permitted them to rebuild more substantially and to keep pace with the improvements in design and materials without much waste in scrapping obsolete but still serviceable materials.

New trackage has been added by double tracking, or multiple tracking, important rail divisions and in constructing yard tracks and sidings. The following table illustrates this development. The mileage shown for 1938 is the total operated mileage of railways of all classes reporting to the Interstate Commerce Commission.

RAILROAD TRACKAGE AND RAILROAD MILEAGE SINCE 1890

YEAR	RAIL TRACKAGE	RAIL MILEAGE
	Miles	*Miles*
1890	199,876	163,597
1900	258,784	193,346
1910	351,766	240,293
1920	377,378	252,845
1930	429,883	249,052
1938	412,676	236,842

These figures are not wholly comparable because of changes in statistical bases from year to year. The point to be observed is that since 1914, railroad construction has been centered mainly on improvement of existing lines, the multiple tracking of rail systems, and the extension of yards and siding facilities, rather than the extension of new lines. Railroad systems are being improved rather than extended.

SWITCHING AND TERMINAL COMPANIES

Railroads regardless of size, location and form of business organization are divided into two classes with reference to the type of service performed: (1) line-haul carriers, those operating between termini and connecting cities and towns at the ends of their lines; and (2) switching and terminal companies. This latter class of roads includes all rail carriers which operate separately for revenue or joint account, performing certain classes of terminal services as contrasted with line haul services. For the most part, railroads in the United States perform these terminal services directly as a part of the business of the railroad carriers which also perform line-haul service. This is not always the case, however, for

there are a number of switching and terminal services, some of which are by large and important carriers. The services performed by the switching and terminal companies include the performance of switching services only; the furnishing of terminal trackage or facilities, including union freight stations or passenger depots, stockyards, yards and other property for the use of which charges are made; the performance of both switching and terminal services; the operation of bridges and ferries exclusively; and the performance primarily of the switching or terminal services mentioned above, while conducting, in addition thereto, the regular freight or passenger services other than switching or terminal services.

OPERATING AND LESSOR COMPANIES

Rail carriers whether line or terminal are, with respect to mode of organization, operating companies or lessor companies. Operating companies include those the officers of which direct the business of actual transportation and the books of which contain operating as well as financial accounts, independent operating as well as fiscal entities. Lessor companies, on the other hand, are those which maintain a separate legal existence and keep separate financial accounts but which do not keep operating accounts, the property owned by the lessor company being operated by a lessee company.

Subsidiary railroad companies, may be either operating or non-operating companies. They may form parts of operating companies through leases, operating contracts or agreements, or by reason of the control of a majority of the voting capital stock by other companies. These subsidiaries have an independent existence at law and keep their own accounts. The ability to control the action of another company through legal action determines the status of controlling and controlled companies. A lease upon the property of another company does not amount to a form of control recognized by the Interstate Commerce Commission as determining the status of railroads as controlling or controlled roads. Affiliated companies are both the controlling and controlled carriers. A proprietary company is one the entire capital stock of which is owned by another company. It may be either active or inactive.[6]

[6] For complete definition of types of affiliated companies see Interstate Commerce Commission classification of general balance sheet accounts.

CLASSIFICATION OF CARRIERS ACCORDING TO REVENUE

Carriers are divided into three classes according to the amounts of annual revenue from operation, designated by the Roman numerals I, II and III. Class I carriers are those with annual operating revenues exceeding $1,000,000, the large operating companies. Class II carriers are those with annual operating revenues between $100,000 and $1,000,000, the middle size roads. Class III companies have operating incomes of less than $100,000 per year. Changes in operating conditions, number of miles operated, revisions in rates and in corporate relationships with other carriers as well as growth and decrease in business tend to change the classification of individual roads from one revenue class to another.[7]

The statistical data of the Interstate Commerce Commission indicate the relative importance of these three classes of carriers in each of the major sections into which the United States is divided for railroad traffic purposes:

CLASSIFICATION OF CARRIERS BY REVENUE

	EASTERN DISTRICT	SOUTHERN DISTRICT	WESTERN DISTRICT	TOTAL
Class I Carriers:				
Number of carriers	52	32	52	136
Miles of line owned	29,240	34,640	113,535	177,415
Miles of line operated	51,840	44,522	131,679	235,041
Class II Carriers:				
Number of carriers	51	51	88	190
Miles of line owned	1,694	2,812	5,043	9,549
Miles of line operated	2,355	3,654	7,427	13,436
Class III Carriers:				
Number of carriers	55	80	96	231
Miles of line owned	567	1,235	1,567	3,369
Miles of line operated	670	1,296	1,723	3,689

[7] Order of I.C.C., November 22, 1920.

All Carriers:

Number, including lessor, proprietary, subsidiary and unofficial	529	282	368	1,179
Mileage owned	56,147	47,597	134,795	238,539
Mileage operated	60,804	49,565	141,460	251,829

The data upon which the figures in the table above are based include a few thousand miles in Canada, Alaska, and Hawaii.[8]

GEOGRAPHICAL GROUPINGS OF RAILROADS

The Interstate Commerce Commission, for statistical purposes, divides the railroads subject to its jurisdiction in the United States into three major territories and eight regions or districts, several of the latter being included in each of the major territories. The major territories are designated as the Eastern Territory or District, including the New England, Great Lakes and Central Eastern regions; the Southern District Territory, including the Pocohontas and Southern regions; and the Western District or Territory which includes the Northwestern, Central-Western and Southwestern regions.

All of the railroads of the United States are allocated to one of these districts. Roads which operate in two or more districts are assigned for statistical purposes to one district, usually to the district in which most of the mileage of the roads is operated.

The Eastern District is subdivided into the New England region which corresponds to the New England States; the Great Lakes region which embraces the territory from the western boundary of the New England region to the Canadian boundary line and the Great Lakes and the western bank of Lake Michigan, to Chicago and north of a line drawn from Chicago through Pittsburgh to New York; and the Central Eastern region which lies south of the Great Lakes region, east of a line from Chicago through Peoria to St. Louis and the Mississippi River to its junction with the Ohio River, and north of the Ohio River and a line from the Ohio River at Parkersburg, W. Va., to the southwestern corner of Maryland and the Potomac River to the point where it flows into Chesapeake Bay. The Southern District is subdivided into the

[8] Fifty-Second Annual Report of the Statistics of Railways in the U. S., I.C.C. Washington, D. C. (1938).

Pocohontas and Southern regions. The former includes the territory north of the southern boundary of the state of Virginia, east of the eastern boundary of the state of Kentucky and south of the southern boundary of the Central Eastern region. The Southern region includes the rest of the Southern District territory east of the Mississippi River, south of the Ohio River to a point near Kenova, W. Va., and the eastern boundary of Kentucky and the southern boundary of Virginia to the Atlantic Ocean.

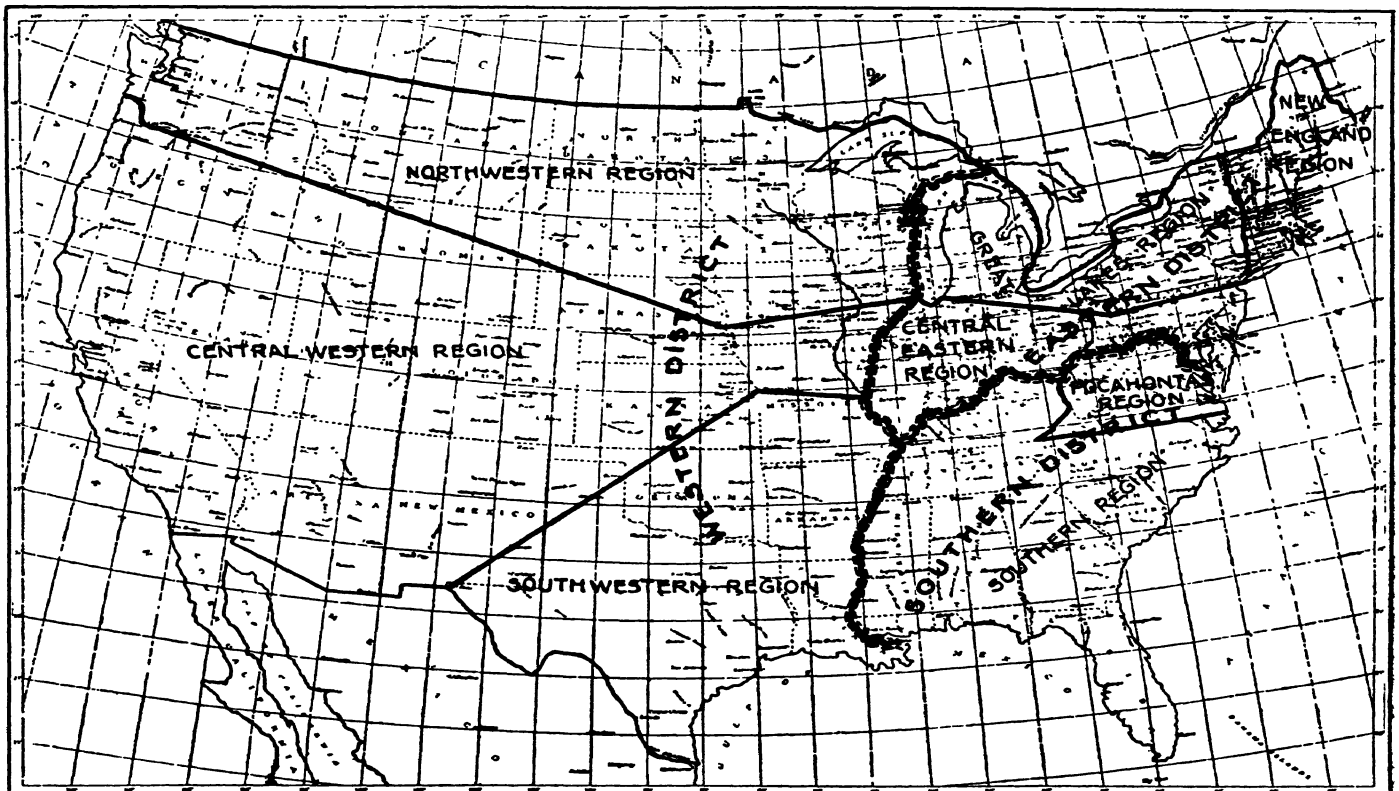
The Northwestern region of the Western District extends from the western boundary of the Great Lakes region of the Eastern District, south of the Canadian boundary and north of an air line from Chicago through Omaha, Nebraska, to Portland, Oregon, and via the Columbia River to the Pacific. The Central Western region lies south of this line, west of the line from Chicago, through Peoria to St. Louis, and north of a line from St. Louis through Kansas City to El Paso, Texas, and by the boundary line between the United States and Mexico to the Pacific. The third sub-division of the Western District, the Southwestern region lies south of the St. Louis-Kansas City-El Paso line, west of the Mississippi and north of the Gulf of Mexico and the Rio Grande.

EX PARTE 74 TERRITORIAL DIVISION

The Interstate Commerce Commission, in granting the horizontal rate advances to the carriers by territories in the Advance Rate Case of 1920, Ex Parte 74, July 29, 1920, established a new four territory division of railroads for rate making purposes.[9] These territories were designated respectively as the Eastern, Southern, Western and Mountain Pacific groups. Increases in rates were granted ranging from 25% in the Southern and Mountain Pacific groups, to 35% in the Western group, to 40% in the Eastern group with 33 1/3% increase on inter-territorial traffic.

The Eastern group corresponds substantially with the territory of the Official Classification the precise boundaries being, The Atlantic Seaboard from the Canadian border to Norfolk, Va.; the main line of the Norfolk and Western Railway from Norfolk, Va., to Kenova, W. Va.; the main line of the Chesapeake and Ohio Railway from Kenova to Cincinnati, Ohio; the Ohio River to Cairo, Ill.; the Missis-

[9] 58 I.C.C. 220.



MAP I

RAILROAD OPERATING DISTRICTS AND REGIONS OF THE UNITED STATES

sippi River to the mouth of the Illinois River at Grafton, Ill.; the Illinois River to Pekin, Ill.; a line south and east of the Atchison, Topeka and Santa Fe Railway from Pekin, through Joliet and Streator, Ill. to Chicago; a line from Chicago to include the southern peninsula of Michigan; the international boundary line between the United States and Canada to the Atlantic Seaboard.

The Eastern group includes the portion of the Virginia Railway extending south of the southern boundary of the group but excludes the portions of the Southern Railway, the Louisville and Nashville Railroad, the Mobile and the Ohio Railroad, the Atlantic Coast Line Railroad and the Seaboard Air Line Railway which extend north of the southern boundary into the territory of the Eastern group.

The Southern group corresponds with the territory of the Southern Classification. It is officially the section lying west of the Atlantic Ocean, south of the main line of the Norfolk and Western Railway from Norfolk to Kenova; south of the Chesapeake and Ohio Railway to Cincinnati; south of the Ohio River to New Orleans, La., and the mouth of the Mississippi River; north of the Gulf of Mexico from the mouth of the Mississippi River to the Atlantic Ocean.

The Southern group includes the portions of the Southern Railway, the Louisville and Nashville, Mobile and Ohio, the Atlantic Coast Line and the Seaboard Air Line Railroads which extend north to the northern boundary of the group into the territory of the Eastern group which are specifically excluded from the Eastern group. The portion of the Virginian Railway extending into the Southern group is excluded from this territory and included in the Eastern group.

The Western group includes the district west of the Eastern and Southern groups; south of Lake Superior and the boundary line between the United States and Canada to the western boundary of North Dakota; north of the Gulf of Mexico and the Rio Grande; and east of the western boundary of North Dakota and the eastern boundary of Montana, the western boundaries of South Dakota and Nebraska and the eastern boundary of Wyoming to the line of the Union Pacific to Cheyenne, Wyoming, thence via the line of the Union Pacific through Denver, Colorado Springs, Pueblo, and Trinidad, Colorado, and thence via the line of the Atchison, Topeka and Sante Fe Railway through Raton and Las Vegas, New Mexico, to Albuquerque and El Paso, Texas.

The Mountain Pacific group extends from the Western boundary

Representative Railroads in the Major Operating Territories in the United States

Eastern District

Central Eastern Regions

- Baltimore and Ohio R.R.
- Pennsylvania R.R.
- Reading Co. - Central R.R. of N. Y.
- Wabash Ry.
- Western Maryland Ry.

New England Regions

- Bangor and Aroostock R.R.
- Boston and Maine R.R.
- Central Vermont Ry.
- Maine Central R.R.
- New York, New Haven and Hartford R.R.
- Rutland R.R.

Great Lakes Region

- Bessemer and Lake Erie R.R.
- Buffalo, Rochester & Pittsburgh Ry.
- Delaware and Hudson R.R.
- Erie R.R.
- Lehigh Valley R.R.
- New York Central R.R.
- New York, Chicago & St. Louis R.R.
- Pittsburgh & Lake Erie R.R.
- Pere Marquette R.R.

Southern District

Pocohontas Regions

- Chesapeake & Ohio R.R.
- Norfolk & Western Ry.
- Richmond, Fredericksburg & Potomac R.R.
- Virginian Ry.

Southern Regions

- Atlantic Coast Line R.R.
- Central of Georgia Ry.
- Cincinnati, New Orleans and Texas Pacific Ry.
- Florida East Coast Line Ry.
- Illinois Central R.R.
- Louisville and Nashville R.R.
- Mobile and Ohio R.R.
- Nashville, Chattanooga and St. Louis, R.R.
- Seaboard Air Line Ry.
- Southern Ry.

Western District

Northwestern Regions

- Chicago Great Western R.R.
- Chicago, Milwaukee, St. Paul & Pacific Ry.
- Chicago & Northwestern Ry.
- Chicago, Burlington & Quincy R.R.
- Chicago, Rock Island & Pacific Ry.
- Chicago, St. Paul, Minneapolis & Omaha Ry.
- Duluth, Missabe and Northern Ry.
- Great Northern Ry.
- Minneapolis and St. Louis R.R.
- Minneapolis, St. Paul & Sault St. Marie Ry.
- Northern Pacific Ry.
- Spokane, Seattle and Portland Ry.

Central Western Region

- Alton R.R.
- Denver and Rio Grande Western Ry.
- Toledo, Peoria and Western Ry.
- Southern Pacific Ry.
- Union Pacific Ry.
- Western Pacific Ry.

Southwestern Region

- Atchison, Topeka and Santa Fe Ry.
- Colorado & Southern Ry.
- Kansas City, Mexico & Orient Ry.
- Kansas City Southern Ry.
- Louisiana & Arkansas Ry.
- Missouri-Kansas-Texas Rd.
- Missouri Pacific R.R.
- St. Louis & San Francisco Ry.
- St. Louis - Southwestern Ry.
- Texas and Pacific Ry.

of the Western Territory to the Pacific Coast but does not include Alaska.

This same territory grouping for rate making purposes was followed by the Commission in the reduced rates case of 1922.[10]

TRAFFIC ASSOCIATION TERRITORIES

Because of difference in the transportation and commercial conditions in various parts of the United States the country is divided into a number of sections or territories. This division gives the benefits of uniform rate structure over a relatively large area and avoids the difficulties of attempting to apply a uniform rate structure over the entire United States. In each of the rate districts or territories the railroads are grouped into freight traffic associations which have jurisdiction over rates, rules and regulations applicable in connection with railroad freight transportation in the respective territories.

The New England Freight Association Territory in general includes the New England states and New York State east of the Hudson River.

The Trunk Line Association Territory is bounded on the east by the New England Freight Association Territory and the Atlantic Ocean from New York, N. Y. to Norfolk, Va. On the north it is bounded by the International and New York State Line and by the St. Lawrence River and Lake Ontario. On the south it is bounded by the line of the Norfolk and Western Railway from Kenova, W. Va., through Roanoke, Lynchburg and Petersburg to Norfolk, Va. On the west it is bounded by the Niagara River through Niagara Falls to Buffalo, N. Y., and by a line via the Erie Railroad through Dayton to Salamanca, N. Y.; thence via the Pennsylvania Railroad through Butler to Pittsburgh, Pa.; thence via the Baltimore and Ohio Railroad through Washington, Pa., Wheeling, Parkersburg, and Kenova, W. Va.

The Central Freight Association Territory occupies the portion of the United States west of Trunk Line Territory; south of a line drawn through the Straits of Mackinac, Port Huron, Michigan, along the western shore of Lake Huron, via the Grand Trunk Railway through Sarnia, Lucan, Stratford, Kitchener, Guelph, Georgetown, and Brampton, to Toronto, Ontario, Canada, along the west bank of Lake Ontario from Toronto to Niagara-on-the-Lake and the Niagara River to Buffalo,

[10] 68 I.C.C. 676, May 16, 1922.

N. Y.; north of a line drawn from Gauley, W. Va., to Ashland, Kentucky, via the Chesapeake and Ohio Railway, and via the Ohio River to the Mississippi River. The western boundary follows the Mississippi River from Cairo, Ill. to Peoria, Ill., thence via the Toledo, Peoria and Western Railway via Streator and Joliet, to Chicago, Ill., thence via the western bank of Lake Michigan to Kewaunee, Wis., including Marinette, Wis., and Manistique, Mich. The New England Trunk Line and Central Freight Association Territories are collectively called, Eastern Territory.

Southern Freight Association Territory, sometimes called Southeastern Territory, comprises the section of the United States east of the Mississippi River, and south of the Central Freight Association and Trunk Line Territories.

The Western Trunk Line Territory extends west from the border of Central Freight Association Territory to, roughly, the Rocky Mountains, and from the United States-Canadian international border line on the north to Southwestern Freight Bureau Territory on the south. This southern boundary extends across central Missouri from St. Louis to Kansas City following the lines of the St. Louis-San Francisco Railway from St. Louis to Pacific, Mo., thence the Missouri Pacific Railway from Pacific to Labadie, Mo., and thence the Chicago, Rock Island and Pacific Railway from Labadie to Kansas City, Mo. The boundary then follows the Kansas-Missouri, Kansas-Oklahoma, Colorado-Oklahoma, and Colorado-New Mexico state boundary lines to the western boundary. The western boundary line extends via the Montana-North Dakota, Montana-South Dakota, Montana-Wyoming state lines, and a line through Sheridan, Caspar, and Cheyenne, Wyoming, Denver, Pueblo, Colorado Springs and Trinidad, Colorado, to the Colorado-New Mexico state line.

Southwestern Freight Bureau Territory extends from the Western Trunk Line Territory on the north to the Gulf of Mexico, the Rio Grande and the international boundary line between the United States and Mexico on the south. The eastern boundary is the Mississippi River, and on the west this territory is bounded by Texas-New Mexico and Oklahoma-New Mexico state lines.

The states of Washington, Oregon, Idaho and the western parts of Montana, and Wyoming and northern California are included in North Pacific Coast Freight Bureau Territory. The Pacific Freight Tariff

Bureau Association Territory includes the states of California, Nevada, and parts of Arizona and New Mexico.

Traffic moving between points in Pacific Coast and North Pacific Coast Territories on the one hand and points in the other territories east of the Rocky Mountains on the other is governed by the Trans-Continental Freight Bureau, and this double-ended territory is called the Trans-Continental Freight Bureau Territory. Overlapping many of these territories and embracing sections not included in the other territories are a number of minor freight traffic association territories, including the Colorado-New Mexico Freight Bureau and the Colorado-Utah-Freight Bureau Territories.

CLASSIFICATION TERRITORIES

In connection with the classification of freight for rate making purposes, the United States is divided into three classification territories:—the Official, Southern and Western Classification Territories. The Official Classification Territory is substantially coextensive with the Eastern Territory including New England, Trunk Line and Central Freight Association Territories. Southern Classification Territory corresponds roughly with Southern Freight Association Territory. The Western Classification Territory coincides approximately with the Western Trunk Line, Southwestern, North Pacific Coast and Pacific Freight Tariff Bureau Territories.

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CHAPTER 3

Railroad Organization and Management

In an endeavor to operate efficiently and economically the vast railroad systems discussed in the preceding chapter, railroad executives everywhere have been compelled to devote much thought to effective business organization and management. There has been much experimenting in the attempt to establish business organizations which will meet the varying management needs of each railroad, not only as to its financial requirements, but with respect to service improvements, personnel management and labor relations, and, relations with the shipping and traveling public, with public regulatory authorities and with connecting carriers. Each railroad system maintains a complete business set-up, and the nature of the railroad industry is such that many traffic and transportation activities require the joint action of several railroads either directly or through established cooperative associations or agencies.

The business organization of a large railroad may contain a wide range of departments to each of which is assigned definite functions. Those having the most direct relationships with the shipping and traveling public are the Operating and Traffic departments. The former corresponds in general to the production organization of an industrial corporation. Through subdivisions known as the Transportation, Mechanical or Motive Power, and Maintenance or Roadway Departments, it performs the physical work incident to transporting freight and passengers and maintaining the railroad's equipment, roadway, structures, signals and other operating facilities. In some instances a Telegraph and Signal Department is maintained as a separate subdivision of the Operating Department. The Traffic Department in general corresponds to the Sales Department of an industry. Through its various subdivisions it performs the work incident to the solicitation and development of traffic, the making of charges, rules and regulations, and the making of traffic arrangements with connecting carriers. Much of its work as to charges, freight classification and traffic rules and

regulations is performed jointly through classification committees, traffic associations and other semi-autonomous agencies. The development of new traffic as distinct from traffic solicitation, moreover, is on some railroads assigned to sub-departments variously known as Development, Industrial or Agricultural Departments.

GENERAL TYPES OF OPERATING AND TRAFFIC ORGANIZATION

As most of the work incident to railroad operation and much traffic work are performed out on the line, there necessarily are line officers whose duty it is to supervise the essential operating and traffic forces maintained in the several divisions or districts which together comprise a railroad system. These line officers are necessarily located at various points, and are to be distinguished from the railroad's general operating and traffic officers who are in charge of operating and traffic functions throughout an entire railroad system or throughout the major regions into which some large systems are subdivided.

So long as railroad lines were comparatively short and served small, compact areas, their general operating and traffic officers were usually centralized at one point and an entire system was supervised from one general office. The centralized type of operating and traffic organization still functions satisfactorily on many small railroads and on some systems of moderate size. There has, however, been a tendency on the part of large railroad systems to decentralize railway management by stationing responsible general officers at strategic points on the line as well as at the central office. Effective executive supervision by general traffic and operating officials is more difficult on a large railroad system, serving a wide territory and operating an extensive network of roads, than on a short, compact system. Statistical reports, moreover, cannot wholly displace personal supervision, and the carriers are attempting to develop a business organization which will enable the general traffic and operating officers to maintain close relations with line officers and employees, and with the shipping and traveling public, and thus, by keeping in touch with local conditions, to perform their duties more intelligently and promptly.

Most large railroad systems have decentralized their traffic and operating organizations to some extent by stationing some of their general

officers at various points, and several companies have adopted a so-called regional plan of organization whereby almost complete traffic and operating organizations are maintained in each of several defined regions. The Pennsylvania Railroad, for example, is divided into three major regions—Eastern, Central, and Western—with regional offices at Philadelphia, Pittsburgh, and Chicago, and the operating organization in each region includes not only the usual General Superintendents, Division Superintendents, and other line officers and employees, but a staff of general operating officers. The operating organization in each region is, indeed, headed by a regional Vice President who acts as the immediate general operating executive of his entire region. Under each of these regional Vice Presidents there is a staff of regional operating officers, some of whom are concerned with all branches of operation, while others are specialists concerned with transportation only or with motive power, maintenance, or telegraph and signals. An additional smaller region known as the New York Zone maintains a separate office at New York. The regional Vice Presidents report to the Vice President in charge of operation, who is a system executive assisted by a staff of operating officials whose duties extend throughout the entire railroad system, and who coordinate the operating managements that are maintained within the several regions.

Most large railroad systems have not decentralized their operating organizations so completely as to adopt a regional plan but most of them have decentralized in part by stationing a number of general operating officers at different points on their lines. Between the centralized type and the regional type of operating organization there is almost endless variation as to the degree to which operating functions are performed directly from a main central office or are assigned to general officers who are geographically detached from the central office.

These three general types or plans of business organization also prevail in traffic management. Many small railroads or systems of moderate size are able to adhere to the original plan of centralizing their general traffic officers at a single central office, but most of the larger systems have either adopted the regional plan or have partly decentralized their traffic departments. When, for example, the Pennsylvania Railroad first adopted the regional plan, almost complete regional traffic departments were created in each region, and each regional Traffic Manager was placed under the immediate executive supervision

of the regional Vice Presidents. Later, however, the regional principle was so modified as to require the regional Traffic Managers to report directly to the General Traffic Manager of the entire railroad system. A Vice President in charge of traffic, a General Traffic Manager and several other system traffic officers, located at Philadelphia, supervise the traffic organization as a whole, but a large number of general traffic officers performing responsible traffic work within prescribed regions or areas are located at Philadelphia, New York, Pittsburgh, Chicago, St. Louis, Detroit and other important points served by this railroad system. Every railroad of average size has certain line traffic officers and employees· such as division freight agents, district freight agents or commercial agents, on the line or at off-line offices, but there is wide variation in the extent to which the general traffic officers are decentralized.

Minimum overhead expense and the possibility on smaller roads of administering efficiently traffic and operation from a central office are sufficient reasons for retaining the centralized plan of organization on such railroads or for decentralizing only to a small degree. The extent to which the traffic and operating organizations of the great railroad systems are decentralized, however, is partly a matter of executive judgment. Whether the regional plan or a plan of partial decentralization will prevail in the future will depend upon further experience. Complete decentralization results in a larger number of general officers than does partial decentralization. The relative efficiency of the plans will ultimately be decisive, but it is now well established that some degree of decentralization in the case of extensive railroad systems is essential to the efficient management of traffic and operation.

The operating organization of a railroad, whether centralized, regional, or partly decentralized, may be either divisional or departmental. All railroads of any considerable size are divided into operating divisions for purposes of actual line operation; and, at an early date, the question arose as to whether the major operating functions—transportation, motive power and maintenance of roadway and structures—should be administered separately by different officers or should be in control of one division officer having jurisdiction over all branches of operation. The former plan is known as the "departmental plan," and the latter as the "divisional plan." Under the departmental plan each major function is administered separately by an officer of a distinct subdepartment

of the Operating Department, the Division Superintendent being concerned only with train operating, train dispatching, car distribution, yard operation, station operation, and other distinctly transportation work. The division shops and the other motive power or mechanical work are in charge of the Master Mechanics or otherwise designated division officials who are in the Motive Power Department; while the maintenance of roadway and structures comes under the Division Engineers of the Maintenance Department.

The divisional plan, on the contrary, places the Master Mechanics and Division Engineers and their entire division motive power and maintenance forces under the supervision of the Division Superintendents. Each Division Superintendent, then, is a division executive with jurisdiction over all operating activites within his division—motive power and roadway as well as conducting transportation. Larger railroads or extensive regions of a railroad system, moreover, may combine several operating divisions into grand divisions, general divisions or districts for further supervision and direction by line officials. Under the divisional plan the General Superintendent in charge of a district is also given jurisdiction over every branch of operation, while under the departmental plan his powers are limited to conducting transportation throughout the area assigned to him.

The departmental plan has in its favor the technical character of railroad operation and the need for specialization. Although the three major functions of operation are interdependent, each requires the services of specialists and three groups of operating employees are in fact employed in each operating division. It is contended by the advocates of the departmental plan that the necessary coordination can be attained through the use of reports and operating statistics and by means of frequent inspections, interdepartmental conferences, intelligent rules and regulations and well adapted working arrangements. In the United States, however, the departmental plan is followed mainly on the smaller roads on which the necessary coordination can readily be attained directly by the General Manager or other general operating officers. One of the large systems that adheres to the departmental plan (with modifications) is the New York Central. The divisional system has become the prevailing American plan of line management on large railway systems, because the close coordination of the various operating functions and forces within each division can be accomplished

more effectively by placing a single division executive in charge of operation as a whole. The necessary specialists are employed in each division, but all of them are subject to his direct executive supervision, and further assistance in technical matters can be obtained through the office of the General Superintendent of a district or from the central or regional office where the company's general officers, many of whom are specialists, are stationed. The divisional plan has the further advantage of training, out on the line, a number of all-round operating officials who become qualified to serve as general operating officers when vacancies occur. Many of the operating officers in a railroad's central office or in its regional offices are specialists, but others, such as the General Managers and Assistant General Managers, are directly concerned with the Operating Department as a whole and require a broad training.

THE OPERATING DEPARTMENT

The Operating Department, which may be centralized, partly decentralized or regional and which may be either departmental or divisional in character, is by far the largest department in the business organization of a railroad. As was stated above, it is subdivided into a number of subdepartments.

The Transportation Department

The Transportation Department is charged with the work of conducting transportation,—the actual receipt, handling, movement, and delivery of freight, and the transportation of passengers, mail and express traffic. Its organization varies on different railroads both as to general type and in detail. Usually, however, there is a Vice President in Charge of Operation; there are one or more General Managers and other general system or regional officers who are concerned with all operating functions, including transportation; and there are also general transportation officers whose duties are confined to the supervision of conducting transportation, the determination of transportation rules and policies and the performance of specific transportation activities. Many railroads employ a General Superintendent of Transportation, a General Superintendent of Freight Transportation and a General Superintendent of Passenger Transportation; and there may also be a Superintendent of Car Service or General Car Accountant, a Superintendent of Stations

and Transfers, a Superintendent of Refrigerator Service and other specialists. If the railroad system as a whole, or an operating region, is subdivided into grand divisions, general divisions or districts, there is a General Superintendent for each division or district. This line officer, under the prevailing divisional plan of organization, supervises operation as a whole and may have a staff including a number of transportation assistants as well as specialists in mechanical and roadway work. Reporting to the General Superintendents or directly to a system or regional officer, are the several Division Superintendents, who, under the divisional plan, coordinate and direct all of the operating forces of their respective operating divisions. The division forces directly concerned with conducting transportation include a wide range of officers and employees. There are train masters and assistant train masters, yardmasters and assistant yardmasters, chief dispatchers and train dispatchers, station agents and sometimes division car distributors. There may also be road foremen of engines who are concerned with both transportation and motive power, and the Division Superintendent's staff may include a division operator, a signal inspector or otherwise designated division officer who is concerned with the maintenance of wires, instruments and signals and also with the direction of operators, repairmen, levermen or switch and signal operators. All of the working forces of these division transportation officers—yard crews, train crews, enginemen and firemen, station and transfer employees, etc. and their clerical staffs—are employed partly or wholly in the business of conducting transportation.

The Motive Power Department

The Mechanical or Motive Power Department which is also an essential subdivision of the Operating Department, is charged primarily with the inspection and maintenance of the railroad's equipment. It is also concerned with determining the types of locomotives, cars and other equipment which are purchased or constructed. All of the shops and engine houses come within the scope of this department. At its top, either for the system as a whole or for each region, there is usually a General Superintendent of Motive Power or Chief of Motive Power who is assisted by a Mechanical Engineer, Chief Electrical Engineer, Engineer of Tests, Chief Motive Power Clerk and other experts. In each general division or district there is a Superin-

tendent of Motive Power or otherwise designated district officer who is assisted by various line experts and a clerical staff. In each operating division there is a Master Mechanic to whom the general foremen in charge of division shops, engine house foremen, motive power inspectors, car inspectors, shop clerks, etc. report. Under the prevailing divisional plan of operating organization it should be noted that the Superintendents of Motive Power are subordinates of the General Superintendents who are in charge of the railroad's general divisions or districts, and that the division Master Mechanics are subordinates of the Division Superintendents who are in charge of the line's operating divisions. The main shops of the railroad, moreover, are in many instances managed by special managerial officers who are not part of its customary line organization.

The Maintenance Department

The Maintenance or Roadway Department, either for a railroad system as a whole or for each region, is usually supervised by a Chief Engineer in charge of Maintenance, who is assisted by a staff of experts. The maintenance standards and instructions determined by them are carried into effect by maintenance of way and structure engineers out on the line. In each general division or district there is an Engineer of Maintenance or otherwise designated line engineer, who in case of a divisional railroad, is a subordinate of the General Superintendent. The maintenance forces of each operating division are supervised and directed by a Division Engineer, who, under the divisional plan, is a subordinate of the Division Superintendent.

Some railroad organizations contain a separate Engineering Department which is concerned primarily with new construction work. It is usually affiliated with the Operating Department in that the Chief Engineer in charge of new construction is required to report to the Vice President in Charge of Operation, General Manager or other executive head of the line's operating organization. Cooperation between the Engineering and Maintenance Departments is essential to efficiency and economy. Both are concerned with the determination of maintenance standards, and much work involving new construction as distinct from maintenance must, in the interest of economy, be performed by the road's maintenance forces. Major construction projects, however, may require distinct construction personnel and the close

attention of engineering officers whose entire time is devoted to new construction work.

RAILROAD TRAFFIC DEPARTMENTS

Traffic services are in part performed by the Operating Department, the station agents being connected with that department; but the prevailing practice in the United States is to distinguish between the transportation of freight and passengers and the commercial or traffic functions of the railroad industry. All railroad companies have separate Operating and Traffic Departments. The Traffic Department of every large American railroad contains at least two subdivisions—the Passenger and the Freight Traffic Departments. In some instances there are also additional subdivisions such as an Industrial, an Agricultural, a Foreign Freight and a Mail and Express Traffic Department, all of which are supervised by the Vice President in Charge of Traffic. In other cases, however, the duties of these subdepartments are performed within the Freight Traffic Department or elsewhere. In some organizations, agricultural and industrial traffic development is put in charge of a Development Department separate from the Traffic Department.

The Freight Traffic Department

The Freight Traffic Department is concerned with the making of rates and other freight charges, the classification of freight, the determination of shipping rules, the publication of tariffs and the making of traffic arrangements with connecting carriers. Freight charges, however, except those of purely local concern, are considered in freight traffic associations, and freight is classified by Classification Committees. Officials of the Freight Traffic Departments of the carriers take part in the proceedings of these committees, and sometimes issue classification exceptions. The general shipping rules are also determined by the Classification Committees, but the traffic officials of the carriers participate in the work of the committees, and individual carriers publish special shipping rules in their tariffs. Some tariffs are published by tariff agents acting for the carriers, and others are issued directly by the Freight Traffic Departments of the railroads. The work of the Freight Traffic Department includes the distribution of tariffs, the filing of tariffs with State and Federal Commissions, the giving of instructions to freight

agents as to the use of tariffs, the quoting of freight rates, the establishment of through routes, the arrangement of the divisions of joint rates with connecting lines, the preparation of percentage or special division sheets for the use of the Accounting Department, the giving of expert evidence, and the preparation of exhibits in freight rate cases before commissions or courts. The Freight Traffic Department, moreover, is entrusted with the solicitation of freight. The methods pursued and the many considerations that enter into this work will be discussed in Chapter 9.

Freight Traffic Departments of the several railroads are not uniform either as regards the official positions provided or as to the assignment of duties to the different officers, and further variation results from the extent to which the work of the department in particular instances is centralized or decentralized. The general freight traffic officers of many railroads act as executives for entire railroad systems, while others function within defined regions or territories. Some officers, moreover, are concerned with all classes of traffic, while others, such as coal freight agents, have jurisdiction over certain commodities or classes of traffic.

The general traffic officers of most railroads include a Vice President in Charge of Traffic; and one or more Freight Traffic Managers, Assistant Freight Traffic Managers, General Freight Agents, and Assistant General Freight Agents. Some companies have a General Coal and Coke Traffic Manager or General Coal and Coke Agent, several have Foreign Freight Agents, and officers in charge of special kinds of traffic such as livestock, dairy products or milk, and perishables. There may also be Agricultural, Industrial or other officers for the development of traffic. The central organization also contains freight solicitors, a Tariff Bureau, and rate, tracing, reconsignment, and other clerks. Where the regional plan has been adopted, there are certain system traffic officers as well as the regional officers maintained within each region or defined area.

Certain freight traffic officers are employed on the line, and at off-line traffic offices or agencies which are maintained at points reached via connecting lines. Division freight agents have charge of defined traffic divisions of the company's lines, and district agents maintain traffic offices at important points either on or off the line. Off-line agencies or representatives may also be known as freight representatives, contracting agents, general agents (who are sometimes connected with

both the Traffic and Operating Departments), or commercial agents; and special titles may be given to off-line agents who are placed in charge of freight solicitation within larger off-line territories. All of these line or off-line soliciting agencies may have staffs of solicitors or traveling agents who act as traffic salesmen.

The Development Department

Many railroad companies distinguish between the solicitation of freight traffic and the development of new business, and maintain industrial, agricultural, or otherwise designated departments either within the Traffic Department or as separate departments. Other companies have not created separate departments for the development of new traffic, but have appointed development officials within the Freight Traffic Department. The business organizations of many railroads contain Industrial Agents, Industrial Survey Agents, Industrial Engineers or officials with appropriate titles, whose primary duty is to bring about the location or development of industries along the lines of their respective companies. There are also Agricultural Agents, whose activities embody everything having to do with the promotion of agriculture and agricultural traffic. Some railroads also employ Geological Engineers, Horticulturists, Supervisors of Farm Marketing, Livestock Agents, Development Agents, and officials with other special titles, all of whom are primarily concerned with the creation of new business.

The policy is sometimes followed of consolidating all of these officials into departments variously known as "Commercial and Development," "Industrial and Agricultural," or "Development" departments. The industrial, agricultural and other development organizations of the larger roads are to an increasing extent being decentralized by the location of officials at points where they can maintain the closest relations with industries and business interests.

The Passenger Traffic Department

The Passenger Traffic Department is organized in a similar manner and it performs the same basic traffic functions for passenger traffic as the Freight Traffic Department does for freight traffic. Under the Vice President in Charge of Traffic as a whole there may be one or more Passenger Traffic Managers, Assistant Passenger Traffic Managers, General Passenger Agents, Assistant General Passenger Agents, Gen-

eral Baggage Agents and other general passenger traffic officers whose duties are either system-wide or limited to defined regions or areas. The department also contains an extensive general office organization and it maintains division passenger agents, district passenger or otherwise designated traffic representatives on the line and at off-line offices.

FREIGHT CLAIM DEPARTMENTS

The adjustment of loss, damage, and overcharge freight claims is so closely related to the freight service that special attention is given to the proper organization of Freight Claim Departments. In the past, most railroads adjusted freight loss and damage claims in the Freight Traffic Department, and this is still the policy of some carriers. Some of the larger railroads have, however, transferred the Freight Claim Department to the Law Department, because questions of legal liability frequently arise and because the Law Department is in any event charged with the duty of defending suits. Other companies have shifted the Freight Claim Department to the Operating Department or to the Accounting Department, and a few have established separate Freight Claim Departments, or have made the Freight Claim Agent directly subordinate to the head of the Traffic Department but independent of the officials concerned with traffic solicitation.

The Freight Claim Department investigates all loss and damage claims, adjusts them with claimants or declines payment, and in case of interline shipments, arranges the division of freight claim payments between connecting lines in accordance with the rules of the Freight Claim Division of the Association of American Railroads. The department keeps the necessary freight claim records and files and may be required to supervise and assist in disposing of unclaimed shipments or freight which the consignee refuses to accept. Much attention is also given to ways and means of reducing losses and freight claims.

The work of the Freight Claim Department requires cooperation with other railroad departments. Freight loss and damage claims usually originate at the stations where the claimants in most instances file their claims and where much of the information needed in claim adjustment is obtained. Large freight agencies usually employ a head claim clerk; also, over, short, and damage report clerks, claim and tracer clerks, and an inspector, and perhaps other station employees who, while not per-

mitted to adjust loss and damage claims, facilitate the adjustment of freight claims by the department. The Freight Claim Department also cooperates with the Operating Department in its efforts to reduce losses and claims. When suit is brought by a claimant, the Freight Claim Department must cooperate with the Law Department's attorneys and with the Accounting Department so that proper adjustments may be made on the company's books. The company's rules may in fact require that claim papers be sent to the Accounting Department and that claim vouchers be referred to that department for verification and countersignature or approval for payment.

The Freight Claim Department may also have charge of the adjustment of overcharge claims but the policy of assigning such adjustments to the Accounting Department has been widely adopted. Some railroads have an Auditor of Overcharge Claims who usually reports either to the Auditor of Freight Traffic or to the Comptroller; other companies place the adjustment of overcharge claims under the immediate supervision of a claim clerk subordinate to the Auditor of Freight Traffic. All overcharge claims arising in connecting with freight rate charges and such special charges as switching, milling-in-transit, storage, demurrage charges, etc., must be investigated as to their merits before they are adjusted with claimants, and claims arising in connection with interline shipments are prorated between connecting lines in accordance with the overcharge claims rules of the Freight Claim Division of the Association of American Railroads or the rules of the Railway Accounting Officers' Association.

OTHER RAILROAD DEPARTMENTS

In addition to the departments referred to above, because of their close relationship to the shipping and traveling public, the business organization of a railroad contains other departments which perform important—in most instances essential—functions.

The Purchasing and Supply Department

As a vast quantity of materials and supplies must be purchased by every large railroad, a Purchasing Department is maintained and as these materials and supplies must be distributed to the departments where they are used, many railroads have also organized a Supply or

Stores Department. These departments are in many instances affiliated as divisions of a Purchasing and Supply Department. Under this plan there is usually a Vice President in charge of both purchasing and supply distribution, who serves as the executive head of both divisions, which are respectively under the immediate supervision of a General Purchasing Agent and a General Storekeeper.

The Accounting Department

There is always an Accounting Department. It is usually under the supervision of a Comptroller or General Auditor and its accounting activities are so extensive that they are subdivided into a varying number of subdivisions. The number of Auditors is not uniform, but usually includes an Auditor of Freight Traffic, an Auditor of Passenger Traffic, and an Auditor of Disbursements. There may also be an Auditor of Station Accounts, an Auditor of Freight Claims and other auditors in charge of particular accounting activities. Disbursement accounting is particularly complicated because, in addition to the auditing work which must necessarily be done at a central office under the direction of the Auditor of Disbursements, much accounting work must be done out on the line, at the company's shops and elsewhere. This line disbursement accounting work is performed by accountants and clerks who are usually employed in the Operating Department but who receive instructions from the Accounting Department. Much accounting work is similarly performed out on the line at railroad stations in connection with revenues. It is performed by the station employees of the Operating Department according to instructions received from the Accounting Department, and current reports are forwarded by station agents to the revenue auditors of the company.

The Treasury Department

Every railroad also has a Treasury Department which under company regulations receives revenues from all sources, makes payments of outgoing funds, safeguards the company's revenues, makes necessary banking arrangements, approves shippers' credit lists, issues or makes arrangements for the issue of company bonds which have been duly authorized, and is concerned with other financial activities. It is under the direct charge of the Treasurer who usually reports to a Vice President. This Vice President serves as the executive head of the

department and is also concerned very directly with financial policy and with the solution of important financial problems.

The Legal Department

A Law or Legal Department of a railroad, usually under the executive supervision of the General Counsel, is maintained by every large railroad. The volume of legal work incident to court litigation instituted against and by railroads, the conduct of proceedings before regulatory commissions, taxation, freight claims, personal injury claims, contracts and agreements, etc. has become so extensive that the General Counsel usually has a staff of Assistant General Counsels, General Solicitors, Assistant General Solicitors, Chief Claim Agents, and other central office attorneys and assistants, and also a number of District Solicitors, who are located at various points out on the line.

The Secretary's Department

The Secretary's Department, under the supervision of the Secretary and a varying number of Assistant Secretaries is one of the essential corporate departments of a railroad. A large amount of corporate work in connection with Board of Director's and Stockholder's meetings, the issue and transfer of authorized stock certificates, approval of payrolls not subject to approval by the authorized officers in other departments, and official company correspondence is performed in the Secretary's Department.

Miscellaneous Departments

The business organizations of some large railroads provide for an even larger division of labor. Specific functions are sometimes assigned to a number of minor departments. A Relief Department may be placed in charge of employee's sickness, accident and death benefit plans. Some railroads maintain Personnel Departments which bring together Relief and other provident institutions or plans under a single executive head, and are also variously concerned with employee relations and the adjustment of labor disputes. Some railroad business organizations contain an Insurance Department and a Real Estate Department. Provision is in some instances made for separate Police Departments and Dining Car and Commissary Departments.

GENERAL MANAGEMENT ORGANIZATION

Although a vast range of railroad activities and functions are performed within the business departments referred to above, it is essential that the several departments be coordinated to whatever extent may be necessary and that provision be made for the determination of the general policies upon which the success or failure of a railroad may in large part depend. The executive head of a railroad as a whole usually is the President. The executive heads of the several departments are responsible to him. His responsibilities include the selection or recommendation of subordinate executives, the extent of his powers in this connection depending upon the company's by-laws; general supervision of the business organization as a whole; scrutiny of reports received by him; personal attention to the solution of problems of major importance which come to his attention; the making of recommendations to the Board of Directors and stockholders, and the inauguration of major policies. He is usually the Chairman of the Board of Directors, although in some instances there is a separate Chairman who has at times exercised the controlling executive influence in matters of railroad policy. It is also customary that the President preside at stockholders' meetings. His reputation frequently centers more largely in the general policies or projects which were initiated or carried out during his term of office than in his routine activities as an administrator.

The President is entitled to the advice and cooperation of the executive heads of the several departments and of any executives not specifically in charge of a department or group of departments. To facilitate this, the business organization of many large railroads provides for an Executive Department. Besides the President it may contain the Chairman of the Board of Directors (if a different individual), the various Vice Presidents in charge of departments, other designated Vice Presidents, the Treasurer, the General Counsel, the Secretary and certain other officers. Its membership is not uniform. Although known as a department, it is in the nature of an executive committee in which the various executive heads and other officers considered essential in the solution of problems and in the consideration of policies are brought together.

Charter provisions, by-laws and legal requirements determine the extent to which the President and other executive officers are dependent

upon action by the Board of Directors or by the stockholders. The President is a member of the Board of Directors, and in many instances certain Vice Presidents or other officers are also members of the Board or take part in its deliberations.

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CHAPTER 4

Railroad Motive Power and Equipment

Transportation is no longer accomplished by the muscles of men and beasts; mechanical power is everywhere employed. In carriage and haulage, as in production and manufacture, man has called to his aid steam, electricity, oil combustion, and gas explosion, each of which is being applied in mechanisms of ever-increasing efficiency. This is a mechanical age in which power is fundamental. Material progress and social changes are determined by the ability of men to apply power economically and effectively to the work to be done.

The mechanisms by which power is made a motive force in transportation are of several general types; most of them have several varieties. They include the steam locomotive with its many variations, electric motor cars and electric locomotives, the gasoline motor car, the diesel-engined motor cars and locomotives, and (in experimental use) the steam turbine locomotive. The steam, electric, gasoline, and diesel engines and the motive power mechanisms in which they are employed are all being rapidly improved.

THE STEAM LOCOMOTIVE: ITS TYPES AND IMPROVEMENTS

The first, and most general, classification of steam locomotives is by number and arrangement of wheels. The so-called "American" type had a four-wheel truck forward and four driving wheels, and the locomotive was thus of the 4-4-0 type. This developed into the "Atlantic" (4-4-2) for trains of ordinary weight and the "Pacific" (4-6-2) for heavier trains and grades. There is a present trend toward a 4-6-4 type for use in the passenger service and also for high-speed freight trains. The tractive power, or drawbar pull, of such a locomotive will be about 45,000 or 50,000 pounds. A booster engine attached to the rear truck of the locomotive will add about 11,000 pounds to the tractive force available for starting trains or hauling them up grades.

For the heaviest passenger service and for fast-scheduled, through freight trains, there is the 4-8-2, the "Mountain" type of locomotive, and a 2-10-4 type for fast freight service.

For especially heavy work there are the 4-12-2 type and the articulated locomotive which has two coordinated engines under one long boiler, the wheel arrangement being 2-6-6-2 or 2-8-8-2, or 2-10-10-2. For switching service the steam locomotive used is usually an 0-6-0. The Baltimore and Ohio has recently put in service a 4-8-4 locomotive, each of the four pairs of driving wheels of which are driven separately by a four-cylinder steam motor geared directly to the driving wheel axle. There are thus four separate, four-cylinder engines, 16 cylinders in all. The possible speed of the locomotive with a streamlined train of fourteen pullman cars is 100 miles per hour on a straight, level track. Its efficiency and economy are being tested.

Another new type of high-speed powerful passenger locomotive that is being tried out is a steam turbine with electric drive. It remains to be determined whether the turbine-electric will prove to be superior to other types of locomotives. While the turbine engine is theoretically superior to the reciprocating engine, it is of complicated design when used for a locomotive. Direct mechanical drive is impracticable, and electric drive is necessary.

For the steam locomotive the three most helpful equipments are those for the superheating of steam, the heating of feed water, and for mechanical stoking.

The superheating of steam is accomplished by passing it through small pipes within the fire flues of the boiler, thus raising the temperature from 350 or 400 degrees fahrenheit to 700 or 750 degrees, on its passage from the boiler to the cylinder. Twenty to 25 per cent less water has to be converted into steam in the boiler, and there is a saving of 15 to 20 per cent in the amount of fuel required.

Feedwater is pumped from the tank in the tender to the boiler of the locomotive. By means of a feedwater heater a part of the highly heated exhaust steam from the cylinder is used to raise the temperature of the feedwater before it enters the boiler, and this results in a net fuel saving of 10 to 16 per cent under favorable conditions. Practically all locomotives are equipped with feedwater heaters.

The mechanical stoker takes up the coal in the tender, crushes the coal into fine particles, carries it by a screw conveyor, and scatters it

evenly over the entire fire-grate. The mechanical stoker began to be used experimentally as early as 1910.[1]

The Interstate Commerce Commission, in 1938, required all new passenger locomotives weighing 170,000 pounds or more, and all freight locomotives of 185,000 pounds or more, to be equipped with mechanical stokers, and that locomotives of those weights now in service be equipped with mechanical stokers within a reasonable time.

For a time it was thought that increased power efficiency could be secured with less fuel cost by double-expansion, instead of single-expansion, engines in steam locomotives. In marine steam engines the desirability not only of double, but of triple and quadruple, expansion engines was realized fifty or more years ago. A number of American locomotives were constructed with engines having a third cylinder, thus providing for double expansion of steam; but they did not prove satisfactory.

A concise statement of the most prominent trends in steam locomotive design and equipment may be made by a quotation from the Report of the Mechanical Advisory Committee.

> Predominant among the modern trends are those which specify that new locomotives be equipped with driving wheels of larger diameter, that tenders of large fuel and water capacity be selected for modern road locomotives which must operate over long distances with the least possible delay, that higher boiler pressure be employed and that these recent motive power types be equipped with auxiliary devices, most of which have been developed to improve locomotive thermal efficiency, to assist in the economical handling of the locomotive in service, to contribute to the safe movement of trains and the measure of control which the engineering may exercise, or to provide uninterrupted service with a minimum of maintenance cost.

The trend, however, is distinctly not toward a locomotive of standard design for use in both freight and passenger service and by railroad systems generally.

[1] Report of the Mechanical Advisory Committee to the Federal Coordinator of Transportation. This quarto-volume report, which was submitted to the Coordinator of Transportation in December 1935, was prepared by a committee of motive power technical experts, the Chairman of the Committee being L. K. Sillcox, Vice President of the New York Air Brake Company. The report deals with motive power for steam railroads, electrification of steam railroads, freight cars, freight transport equipment, and passenger cars.

THE DIESEL-ENGINED LOCOMOTIVE

Among the outstanding phases of the development of railroad motive power, especially from 1934 to date, have been the improvements made in diesel engines for locomotive use and the use made of such locomotive for high-speed line-haul passenger train service. Prior to 1934, the diesel engine had proved to be practical and efficient for switching locomotives used in yard and terminal work, and had begun to be used on railroad motor cars; but since 1934 there has been an increasing rivalry between the high-powered diesel-electric, and the greatly improved steam, locomotives for the high-speed passenger train services. For a while, the diesel locomotive of moderate power was used in line-haul service only for the relatively light specially constructed streamline trains; but at present diesel locomotives of greatly augmented tractive force are beginning to be equipped to haul heavy passenger trains composed of passenger cars of the standard type.

The use of diesel locomotives for heavy local freight train movement took a step forward early in 1936, when the Illinois Central Railroad put into service the first of three diesel-electric locomotives of 1800 horse-power order for hauling freight trains between Chicago and the Markham Freight Yard. The diesel-electric locomotive is both efficient and economical for switching yard terminal services. The rapid technical development of the passenger diesel-electric locomotive may best be indicated by a brief reference to two engines. The Atchison, Topeka and Santa Fe Railroad put into service such an engine in May 1937, to haul the nine streamline light-weight cars of the "Super-Chief" the 2298 miles between Chicago and Los Angeles on a 39¾ hour schedule, a speed including stops of 57.8 miles per hour. This 3600 horse power diesel-electric locomotive comprised two units, each of 1800 horse power. In 1938, the Atchison, Topeka and Santa Fe began operating two "Golden Gate" trains between Oakland and Bakersfield, California, as a part of its fast-schedule train and bus service between San Francisco and Los Angeles. The diesel-electric locomotive used was of 1800 horse power per unit and might be operated in one or two units. It was geared for a top speed of 117 miles per hour. That the type of diesel locomotive just described has power sufficient to haul heavy passenger trains composed of standard heavy coaches is evidenced by the fact that three locomotives practically identical with the one just described were in 1937 put in

service by the Baltimore and Ohio Railroad to haul its "Capitol Limited" between Washington, D. C., and Chicago.

The present rapid development of railroad motive power, both steam and electric, shows no signs of abatement. While the diesel locomotive seems to be entering into new services, for which, only a few years ago, steam power was thought to be unquestionably superior, the steam locomotive is revealing surprising possibilities of technical improvement. It is certain that the further development of the steam locomotive will not be neglected.

RAILROAD ELECTRIFICATION AND THE ELECTRIC LOCOMOTIVE

Electrification of railroads in the United States began in 1895 when the Baltimore and Ohio Railroad Company electrified its tunnel under the city of Baltimore and the approaches to the tunnel, a total distance of 3.6 miles, and the New York, New Haven and Hartford Railroad Company electrified its Nantasket Beach Line for about five miles. These initial projects were followed first by those of minor importance and later by larger ones. Many railway companies have electrified parts of their lines. Among the more important projects have been the New York Central's electrification of its passenger and freight services into New York in 1906; the Pennsylvania Railroad's electrification of its track from Manhattan Transfer (in 1938 from Newark) through its New York City tunnels in 1910; the New York, New Haven, and Hartford's tracks between New Haven and New York in 1907; the Chicago, Milwaukee, St. Paul and Pacific's extensive electrification projects including 441 miles in Montana and Idaho (1915-1916) and 218 miles in Washington (begun in 1919); the electrification of their heavy-grade mountain sections by the Norfolk and Western (1915) and the Virginia Railroad (1925); the electrification by the Great Northern of its approaches to, and its long tunnel through, the Cascade Mountains (in 1906 by the old tunnel and 1912 by the present one); the extensive electrification by the Delaware, Lackawanna and Western of its New York terminal tracks and lines and the Reading Railway's Philadelphia terminal electrification in 1933. The largest of all the railroad electrification projects were those adopted by the Pennsylvania Railroad which began the electrification of its Philadelphia terminal

lines in 1915, completed the electrification of its line from New York to Washington in 1936, and the electrification of its main line between Philadelphia and Harrisburg the following year.

Railroad electrification projects have been carried out to accomplish several distinct purposes: (1) The first was the avoidance of smoke and gases in tunnels under cities and through mountains; (2) to take the smoke-emitting steam locomotive out of city terminals and the surrounding suburban districts; (3) to apply electric power to heavy, mountain-grade sections, the electric locomotive being much superior to the steam locomotive for such work; and (4) to increase the traffic capacity, and the efficiency and economy of operation, of the most congested portion, or the "bottle-neck" section, of a railroad having a large volume of passenger and freight traffic—such as the main line of the Pennsylvania Railroad between New York and Washington and New York and the Susquehanna River.

The extent to which railroad electrification can be carried out in actual practice is determined for the most part by the economies that can thereby be effected and upon the capital costs required to secure the operating economies. Cost and operating economies, however, may not be the only considerations involved. The elimination of the smoke nuisance may be one reason for the electrification of tunnels and city and suburban areas, while the major purpose, especially in the case of terminal and suburban electrification, may be to make available a flexible power that can be applied in large or small units and that makes possible suburban passenger service of the maximum desired frequency and speed. While electric power is superior to steam power, it is only special and exceptional conditions that justify the large expenditure involved in track electrification, the construction of power plant and facilities for power distribution, and the substitution of electric locomotives in place of the steam locomotives that have been acquired at large expense.

The general advantages of electric over steam locomotives, as stated in the above-quoted Report of the Mechanical Advisory Committee are lower repair cost, lower engine-house expense, greater availability, greater flexibility in power output, increase in track capacity, and incidental advantages. An incidental advantage, in addition to the elimination of the gas, smoke, soot and cinders incident to steam operation, is that in city terminals electric tracks and terminals may be underground, the area above having high value for building construction.

The limitation upon railroad electrification, as has been indicated, is fixed by the ratio of the economies and advantages derived to the cost of securing them. The Mechanical Advisory Committee as a result of an intensive study reached the conclusion that:

> The likelihood of wholesale electrification of American railroads freely predicted some 15 years ago, cannot be expected. The inroads of competition by other transportation agencies have reduced traffic volume, the extensive improvement in steam locomotive efficiency has tended to offset some of the savings, and the introduction of internal combustion engine power, permitting some of the advantages of electric traction with the retention of the flexibility of a mobile power plant, has furnished an economical motive power for areas of comparatively low traffic density.

The electric locomotive has reached a high state of technical development, and can be used with equal efficiency in the freight and passenger services. It can haul heavy loads, and at high speeds. Its greater use depends upon the possible increase in traffic that will justify the large expenditures required for railroad electrification.

DEVELOPMENT OF RAILROAD FREIGHT EQUIPMENT

Railroad freight cars are of many kinds, the large number being the result of adapting the freight vehicle to the various services to be performed. All freight cars are of one of two general types, the closed or house type and the open car. The most usual closed car is the ordinary box car which is now constructed for loads of about 50 tons. Other cars of the box type are the refrigerator and the automobile cars, while among the modified closed car types are the stock and tank cars. The open cars include the high and low side gondola cars, the flat car, the ore, coal, and coke hopper cars.

The railroad freight car has had an interesting history. The four-wheel freight "wagon" has been largely used in England up to the present; but it was not adapted to American conditions and as early as 1831 the use of the eight-wheel freight car mounted on two four-wheel bogie trucks began in the United States. American freight car bodies were constructed entirely of wood until after 1870 when the use of steel for underframes began in a small way. The construction of cars with metal superstructures started in 1897 when the first steel hopper

cars were built. "In response to the continued demand for increased capacity, the steel gondola car was introduced about 1900, but the application of steel-framed superstructures to box cars, stock cars and refrigerator cars did not come into extensive use until about 1908" (Mechanical Advisory Committee Report). The refrigerator car with double-sheathed sides for insulation and with end ice bunkers was introduced in 1871. During recent years steel-sheathed refrigerator cars have been constructed. The difficulties encountered in insulation are being overcome. The tank car, which appeared in 1878 as an ordinary wooden or steel tank, cradled on top of a flat car, has developed into a self-supporting tank of several designs adapted to the safe transport in bulk of different kinds of liquids—oil, gasoline, benzine, various acids and chemicals, tar, vinegar and molasses—some of which must be kept cool in transit while others must be kept from becoming cold.

Is it necessary to have so many kinds of railroad freight cars? Of course, each shipper will prefer to have a type of car especially fitted for his particular traffic, but the more types of cars constructed the greater must be the railroad company's investment in equipment. Accordingly, some carriers have had cars so designed as to be used for more than one kind, or for several kinds, of traffic. The attempt to bring about a large use of an "all-purpose" car has not been successful; such cars have not proved popular with shippers.

There is no more interesting problem connected with the development of freight transportation and of the equipment used in providing services than that of furnishing the best kinds of refrigeration. It would seem logical to expect that the several varieties of refrigerator cars required for the different kinds of commodities would be of metal construction and be equipped with mechanical refrigerating devices. However, not only has the general substitution of steel for wood in car body construction been found difficult, but water ice is the most generally economical agent for the refrigeration of freight cars.

During the past few years, and particularly since 1934, rapid technical progress has been made in reducing the weight and increasing the strength of materials that can be used in car construction. The change from the freight cars now in use to those of lighter weight can, however, be only gradual. The railroads can not scrap the present freight car equipment consisting of 1,600,000 units, having an average service life of 20 to 25 years. The lighter cars must be built to replace others

as they are withdrawn from service. Moreover, when an individual railroad company adds new and improved cars to its supply, it cannot retain such cars on its own lines; they are interchanged with the cars of other companies and thus render a large part of their service on the lines of companies that have not made the investment in the cars.

However, American railroads are bringing about the introduction and larger use of light-weight freight cars. An increasing use is being made of alloy steels in freight car construction and welding is taking the place of riveting. By these means weight is being reduced without a prohibitive increase in construction costs.

Most of the tonnage moved on the railroads consists of bulk freight transported in carload lots. The American railroad freight facilities, including the freight car, have been developed to accomplish the movement of heavy freight long distances at minimum cost per ton mile. There is, however, a not inconsiderable volume of less-than-carload and package freight for which appropriate terminal and transportation facilities have to be provided. Before the improved highways and the motor trucks transferred from rail to road half or more of this l.c.l. freight, it constituted about 5 per cent of railroad tonnage and yielded about 15 per cent of railroad freight revenues. While freight will continue to move in large and increasing quantity by highway and truck, it is, nevertheless, possible for the railroads to adopt methods and use facilities that will increase l.c.l. traffic. The methods being adopted provide for the transportation of freight, not merely from station to station and only by rail, but directly from shipper to consignee by a coordinated motor and rail service. To facilitate, and lessen the cost of, this coordinated and complete service, provision is being made for the loading of package freight at the shipper's platform into freight containers or into demountable truck bodies and the transport of the loaded containers and truck bodies by motor-rail-and-motor to the platform of the consignee.

A railroad freight container is a metal weather-proof, theft-proof box in which two to seven tons of freight (depending on the kind of freight) can be placed. The container is of such size as to form a definite subdivision of the surface area and the capacity of a railroad flat car. It can be transported upon a motor truck chassis. The container being a subdivision of a car's loaded capacity, the contents of the container can be given freight rates that are less than the standard l.c.l. rates per hun-

dred pounds, but higher than carload rates. The container provides an improved service by simplifying the transfer and handling of package freight and by reducing the packing requirements. For those shippers who can make regular shipment of l.c.l. freight of considerable volume, and for freight forwarders who can combine several shippers' packages consigned to a common destination, the container has real advantage.

The use of freight car containers is not rapidly increasing, because satisfactory arrangements have not been made for the interchange of containers among connection railroads, and a standard type of container has not been adopted by the railroads. The general inauguration of container car facilities and services and the interchange of containers by connecting carriers would require a larger investment in equipment than present traffic conditions seem to warrant.

Some railroads, the New York Central, the Lehigh Valley, the Reading, the Baltimore and Ohio, lease containers from the L.C.L. Corporation which designs, builds and leases equipment. The largest user of containers is the Pennsylvania Railroad, which has between four and five thousand of the approximately eleven thousand containers used by all railroads. While all of the Pennsylvania Railroad's freight containers can be employed in coordinated rail and motor service only one-eighth are so used, the other seven-eighths being loaded and unloaded at station platform. This station-to-station use of containers eliminates the sending of l.c.l. freight from the receiving stations to a transfer freight house for classification and consolidation by stations of destination. Freight not carried in containers may sometimes also be rehandled at transfer freight houses en route, with the consequent delays.

It was logical that railroads suffering loss of traffic because of truck competition should provide for transporting loaded demountable truck bodies between the cities of traffic origin and destination. This service has not developed rapidly and generally because most long-distance common and contract motor-truck carriers desire to keep the traffic upon the highways. Despite some opposition from railroad companies as well as rival truckmen, the Keeshin Motor Express Company and the Keeshin Transcontinental Freight Lines, have arranged with some railroads for the transport of truck bodies on a rather extensive scale, and the Interstate Commerce Commission has approved special railroad tariffs applying to motor trucks and truck bodies on flat cars. With

further development of the coordination of railroad and motor transportation that may confidently be expected, there will doubtless be an increase in railroad transport of demountable truck bodies.

DEVELOPMENT OF RAILROAD PASSENGER EQUIPMENT

The present accommodations afforded by day coaches and pullman cars are matters of common knowledge not only to those who travel but also to the public generally because of the publicity given in the magazines and newspapers to all improvements in passenger train equipment and services. The early eight-wheeled, wooden passenger cars with their loose coupling, narrow and open platforms, and hand brakes, their stoves for heating the cars, their open, hand-pump wash basins, their oil lamps and other crudities, have step by step been converted into the seventy-foot chair cars, pullmans, and day coaches now in service, with all the conveniences and comforts as to seating, lighting, ventilation and temperature regulation now enjoyed by the travelling public. As the numerous improvements were successfully made in passenger car construction and equipment both the weight of the car and the carweight per passenger increased until the standard coaches and cars weighed from 130,000 to 160,000 pounds and the weight per passenger accommodation ranged from 1,730 to 2,130 pounds.

About 1930 it became manifest that it was also necessary to reduce the weight of passenger cars. To increase speed greatly the railroads have made improvements in the locomotive, and have also reduced the load behind the locomotive and thus the drag or resistance to be overcome in moving a given load at increased speed. Fortunately scientific progress has made possible the use, for car construction, of steel and aluminum alloys of reduced weight and greatly increased tensile strength; and train resistance has been reduced by the use of roller bearings and by the streamlining of locomotives and cars.

A train may be composed of passenger cars of modified standard types to be hauled either by a diesel-electric, or a standard steam, locomotive, or it may consist of cars of new design and of especially light weight to be units of an articulated train hauled by a diesel-electric locomotive. Six three-unit "Rocket" trains were constructed in 1937 by the E. G. Budd Manufacturing Company. The locomotive was a diesel-electric,

and the engine and the three coaches were carried on five trucks. The coaches of the three-body-unit train were of welded stainless steel construction. The total combined weight of the engine and cars of one of these "Rocket" trains was about 340,100 lbs. or approximately 170 tons. One rather small steam locomotive weighs as much as an entire "Rocket" train. Such trains can be run at high speed with exceptionally low operating cost, but are composed of units that are non-interchangeable with the units of other trains. Since 1937 many improvements have been made in the light-weight trains of several types. The number of cars per train have been so increased as to give the train the capacity of ordinary passenger trains; the service has proven popular and profitable, and additional trains are being put into operation.

Long, high-speed trains of 11, 14 and up to 17 standard passenger cars are now in operation, some with stream-lined steam locomotives and some with diesel-electric. Such trains are made possible by improvement in motive power and by reduction in the weight of cars.

Among the many improvements that have been made in passenger cars to add to the comforts of travel the one that has received most attention is air conditioning. This began in 1931 and is becoming general for all the higher-grade passenger runs. Air conditioning of cars is being adopted not only to regulate their temperature but also to provide for the proper ventilation, without open windows, of stream-lined cars operated at high speed.

The remodeling of the interior design, and the accommodations within pullman cars began somewhat later than did the improvement in the comforts and conveniences of day coaches, but changes are now being made in pullmans that make the upper berth more convenient and comfortable, that provide for more double and single compartments and for "roomettes." The pullman cars of the standard type now in service represent a large investment and have a long service life. It will thus be many years before pullman equipment as a whole will be of more comfortable design.

REFERENCES

The Railway Age, Vols. CIV and CV (1938), and CVI, CVII (1939), consult indexes for references to numerous articles. Among the several sources of information, The Railway Age is perhaps the most satisfactory for the non-engineering student.

Report of the Mechanical Advisory Committee to the Federal Coordinator of Transportation (1935). This contains a good account of the evolution and status of the several kinds of railroad motive power and equipment.

CHAPTER 5

Railroad Freight Service

For purposes of convenience the discussion of the railroad freight service may be subdivided into (1) the line-haul freight services, including the various types of freight train services offered by the railroads and also the customary car service incident to their operation; (2) special freight services performed enroute or in transit; and (3) terminal freight services. These services are necessarily so closely related that it is difficult to discuss them without a certain amount of duplication. Together they comprise the railroad freight service from the standpoint of the shipping public. This chapter will be devoted more specifically to the first of these general subdivisions.

TYPES OF FREIGHT TRAIN SERVICE

The major classification of freight train services recognizes three types of freight trains: (1) ordinary or so-called drag or tonnage freight trains; (2) fast, expedited, manifest or otherwise designated scheduled freight trains, and (3) way freight trains.

Drag or Tonnage Freight Trains

Much ordinary freight is shipped on drag or tonnage trains, which are also referred to as slow or dead freight trains. They are operated on irregular schedules or on no definite schedules whatever, when there is sufficient tonnage to justify movement, and they may be reclassified at each intermediate yard or as frequently as is necessary to segregate freight cars for the purpose of obtaining solid trains of adequate tonnage. Their character has, however, changed somewhat since the advent of numerous scheduled freight trains. Except in the movement of coal, many drag or tonnage trains now are lightly loaded because they are utilized to move empty cars in main line services, and because their loaded tonnage is frequently a one direction movement. Some of them are also operated in local services when the volume of

traffic is not heavy. A study by the Federal Coordinator[1] indicated that the average number of loaded cars carried by drag trains was 26 in comparison with an average of 40 loaded cars moved in manifest or scheduled trains. The average gross weight of drag and manifest trains was 2,102 and 2,123 tons, respectively; and their net weight 794 and 752 tons, respectively. Average operating costs of drag or tonnage trains now are very similar to those of manifest trains even though the service performed by the former is comparatively irregular and slow. The average run of the drag or tonnage train, as reported by the Federal Coordinator, was 84 miles in five hours at a road speed of 17 miles per hour, and that of the manifest train was 115 miles in 5 2/5 hours at a road speed of 21 miles per hour.

Fast Freight Lines

The demand for faster and more regular freight delivery has long been a major consideration in the transportation industries. In the railroad industry the time required for freight movement has been reduced partly by means of car arrangements and partly by means of expedited train movements. The first important step taken was to forward carload lots of freight through from shipping point to destination without transfer of lading at junction points. For some years there was no through traffic as it is known at present, and, as the railway network consisted of many small independent carriers, long delays and excessive transfer expenses occurred in the shipment of freight to distant markets. This situation resulted in the organizing of so-called "fast freight lines" which were independent companies that provided themselves with cars, and, whenever track gauges permitted, forwarded shipments entrusted to them through to destination without transfer at junction points. Comparatively fast freight services performed in this way by private freight lines eliminated the delays otherwise occurring when interline freight was shipped. Later these private freight lines were purchased by the railroads and by 1875 they had almost entirely disappeared as independent transportation agencies.

Abuses had crept into the relations between certain fast freight lines and railroad managements, but the principal reason for the disappearance of the lines as private concerns was the increasing interchange of

[1] Freight Traffic Report, Vol. II, page 292.

railroad-owned freight cars. The physical basis for this was created by the gradual adoption of a standard track gauge and a substantial degree of standardization in freight car construction. This was accompanied by the making of the necessary business arrangements under which freight cars could be interchanged. In the shipment of carload freight the prevailing practice of the railroads became the interchange of the loaded cars, but the fast freight lines were in many instances retained by the railroads as parts of their own organization to facilitate traffic development and routing, and in some cases to serve as through freight accounting bureaus. After the railroads regularly interchanged carload freight the fast freight lines, however, lost their former position in the expediting of freight movements. Additional cooperative freight lines were in fact established by railroads, but they likewise were merely through routes and their primary purpose was to facilitate the joint solicitation of through traffic. Some cooperative fast freight lines intended for the expediting of through freight movements are now in existence, and the railroads have in a number of instances organized subsidiary fast freight lines for the operation and management of their refrigerator car services, but the formerly independent freight lines which were later purchased by the railroads have been largely discontinued.

Expedited Freight Trains

It soon became evident that the demand for fast and regular freight service could not be satisfied by the interchange of cars loaded with carload freight. Special reasons for fast services in the transportation of livestock, local as well as interline, were recognized by many railroads and urged by livestock shippers. Shrinkage of livestock while being transported, feeding costs and the humane handling of livestock, and the ability of shippers to reach central markets in time to realize favorable prices, all are factors which at an early date began to set livestock apart from other freight. Federal and state statutes applicable to livestock transportation, moreover, were enacted. Expedited livestock transportation has, however, progressed beyond the requirements of the law. Livestock trains are sometimes given right of way over all other freight trains and may then be hauled at a speed approaching that of passenger trains, and in general an effort is made to expedite all livestock trains.

Fresh fruits, vegetables, meats, dairy products, and other perishable products are also provided with expedited freight services by every railroad. Perishables, especially when destined to distant markets, are hauled in private or railroad-owned refrigerator cars or other special equipment, and efficient icing services are maintained either by private concerns or by the railroads. Steps have also been taken to provide fast train services for perishables. Some of the carriers, as was formerly stated, have organized subsidiary refrigerator car lines such as the Pacific Fruit Express Company, the Santa Fe Refrigerator Dispatch and the Merchants Dispatch. Others do not maintain subsidiary fast freight companies but give preference to cars loaded with perishables, and some of them provide elaborate billing, placarding, and central control systems for expediting their movement. Much perishable freight is moved on scheduled trains, and some of these trains are especially intended for perishables.

Livestock and perishable traffic were first granted fast freight services because of the special needs of such traffic, but during later years an increasing number of railroads have established expedited freight services for many other classes of traffic and in some instances for all freight moving between certain points. The resulting regularity of movement and promptness of deliveries constitute a real improvement in the railroad freight service. Another type of expedited freight service results from the granting of preference in train movement to certain classes of freight without, however, operating scheduled freight trains.

The expedited freight train services which have gradually been established since the early nineties are variously known as "preference," "manifest," "dispatch," "arranged," "fast," "red ball," "disc," "symbol" freight services. The scheduled freight trains of some railroads have been given names to publicize them as definitely as is customary in their passenger services. The range of commodities regularly entitled to expedited train movement varies on different lines. In some instances only perishable and the higher grade articles and merchandise are included; others include many low grade as well as high class articles, and some carriers have expanded their scheduled train services to include all or nearly all classes of traffic moving between specified points. The urge to keep the tonnage of scheduled freight trains up to locomotive rating, moreover, has introduced the practice

of supplementing the volume of red ball or scheduled freight with whatever tonnage of heavier commodities is necessary to fill out the train.[2]

Package Car Services

One of the most recent general developments in the expediting of freight transportation is the establishment of an increasing number of through merchandise or package freight services. Through package cars may be moved in scheduled trains where such trains are operated, but their primary purpose is to expedite less-than-carload shipments by eliminating transfers at junction points. The general interchange of freight cars containing carload freight was referred to above as the first important step in expediting freight movement, but the prevailing practice in handling interline less-than-carload lots of merchandise continued to require their transfer from car to car at junction points. The first modification of this practice usually occurs when L.C.L. freight is loaded into straight cars the entire contents of which are consigned to the same destination, and in case of interline shipments, to arrange that such cars shall be interchanged without transfer of lading. Through package car services have however been extended beyond this initial step. Many railroads now operate merchandise or package cars regularly between specified stations when a prescribed minimum weight of L.C.L. freight is offered by shippers, and many package cars, both in local and interline traffic, are scheduled to run at stated times which are known to interested shippers.

Special services performed in connection with expedited freight train services such as the icing of perishables and the feeding of livestock result in special charges in addition to the freight rate, but the general practice of the carriers is to perform their "time," "dispatch," preference," "package car" and other expedited freight services without charge other than the regular freight rate. Although operating expenses incurred in connection with such services may influence freight rates, expedited services of the kind here discussed are regarded as parts of their line-haul service that are essential to the public and as effective means of developing traffic, rather than as special freight services for which special or additional charges should be imposed.

[2] Federal Coordinator, Freight Traffic Report, Vol. II, p. 291.

Way Freight Trains

Way freight trains, which are a third major type of freight train, are operated locally in the transportation of less than carload shipments which are to unload at various stations between two points. This service is the most costly of the major types of freight train service; it is in many instances definitely unprofitable, but public convenience and necessity makes way trains a necessary part of the railroad freight service except in so far as some railroads have substituted local motor truck services. In comparison with tonnage and expedited main line train services, as the Federal Coordinator's studies indicates, the average main-line way train contains but twelve cars, has an average gross weight of but 829 tons and a net weight of but 291 tons, and makes an average run of but 56 miles in five hours at an average speed of but 12 miles per hour. The average train mile road cost of the way train is lower, but its costs per loaded car mile and per net ton mile are higher than those of tonnage or manifest trains. His studies disclosed that "per-loaded car mile the manifest train cost was 6 cents, the drag train 10 cents and the way train 17 cents," and that "per ton mile the manifest train road cost was 3.3 mills, the drag train 3.2 mills and the way train 6.9 mills." [3]

Peddler Car Services

In transporting meat packing house products many railroads operate "peddler car" services in which L.C.L. shipments are delivered to various consignees along a defined route. These services are a form of way freight service but are distinctive in that deliveries from a peddler car are made direct to consignees while those from the customary way car are made to freight stations.

Local Motor Truck Services

In addition to the major types of freight train services there are several other forms of line-haul freight service. As referred to above, local motor truck services are in some instances substituted for way freight trains, especially when L.C.L. traffic is comparatively light and the stations served are relatively close together. Trucks are also used in the line-haul service to haul parcels of local traffic from the inter-

[3] Ibid, p. 292.

mediate stations where shipments originate to larger or "zone" stations so as to facilitate the make-up of straight carloads of merchandise for final delivery in freight cars. In some instances line-haul truck services, moreover, have become part of a pick-up and delivery system or have prepared the way for a door-to-door transportation service.

The objectives sought are reduced expenses and a faster and better local freight service. These objectives are desirable in themselves, but become particularly important in view of the competition between way freight trains and independent motor truck carriers. Time is saved by reducing the number of freight handlings, by minimizing the movement of freight cars within congested terminal areas and by dispatching motor trucks more promptly after they are loaded with railroad freight. Economies result from a reduction in the number of way freight trains, in the number of stops of such trains and in the number of freight handlings; also from an increased number of solid merchandise car movements instead of a number of transfer cars to near-by transfer stations, and from heavier loading of cars at zone stations to which motor trucks bring L.C.L. freight for further transportation in railroad cars. The use of motor trucks in the line-haul service of railroads is to be distinguished from their use within terminal areas, which is discussed elsewhere in this volume.

Special Freight Trains

Mention should also be made of "special freight trains" and "mixed trains." The former refer to trains operated under special miscellaneous tariffs such as train movements especially arranged for shippers or consignees of large shipments which for special reasons are urgently needed. The governing tariffs usually provide for special charges in addition to the freight rates currently in effect. Special freight train service is also granted to circuses and travelling shows subject to special charges and shipping arrangements. "Mixed trains" contain both freight and passenger cars.

FREIGHT CAR ARRANGEMENTS

Most of the freight transported on the various types of trains operated by railroads moves in either carload or less than carload lots, subject to a substantial difference in freight rates. Some freight, particularly

L.C.L freight, however, is transported in the unit containers which were described in Chapter 4 and some commodities are granted "any quantity" rates which apply regardless of whether they are shipped in carload or less than carload lots.

The unprofitable character of L.C.L. or merchandise freight has long been a source of concern to the railroads, which have endeavored to overcome this handicap and also to improve their merchandise service by means of through package car arrangements, expedited or scheduled trains, the use of motor trucks in lieu of way freight trains, the use of unit containers, the improvement of station practices and facilities, and in other ways. Suggestions as to the organizing of a limited number of railroad controlled companies for the handling of all merchandise traffic, and the adoption of a radically revised system of merchandise freight rates and freight classification were made by the Federal Coordinator,[4] but have not been adopted.

Pool-Car Service

Shippers and consignees of merchandise freight have given particular attention to the difference between L.C.L. and C.L. rates. "Pool-car service" is obtained when a shipper loads L.C.L. freight destined to several consignees into a solid car, his representative at the destination point arranging for local deliveries or re-billing of the freight to final destinations as L.C.L. freight. Carload rates are in this way obtained to the destination point of the original pooled car and deliveries are frequently made more promptly and with less loss or damage than through the customary merchandise service performed by the railroads.

Consolidated Car Service

Consolidated car service has the same objectives in mind, but differs in that the shipments of two or more shippers of L.C.L. freight are consolidated in a single car. A shipper may undertake the work of consolidating shipments, but much of it is done by freight forwarders. When a freight forwarder consolidates shipments into carload lots the railroads receive from the forwarders the carload rates currently in effect, and, when the shipments move in container units, the rates applicable to container shipments are collected by the carriers.

When the consignees receive delivery at the forwarder's depot, the

[4] Merchandise Traffic Report, pp. 17-22.

rates paid by the shippers or consignees to the forwarder are somewhat lower than the railroads' L.C.L. rates. When, however, the forwarder undertakes to perform a store-door delivery service, the rates charged by the forwarder usually are the full L.C.L. railroad rates. In this instance the forwarder performs a store-door delivery service in lieu of reduced freight rates.

Shippers' Cars and Private Car Lines

In discussing expedited freight services mention was made of the independent or private fast freight lines that operated during the sixties and seventies, and also of private car lines that now own refrigerator cars and perform icing services. The private car system has long been a part of the railroad freight service and continues to be of importance at the present time.

During the earliest period of railroad operation the prevailing theory was that the carriers were to provide the roadbed and motive power, while the shippers or car companies provided the necessary freight cars and paid "tolls" for having them hauled over the carriers' tracks. This period of private cars lasted only a short time, but the independent "fast freight lines" which owned private cars and which later became so important in the shipment of interline traffic operated from about 1860 to 1875, a period of fully fifteen years. The present period of private car lines and shippers' private cars began about 1880, largely because of the demand for special equipment and of the failure of the railroads to provide such equipment.

The first important development of the present-day private car system took place in the construction of refrigerator cars for use in the fresh fruit and meat industries. Some carriers regarded the construction of such cars as a hazardous venture, and others pleaded lack of funds for the purchase of special equipment. The result was that a number of private refrigerator car lines were organized and in the meat-packing industry several of the large packing companies provided themselves with refrigerator cars. Competition became keen and the car lines of the larger packers made a regular business of providing refrigerator cars for fruits and vegetables as well as for packing-house products, and they also performed the necessary icing services. Later the railroads began to supply themselves with refrigerator cars. The principal refrigerator car lines now providing cars primarily for fruits and vege-

tables are railroad-owned fast freight lines, but private car lines continue to provide cars for use in these trades, and they remain of special importance in the meat-packing industry.

Private oil-tank cars also had their origin in the refusal of the railroads to provide tank cars for the transportation of oil in bulk. For some years the Union Tank Line Company, originally a subsidiary of the old Standard Oil Company, largely controlled the supply of tank cars, the smaller refineries being at a disadvantage because of the expense involved in tank car construction. The Union Tank Car Company continues to own by far the largest number of tank cars, but in later years many other private tank car lines were organized. Nearly all the large oil refineries and some of the smaller producers have provided themselves with private tank cars. Some tank-line companies have also been organized in other industries, such as the chemical, paper, turpentine, asphalt, tar, linseed-oil, fish-oil, cottonseed-oil, castor-oil, cocoanut-oil, palmolive-oil, powder, sugar, molasses, beer, salt, soap, pickle and vinegar industries.

A third group of private car lines provides livestock cars. These lines were for the most part organized not by livestock shippers desiring to ship their own products, but by independent concerns who make a business of leasing special equipment to the carriers or to shippers. Some private stock cars are used in the movement of ordinary livestock traffic, while others are designed for special purposes such as the shipment of race horses, exhibition livestock, and other valuable animals.

The private coal cars owned by coal-mining and industrial concerns constitute still another distinct group or type. Originally these cars also constituted special equipment, but, when the railroads during later years provided cars especially designed for the economical handling of coal, the principal advantage of the private coal cars to their owners was in the distribution of cars during periods of car shortage.

The standard business arrangement between the railroads and private car owners is based upon the principle that private cars are leased by the railroads and that car owners are entitled to a rental for their use. The former theory of turnpike tolls has been completely revised. Private car owners usually receive a mileage allowance from the carriers varying from 6 mills to 2 cents per mile for different types of equipment. These mileage allowances, subject to specific exceptions provided for in the tariffs of some railroads, are paid for both empty and loaded mile-

age within limits set by the carriers' rules for "equalization of mileage." Excess of empty, over loaded, mileage must be paid for by the owners either by an equivalent loaded mileage during subsequent months or at rates specified in lawful tariffs plus the mileage allowances that were paid on the excess empty mileage. When private cars are rented directly to shippers by car lines, the shippers are required to pay rental charges to the car lines, the shippers in turn sometimes receiving the car mileage allowance from the railroads.

There have been exceptional instances in which a refrigerator car rental charge is collected from shippers in addition to the mileage allowance received from the carrier, but the general practice is that the freight rates and other freight charges of the shipper are the same whether his shipments are made in private or in railroad-owned cars. A special icing charge is imposed in addition to the freight rates on products moving in refrigerator cars, and in case the icing service is performed by a private car line this special charge, although collected by the carrier, is paid to the car line. When the icing service is performed by the railroad the special charge is retained by the carrier.

Distribution of Freight Cars

The first step in the distribution of freight cars to shippers is the apportionment of available equipment among the several operating divisions of each railroad system. This function is frequently placed in charge of a Chief Car Distributor who receives current information concerning car requirements from the division car distributors or chief dispatchers of the operating divisions, who in turn compile it from telegraphic statements or reports made to them by the railroads' station freight agents. The Chief Car Distributor, or other general official administering the apportionment of cars among divisions, must, however, look to the future as well as meet present car demands; he must attempt to reduce empty car mileage and waste in the use of freight cars, and he must if possible expedite both the return of cars from connecting lines and the prompt repair of cars that have been sent to the company's shops.

Within each operating division the available freight cars are distributed on the basis of orders received from shippers on prescribed forms. With these orders before him the freight agent requests the desired cars from the division car distributor or chief dispatcher. If the

entire number requested is not available an equitable division must be made among the shippers. The Interstate Commerce Act does not require railroads in interstate commerce to provide all cars ordered from day to day, but it provides that they must in general furnish a safe and adequate car service and it prohibits unfair discrimination. Car distribution is subject to general supervision by the Interstate Commerce Commission, and the Commission (sec. 1, par. 21) has also been authorized, after holding hearings, to require a carrier "to provide itself with safe and adequate facilities for performing as a common carrier its car service as that term is used in this act.... Provided, That no such authorization or order shall be made unless the Commission finds,... as to such extension of facilities, that the expense involved therein will not impair the ability of the carrier to perform its duty to the public." The full extent, however, to which the Commission has been empowered to require carriers to purchase or construct cars has not thus far been determined. Most of the state railroad and public service commissions likewise are authorized to supervise car distribution in such a manner as to prevent unjust discrimination. Some years ago, however, several states enacted "reciprocal demurrage" laws which penalized the railroads when they failed, within a prescribed number of days, to furnish cars ordered by a shipper up to a fixed maximum number.

Car distribution in the bituminous coal industry differs from the usual practice in that it is based upon prearranged daily "mine ratings." In this industry unfair discrimination in car distribution is felt almost immediately because the production of the mines is largely governed by the current supply of cars, comparatively little bituminous coal being produced for storage at the mines. The Commission in 1924 tentatively approved a plan under which mine ratings are determined by the carriers on the basis of (1) physical capacity, (2) past performance, (3) labor supply, and (4) other factors that may affect the production and shipment of coal. Special mine-rating plans, differing from this general plan, however, were tentatively approved for certain bituminous regions such as those in Indiana and Colorado.

The Interstate Commerce Commission in 1924 also approved the general car distribution rules of the bituminous carriers, with the exception of the rules applicable to their so-called "assigned cars." During periods of car surplus the ratings of mines are unimportant because the carriers' distribution rules then grant to each mine all the cars re-

quested by it. When a shortage occurs each mine is entitled to receive only its prorata share of available equipment as determined on the basis of prearranged mine ratings, and then it may become highly important to particular mines as to how many cars are included in the supply available for general distribution. Many railroads regularly assign certain railroad fuel cars to particular mines from which they obtain fuel on time contracts, and a second group of assigned cars consists of coal cars privately owned by coal mines or industrial concerns. The practice had been, to include such cars in the available supply, subject to the important proviso that in case of severe shortage a car owner shall be entitled to the use of his cars. The Interstate Commerce Commission in 1924 concluded that railway fuel cars and private coal cars "should be counted and charged against the mines at which they are placed in the same manner and to the same extent that unassigned cars are counted and charged." The only assigned cars recognized by the Commission are such cars as it may itself assign to coal mines to meet emergencies. The decision of the Commission was appealed to the courts but on May 31, 1927, its validity was upheld by the United States Supreme Court.[5]

Freight Car Service and Interchange Rules

As freight cars are interchanged between connecting lines, car service is an interline problem as well as one that concerns each railroad system. Under the prevailing system of interchange, railroad freight cars are returned to their owners who receive compensation for their use by connecting lines. Rules administered by the Car Service Division of the Association of American Railroads have been quite generally adopted in agreements.

The Car Service and Per Diem Rules are chiefly of importance because they contain the carriers' rules governing the return of interchanged cars and the payment of per diem charges. These rules are of importance to shippers as well as carriers because they affect the distribution of freight cars. Empty freight cars may not be delivered to shippers indiscriminately and without reference to the destinations of their shipments. Formerly a mileage charge was usually paid, but since 1902 the basis of compensation has been a per diem charge, the present standard amount being one dollar per car per day. Certain penalties not exceeding sixty cents per day, are added to this charge if a car is

[5] U.S. v. Berwind, White Coal Mining Co., et al., 274 U.S. 564, May 31, 1927.

not reported. The purpose of the per diem charge is to cover the cost of car ownership or equipment investment and also to act as an inducement to connecting lines to return foreign cars to their owners. Detailed regulations are included in the rules as to the reporting of interchanged cars and per diem, and the settlement of the amounts due.

The Car Service and Per Diem Rules are subject to public regulation by the Interstate Commerce Commission. The Commission has been authorized, after holding hearings, to establish reasonable car service rules and prescribe the compensation that shall be paid for the use of foreign cars. To meet emergencies, moreover, the Commission may suspend existing car service rules and practices, prescribe emergency rules without regard to car ownership, order the relocation of freight cars and grant preference or priority in the movement of traffic.

An alternative to the interchange of freight cars subject to car service rules is a "car pooling" plan. Freight cars were pooled during the war control period when the car service rules of the carriers were suspended as between the railroads then under Federal control, and a beginning had been made even before this step was taken by the government. Car pooling has since been suggested frequently, but the carriers have not seen fit to abandon their car service rules. Under a car-pooling plan freight cars, subject to relocation and supervision by a central agency, would be assigned to car pools and would be utilized without code requirements as to the current return of cars to owning carriers. Economies would result from reduced empty car mileage and probably also from reduced capital investment in freight equipment.

The carriers' rules governing the condition of, and repairs to, freight cars for the interchange of traffic, commonly known as "Interchange Rules" or "Master Car Builders' Rules," contain many specific clauses the general purpose of which is to make car owners responsible for repairs necessitated by ordinary wear and tear; to place responsibility with the handling line for damage occurring through unfair usage or improper protection, and to provide a definite means of settlement; and to provide an equitable basis for charging such repairs and damages.

Mention should also be made of the Car Record Office maintained by each railroad somewhere as a part of its business organization to facilitate the interchange of cars and to maintain records showing the location of cars. The record department of this office keeps separate records showing the location and movement of home and foreign cars, com-

putes the per diem that the companies owe to each other, and renders per diem reports to car owners. The functions of its mileage department are to keep mileage records of private freight cars and interchanged passenger cars; compute the amounts due on such cars, and render the reports necessary for settlement. The special treatment of private freight cars [6] and passenger cars is due to the prevailing practice of paying for their use on the basis of mileage charges instead of per diem.

Car Demurrage Rules and Charges

In order to reduce unnecessary detention of freight cars by shippers and consignees for loading, unloading, forwarding directions, storage or other purposes, the railroads have found it desirable to publish and enforce car demurrage rules and impose demurrage charges. The rules now in effect on most railroads are known as the National Car Demurrage Rules. They apply to all cars except (1) cars under load with railroad company material for the use of and consigned to the carrier in whose possession the cars are held; (2) cars under load with livestock, but not including cars held for or by livestock shippers for loading, and also not including cars used for shipping live poultry; (3) empty cars placed for loading coal at mines, mine sidings, coal washeries, or coke at coke ovens, and such cars under load at such places, provided special car distribution rules in lieu of demurrage rules are in effect; (4) private cars on private tracks when the ownership of the car and track is the same, and "empty private cars stored on railroad or private tracks, including such cars sent by the owner to a shipper for loading, provided the cars have not been placed or tendered for loading on the orders of a shipper"; (5) cars containing refused or unclaimed freight subsequently sold by the carrier for charges, when held for the convenience of the carrier beyond legal requirements.

Definite rules are included concerning the computing of time for loading, unloading or other purposes, the serving of arrival notices, and the placing of cars for loading and unloading. Subject to these rules and to specified conditions under which an extension of time is granted before demurrage begins to accrue, the National Car Demurrage Rules permit a "free time" of forty-eight hours for loading or unloading and twenty-four hours for reconsignment, diversion, reshipment or in case

[6] Including numerous refrigerator cars, etc., owned by refrigerator freight lines which are subsidiaries of railroad companies.

a car is held in transit on the order of the shipper, consignee, or owner, or is held for other purposes specifically defined in the rules. After the authorized free time expires demurrage accrues at the rate of $2.20 per car for each of the next four days and $5.50 per car for each succeeding day.

Shippers and consignees may, however, enter into so-called "average agreements," under the terms of which demurrage is computed on the basis of the average time of detention to all cars released during each calendar month. Credits are used to offset debits. One credit is allowed for each car released within the first 24 hours of free time, and one debit is recorded for each of the first four days after the expiration of 48 hours. Excess debits are then charged at the rate of $2.20 per debit, but if the credits for the month equal or exceed the debits no demurrage is charged. In case a car has accumulated more than four debits, however, a charge of $5.50 per car per day is made for all subsequent detention. These average agreements are usually advantageous only to shippers or consignees having special facilities for loading or unloading cars. After four debits have accrued on a car, Sundays and legal holidays, which are excluded in computing ordinary demurrage, are no longer excluded under the average agreement, and the usual extension of free time for adverse weather conditions and bunching of cars, except under special circumstances, is not permitted. Credits earned on cars held for loading, moreover, may not be used to offset debits accrued on cars held for unloading, and average agreements do not apply to cars held for reconsignment, diversion, reshipment, or in transit on order of the shipper or consignee or owner.

The National Car Demurrage Rules are at present applied widely but not universally. The rules themselves exclude several classes of traffic, and individual railroads at times publish separate demurrage rules designed to meet special local conditions. Some of the states, moreover, still have special demurrage regulations or statutes which modify the National Car Demurrage Rules in certain respects in their application to cars moving in intrastate commerce. They have also at times been supplemented by "track storage charges" at particular points where dealers, speculators, or others have used railroad cars for warehousing and merchandising purposes.

Demurrage rules and charges are published and filed in definite tariffs and their enforcement is in most sections of the country super-

vised by neutral or autonomous Demurrage and Storage Bureaus. The station agencies of many railroads administer the rules and compute demurrage, subject to general supervision by these bureaus, but some railroads have authorized the bureaus to supervise and check demurrage work in detail.

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CHAPTER 6

Special Railroad Freight Services

The railroad freight service includes not only the ordinary or customary terminal and line-haul services of the carriers, but many special freight services and privileges. The distinction between ordinary and special services cannot always be made with precision. Some of the train and car services discussed in chapter 5, for example, are special in that they afford services which are faster, safer or more economical than the ordinary freight service. Most of these special freight train or car services—fast freight line and expedited or scheduled freight train services, through package car services, peddler car services and local motor truck services in lieu of way trains—are, however, performed without additional charges and some of them have been so widely extended that they have become the customary method of transporting many kinds of railroad freight.

But many auxiliary or ancillary services are performed in addition to or to supplement the service of transporting freight from shipping point to destination. Some of them are performed without special cost to the shipper, but many are subject to special charges in addition to the prevailing freight rates. They are performed in accordance with the regulations and charges contained in published special services tariffs.

Reconsignment and Diversion

One of the most generally performed special services is that performed in connection with the reconsignment and diversion privilege. This privilege has come to include not only a change in destination, but also a change in route, a change in the name of the consignor, a change in the name of the consignee, and any other change which requires a change in billing or an additional movement of the car. It is especially important in the marketing of fruits and vegetables that are shipped to distant markets. Carloads of California fruits, for example, are forwarded before their final markets have been determined. The cars are billed to a reconsignment point and the shipper is thus able to take

advantage of favorable market conditions wherever they may be found either in the Central West or in the East. The marketing value of the reconsignment privilege to the fruit shipper is obvious, and a general economic value also results from the equalization of market supply, the prevention of alternate periods of glut and scarcity, and in some instances the expediting or speeding up of the marketing process. Reconsignment may in fact influence the production policies of an industry, such as bituminous coal mining, the output of which is closely dependent upon the daily supply of freight cars. The reconsignment privilege is also utilized frequently in the shipment of grain from the primary terminal markets of the Central West to the eastern seaboard markets and other wholesale grain markets in the Atlantic states, and it is used occasionally in many other industries.

Definite tariff rules are necessary because the reconsignment privilege may be subject to abuse by shippers and also because special charges are imposed and care must be taken to avoid unfair discrimination. Certain reconsignment services such as those merely requiring a change in billing or other inexpensive operations are frequently performed without imposing a reconsignment charge, but, except under conditions specifically set forth in the railroad reconsignment tariffs, a special charge in addition to the freight rate is collected.

Transit Services and Privileges

"The flow of commodities from the sources of production to the trading and consuming markets throughout the United States is facilitated by the establishment, by the railroads connecting these areas, of arrangements that permit the stopping off of the goods at manufacturing and commercial centers so that further manufacturing and commercial processes may be applied to the raw or semi-finished materials to bring them nearer to their finished commercial state." [1] Transit services and privileges, subject to published tariffs, authorize the stoppage of many kinds of commodities at transit points en route without loss of through freight rates. They are intimately connected with the marketing or distribution of many of the staple commodities of commerce and they also have an important bearing upon the location of manufacturing industries and the production of commodities.

The "milling-in-transit" service and privilege which has become so

[1] Wilson, G. Lloyd, Transit Services and Privileges, p. 1.

important in the grain and flour industries originally began in the eastern states for the primary purpose of enabling eastern flour mills to compete with the mills that were being established in the Central West. The latter are in many instances located in cities where large primary grain markets have been established and all of them are located relatively nearer to the grain fields of the Central West than are the older milling centers of the eastern states. Eastern mills, when receiving western grain at local inbound rates and shipping flour at local outbound tariffs, were handicapped in their attempt to compete with western millers whose flour shipments to the Atlantic seaboard had the advantage of through freight rates. The milling-in-transit privilege tends to equalize this difference by enabling eastern mills to receive grain from the Central West subject to a special arrangement which permits them to convert it into flour and other grain products, and subsequently to ship their manufactured products upon payment of an amount equivalent to the through freight rate from the original grain shipping point to the destination of their mill products. Later the milling-in-transit privilege was also extended westward because mills were established at many central western points less favorably located than some of the great milling centers. It was also extended to grains other than wheat, and miscellaneous special tariffs such as those permitting the shelling of corn, the blending and mixing of flour, and the mixing of glucose, etc., into stock feed at transit points have been established by many railroads.

The same general type of special transit privilege has been extended to many other industries. The special tariffs of the railroads variously apply to cottonseed, soy-bean and other oil cake or meal, alfalfa feed, dried beet pulp, copra meal, and other varieties of stock feed. Different grades of syrup and molasses are mixed at transit points, and oils are mixed and blended and, in some instances, refined subject to transit arrangements. Logs are at times sawed into lumber at transit points, and rough lumber is shipped to mills located at such points to be resawed, dressed, kiln-dried, manufactured into lumber products, or to be sorted, graded, inspected, or stored. Veneer, box material, and pencil slats are sometimes manufactured at transit points subject to a "band-sawing-in-transit" privilege; unfinished handles, neck yokes, etc., may be stopped en route subject to a "finishing-in-transit" privilege; lumber and other forest products may be unloaded at transit points for creosot-

ing or burnetizing. Marble and granite are also at times shipped subject to a finishing-in-transit privilege, and zinc ore and lead bullion, subject to a "refining-in-transit" arrangement. Livestock is frequently unloaded at transit points for further grazing or to be fattened or prepared for subsequent reshipment to the central livestock markets under protected through rates.

In the iron and steel industry the "fabrication-in-transit" privilege has become almost as important as the milling-in-transit privilege has become in the grain and flour industries. Many fabrication plants have been established at a distance from the steel plants principally in order to avoid congestion at the great steel manufacturing centers. Much structural steel to be used in the construction of buildings, bridges, or ships is unloaded at these plants for further fabrication, such as bending, boring, bolting, counter-sinking, cutting, painting, riveting, straightening, welding, etc., with the privilege of subsequent forwarding without sacrificing the through rate in effect from the original steel mill to the final destination of the fabricated steel.

Many other transit services and privileges involving the actual manufacture or physical processing of commodities can be cited. Coffee, for example, is at times roasted and ground in transit; magnesite is ground and sacked; alcohol is denatured; glycerine is refined.

There are also many transit services and privileges which are more largely concerned with the commercial processing, marketing and transportation of commodities en route. There is, for example, a "concentration-in-transit" privilege under which products, such as cotton, butter and eggs, dairy products, dressed poultry, lumber, may be concentrated at certain points for subsequent shipment in carload lots without sacrificing the advantage of through freight rates. The "compression-in-transit" privilege makes it possible to unload hay and straw at transit points for baling, and, cotton for compression. A "commercial elevation" privilege facilitates the unloading of grain at transit elevators, subject to protected through freight rates, for the purpose of mixing, bleaching, cleaning, drying, reconditioning, inspection, grading, sacking, storing and commercial weighing. Mention should also be made of the "barreling-in-transit" privilege under which oils are transferred from tank cars to barrels, drums or cases and subsequently reshipped without loss of through freight rates; of the stoppage-in-transit of many other commodities besides the grain referred to above, such as seeds,

beans and peas, wool and mohair, coffee, for inspection, grading, assorting, cleaning, drying, reconditioning, sacking, splitting, cracking or other commercial processing; of the dipping, disinfecting and drenching of livestock at transit points.

Some transit privileges involving no change whatever in the character of commodities are also granted by railroads. "Storage-in-transit" authorizing the unloading of commodities en route for the purpose of storage and subsequent reshipment under protected through freight rates has been granted to grain, seeds, peas and beans, sugar, wool and mohair, tobacco, coffee, fruits, broom corn, meats, dairy products, dressed poultry, coal and other commodities at various transit points. This privilege has indeed been extended to agricultural implements even though they are finished manufactures, and, to commodities imported via Pacific Coast ports from the Orient. The livestock industry has also been granted a "yardage-in-transit" privilege and the privilege of stopping shipments at transit points to test the market. Various commodities have been granted a stoppage-in-transit privilege under which carload shipments may be partially loaded or unloaded in transit without loss of through freight rates.

Administration and Regulation of Transit Services

All special transit services and privileges are governed by published tariffs, and in interstate commerce are subject to regulation by the Interstate Commerce Commission. In order to safeguard their use, definite rules, varying with each type of special service or privilege, have been formulated by the carriers and in some instances by the Commission. It is also necessary to "police" some of the special traffic arrangements. Much policing is performed by the weighing and inspection bureaus which the railroads have established as neutral or autonomous organizations for this and other inspection purposes in each of the major traffic territories of the United States.

Certain general principles that have been developed in Commission and court decisions are instructive although they do not constitute a complete rule for the measurement of all transit services and charges:

1. The right of a carrier to collect a special charge or fee in addition to the freight rate depends largely upon whether or not the service performed is properly regarded as a part of the regular line-haul and terminal services it is legally required to provide.

2. The collection of an additional charge for a transit service is optional with the carrier, that is, it may perform a transit service without imposing a separate charge, provided unfair discrimination does not result.

3. When a carrier exercises its option of collecting a special charge, such charge may not be unreasonable or unfairly discriminatory. Indeed, the transit services themselves as well as any charges that may be imposed in interstate commerce are fully within the scope of the Interstate Commerce Act.

4. There has been a tendency on the part of the Commission to emphasize the cost of service principle in its supervision of transit charges. Costs have not become an inflexible rule, but the Commission has on various occasions announced the general principle of establishing special charges on the basis of the costs incurred plus a reasonable profit. The Commission at one time attempted to limit reconsignment charges to the actual cost of service, but the United States Supreme Court held that the carrier is "entitled to receive some compensation beyond the mere cost for that which it does." [2]

5. The full extent to which the Interstate Commerce Commission is authorized to require transit services has not been determined with exactness. It has in some instances insisted upon the performance of a special transit service or the granting of a special privilege when it believed such arrangement to be justified by the conditions and needs of an industry or trade, but in the majority of its decisions concerning the establishment or withdrawal of such service or privilege, it has based its conclusions primarily upon the presence or absence of undue discrimination.

Not every transit service initiated by the carriers or requested by shippers is necessarily a desirable addition to the railroad freight service, but, when properly safeguarded, such services or privileges effectively supplement the regular terminal and line-haul services of the carriers. Those established voluntarily by the railroads are frequently regarded as methods of traffic development, but it is also being realized that legitimate traffic development may carry with it real benefits to commerce and industry. Special traffic services variously equalize competitive conditions, facilitate the marketing or distribution of commodities, stimulate and in some instances improve production, relieve congestion and

[2] Southern Railway Co. v. St. Louis Hay and Grain Co., 214 U.S. 297.

reduce shipping costs. They introduce a flexible element into the railroad freight service; they adapt the freight service as a whole more closely to the varying needs of commerce and industry. They are also a routing consideration to which industrial traffic managers should give their closest attention.

Protective Freight Services

Many shipments of perishable freight, particularly when carried long distances, require special protection against cold and heat. More than seven hundred railroads in the United States and Canada participate in a general "perishable protective tariff." The transportation of perishables in refrigerator cars is a special freight service in that it involves special equipment and special fast or expedited freight train services and also because the icing service performed in these cars is special in character. The transportation service is performed at the published freight rates applicable to the various kinds of perishable commodities, but a special icing charge is collected to cover the cost of ice and salt provided by the carriers. It is a stated charge per trip, the amount depending upon the number of re-icings required and the particular character of icing service performed. Chunk ice or crushed ice and salt are usually placed into bunkers or tanks, but green vegetables are sometimes shipped in ordinary freight cars and, in some instances in refrigerator cars, under a system of refrigeration known as "top icing," blocks of ice being placed on top of the vegetables. Perishable shipments may also be "precooled." Some perishables are shipped subject to a ventilation service. They are variously shipped in refrigerator cars without ice; in other cars equipped with ventilators but without ice bunkers or tanks; in insulated cars subject to special ventilation, or in ordinary box cars the side doors of which have been cleated or boarded open by the shipper.

Special provision is also made to protect perishables against cold. In many instances the shipper is obliged to provide car linings or false doors, and, if necessary, heaters and fuel and he may also provide caretakers to attend to the fires. Within "heater territory," which includes the more important points at which perishables are shipped and received, the carriers undertake to provide the necessary protection against freezing, subject to the regulations contained in their perishable protective tariff.

The practice of having shippers' attendants or caretakers travel with shipments as a means of protection is not limited to perishable fruits and vegetables requiring protection against cold. Caretakers are frequently sent with shipments of livestock, poultry, and commodities such as locomotives or locomotives and tenders or cars combined. Caretakers are required to sign special contracts releasing the carriers from liability for loss or damage to their person or property, unless caused by the negligence of the carriers or their employees.

Mention should also be made of the many special services, requirements, charges or allowances incident to the preparation of cars to accommodate special shipments. Shippers are, under the general rules of the consolidated freight classification, required to provide and install the stakes, blocks, braces, or other dunnage material and the lining, temporary flooring and temporary doors and bulkheads which may be necessary to the safe transportation of various commodities. The railroads not infrequently issue special tariffs in which, in definite instances, they undertake to provide the necessary protective material and to make installations. These special tariffs may further provide that, when in such instances the shipper provides the materials or does the work incident to installation, he shall be entitled to specified allowances. The carriers' tariffs may also specify that when the railroad furnishes material or does installation work for which the shipper is responsible, the shipper shall be required to pay special charges in addition to the freight rate.

Special charges against the shipper may also arise in the transportation of livestock. If the necessary bedding is provided by the shippers no special charge is collected, but if this service is performed for the shippers by the railroads special "bedding charges" are assessed, subject to such exceptions as are provided for in the carriers' tariffs. Special car cleaning, disinfecting and fumigation services may be required by public statute or regulation or may be requested by livestock shippers. Special charges in addition to the freight rates are collected by the carriers for such services and should it be necessary to clean and disinfect railroad stockyards, pens or chutes which were occupied by livestock infected with contagious diseases, the owners of the infected animals are required to reimburse the railroad. In case of quarantine all additional expenses of any nature incident to quarantine regulations are borne by the owners of the livestock.

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CHAPTER 7

Railroad Terminal Freight Services

Terminal facilities are as much a part of a railroad system as its lines, and the services performed at the terminals constitute an essential part of the freight service. Unless freight terminal facilities are adequate and are well managed, efficient car and train services are impossible; and if terminal operations are not performed economically, the operating economies that the carriers are now emphasizing must be seriously limited. The freight station is the point of physical contact between the carrier and the shipping public, while the location of terminals and the efficiency with which the terminal facilities are used limit the ability of a railroad to develop its tonnage. The first problem to demonstrate convincingly the importance of adequate freight terminals was the car shortage that formerly disrupted business and transportation, and when it became evident that terminal congestion was a primary cause railroads spent millions of dollars on terminal improvements. The importance of improved terminal services during more recent years was particularly emphasized by the loss of traffic to highway transportation.

Freight Terminal Facilities and Management

The railroad freight terminal facilities with which the shipper is most familiar are the freight stations and their appurtenances—the offices, freight houses, and loading and unloading platforms, team tracks, storage warehouses, livestock yards, the special facilities for various special classes of traffic, the wharves and wharf structures, and the other appliances that are maintained where freight is delivered and received. Strictly speaking, the loading and unloading facilities owned by the shipper also constitute parts of the freight terminal; not only his private sidings, but the extensive industrial railroads with which large industries are equipped, and all of the facilities for loading and unloading, switching, etc., that the shipper provides; and a freight terminal may, in addition, contain many facilities with which the shipper does not

come into contact. Transfer houses are in many instances provided for the transfer of L.C.L. freight and the final loading of cars for train movement. Terminal yards for receiving and delivering cars are essential freight facilities and at large terminals there may be a series of yards in which many necessary operating activities are performed.

At terminals where motor trucks are substituted for freight cars in the movement of freight within the terminals areas, the facilities used in performing terminal services also include trucks and in some instances trailers and tractors. Such facilities may be owned by terminal or trucking concerns, but they nevertheless constitute parts of the facilities upon which the railroad depends for the performance of its terminal services.

The business organization maintained at a large freight terminal is complex, as it may include numerous large and small freight and transfer stations. The terminal personnel includes the yardmaster and his assistants and clerks, the enginehouse foreman and his engine-house force, switching crews, switchmen, telegraph operators, car repair men, and others performing transportation, maintenance and mechanical duties in connection with the operation of the terminal as a whole. The Train Master supervises the condition of terminal and junction yards, and the functioning of the yardmasters. The Division Superintendent, under the prevailing divisional plan of operating organization, is the responsible executive of the entire division including line and terminal operation. In some instances, however, a specialized superintendent of a terminal division is placed in charge of a large terminal area as the local executive head. High executive officials too are concerned with terminal operation. General Superintendents supervise terminal as well as line operation throughout their respective grand divisions, and system or regional officials, such as the General Superintendent of Freight Transportation, General Superintendent of Transportation, General Manager and Vice President in Charge of Operation, may devote much attention to terminal construction and operation. The general staff of some railroads contains a special executive known as the Superintendent of Stations and Transfers.

General Terminal Freight Services

Many of the freight movements and other operating activities performed within railroad terminals are regarded as definite parts of the

regular freight service for which the shipper or consignee pays freight rates. Many indeed are performed within the railroad service rather than in the carrier's direct relations with the shipping public. Among such services are the movement of L.C.L. freight from freight stations to transfer houses in freight cars or motor trucks; the break-up of trains and classification of inbound cars; the make-up of freight trains of outbound cars; the transfer of cars through junction points, and all the switching operations performed directly in connection with this work; the making of yard repairs; the testing of air brakes; and the preparation of engines for service.

Various additional terminal services are of somewhat more direct concern to the shipper, but may also be classified as general in character in that they too are included in the general freight service and are covered by freight rates currently in effect. The practice of receiving and delivering L.C.L. freight and loading and unloading it at freight stations is a service of this kind. So also is the customary delivery of C.L. freight in cars, or the placing of empty cars on public team tracks, private sidings, or industrial railroads, subject, however, to limits as to the amount of free switching that may be demanded by the shipper or consignee. Short-time storage of freight at terminals either in freight houses or cars, within the free time periods set in the carriers' demurrage and storage tariffs, is a general terminal service for which no special charge is made. Weighing for billing and transportation purposes is a part of the regular freight service, for which no special charge is made except in case of certain contingencies that may arise when a shipper requests the reweighing of his freight. It is also a part of the carriers' general duty to see that freight cars are cleaned and put into condition to receive ordinary freight, but if special preparation of freight cars to fit them for particular classes of carload traffic is necessary the service is frequently regarded as a special terminal service for which additional charges may be imposed, or as a service that the shipper may be expected to perform as a part of his duties in connection with the loading of carload shipments.

As carload freight is customarily loaded by the shipper and unloaded by the consignee, any variation from this is considered a special terminal service for which the railroad may impose a special charge unless some unusual circumstance arises or some particular purpose is to be accom-

plished. Ordinary livestock unloaded at and reloaded at public stockyards has, however, been made a general exception to the customary practice.

Special Terminal Switching Services

The general switching services referred to above are to be distinguished from switching services performed in addition to the general freight service for which freight rates are customarily paid. When performing them the carriers may as a rule either absorb the special costs incurred or impose additional charges, subject to public regulation. When, for example, a car is to be placed on a private siding and the switching service incident thereto is more expensive than the switching movement to and from the carrier's public terminals, a special charge is sometimes imposed in addition to the freight rate; and if the railroad is requested to "spot" a car at more than one place on a private siding a special "car spotting" charge may be collected.

A special switching service is also performed when the railroad performing the inbound line or road haul service is requested to deliver the car within the destination terminal on the tracks of another line or on a private siding which cannot be reached directly over the track of the line-haul railroad. The switching service incident to the movement of the car within the terminal area from one line to another for delivery purposes is known as line-haul or interchange switching and unless a reciprocal switching arrangement is in effect, the line switching the car to its place of delivery is entitled to compensation. Its line-haul switching charge may either be charged against the shipment in addition to the freight rate or be absorbed by the line-haul railroad. The latter frequently occurs when active competition is encountered.

Freight originating within a terminal area and destined to another place within the same terminal area pays a switching charge. Switching of this kind, however, is the equivalent of local transportation and the switching charges collected from the shippers are in lieu of a freight rate. Such local switching may be either intra- or inter-terminal, depending upon whether the points between which the car is switched are located on one or more than one line.

Intra-plant or intra-mill switching involves a switching movement between places or locations all of which are within the same plant or industry. It is sometimes referred to as industrial switching. The in-

dustrial railroads which are operated by large industries and the tap lines that are owned and operated by lumber and timber concerns present some problems as regards rates. As a result of extended litigation in the courts and of proceedings before the Interstate Commerce Commission, such privately owned facilities are now divided into two major classes; they are common carrier industrial railroads and tap lines, or they are plant facilities. The former, which carry freight for other shippers as well as for the proprietary industries, or at least stand ready to perform a public service, have the standing of common carriers and may receive rate divisions out of the through freight rates upon shipments from points on an industrial railroad to destinations on a trunk line carrier. Or the industrial common carrier may insist upon performing the necessary switching service to and from junction points incident to delivery and receipt of freight cars and collect reasonable switching allowances from the connecting trunk line carrier. Conversely they may permit the trunk lines to perform such necessary switching services without being required to pay special switching charges in addition to the freight rate. When, however, the trunk line carriers are requested to perform switching services in and about the plant area in excess of car switching properly incident to the receipt and delivery of cars, the common carrier industrial railroads are receiving a special service for which special charges are usually collected. The plant facility industrial railroads, on the contrary, may not receive divisions out of through freight rates, nor may they insist upon performing the switching services necessary in delivering and receiving a car. They may, however, perform such services with the consent of the line-haul carriers and then receive reasonable switching allowances.

Lighterage and Floatage Services

When freight is lightered, situations somewhat similar to those referred to in connection with switching services arise. Lighterage and floatage services are performed at various ports within prescribed "lighterage limits," and within these limits there may be "free lighterage limits" where the railroads provide lighterage services either directly or through independent lighterage companies without imposing a special charge in addition to the railroad freight rate. Outside of the free lighterage limits, however, special lighterage charges are assessed, and the absorption of lighterage costs or charges within the free area does not

apply to all classes of commodities nor to all shipments. In many instances the railroad freight is removed from the cars for movement on lighters not equipped to carry cars; in other instances the loaded freight cars are moved on car floats. This car float service is sometimes performed in lieu of free lighterage service.

Trap or Ferry Car Service

A special terminal service is also performed when carriers deliver L.C.L. freight in cars on private sidings, and when they receive such freight in this manner. The general practice of requiring shippers and consignees to truck L.C.L. freight to and from stations is waived when a "trap car" or "ferry car" service of this kind is performed. The tariffs authorizing this service usually provide that no special charge will be collected in addition to the freight rate if a prescribed minimum amount of L.C.L. freight is being shipped or received.

Drayage or Cartage Services and Allowances

The use of trucks by railroads within terminal areas has become one of the outstanding developments of their terminal freight services. No special service arrangements or allowances are involved in those instances in which L.C.L. freight which is delivered at railroad stations by shippers is moved from these stations by the railroads in trucks to other freight stations or to transfer stations where it is loaded into freight cars for line transportation. Such trucks, whether operated by the railroads or by trucking firms under contract with the railroads, are merely used in lieu of freight cars.

Sometimes, however, a railroad will perform a drayage or cartage service or will pay a drayage allowance to consignees. When, for example, the consignee has been subjected to additional trucking expense because of an erroneous terminal delivery, he is entitled to an allowance to compensate him for any reasonable expense the error caused him to incur. Coastwise steamship lines not infrequently absorb cartage or drayage charges incident to trucking freight to their piers for through rail and water movement.

Mention should also be made of the practice of absorbing out of freight rates the drayage or cartage charges of terminal companies who perform special services in the receipt or delivery of railroad freight at points within a terminal area not reached by the tracks of the rail car-

riers. This has given rise to so-called off-track station and constructive station services. An "off-track" or "inland" station is a freight station which is not served directly by a railroad via its tracks. At St. Louis, for example, the eastern railroads which extend to East St. Louis some years ago arranged with a transfer company for the operation of off-track stations in St. Louis and the haulage of L.C.L. freight between these stations and their East St. Louis on-track stations. The railroads absorbed the charges of the transfer company out of the L.C.L. freight rates which applied to and from St. Louis. The transfer company also established "constructive stations" in St. Louis. Such stations are not physical properties at which freight is actually received and delivered. They are merely points in St. Louis which mark the limits beyond which the terminal company acts as an agent for shippers and consignees in the performance of a trucking service. A modified form of store-door delivery and pick-up service was therefore offered in St. Louis even before the Eastern carriers made their general store-door pick-up and delivery service applicable to shipments handled directly between their freight stations at East St. Louis and places of business located within the corporate limits of St. Louis and other nearby locations named in their tariffs.

Store-Door Delivery and Pick-Up Services

Store-door delivery and pick-up services are special services in that the customary manner of receiving and delivering L.C.L. freight has been at railroad stations. Although the wide extension of these services has occurred mainly during the last seven or eight years there have been instances dating back to much earlier periods. The Grand Trunk offered such services at certain American points as early as 1859 as part of the Canadian store-door pick-up and delivery service. From 1867 to 1913 limited store-door pick-up and delivery services were performed at Baltimore, and, from 1883 to 1913 at Washington, D. C., those services, however, being discontinued because of a finding of discrimination by the Interstate Commerce Commission. It should also be recalled that a modified service incident to the constructive station service referred to above has been performed at St. Louis for over thirty years. During the nineteen twenties experimental services were introduced by the Erie Railroad at New York and by the Boston and Maine at various New England cities. In Chapter 5, moreover, it was stated that forwarding

companies who consolidate L.C.L. shipments frequently perform store-door pick-up and delivery services.

Store-door collection and delivery services were later established at various points by individual railroads, but since the early 30's their extension has become general at many points throughout southwestern, western, southern and eastern or official territories. General uniformity has not been attained. Southwestern collection and delivery services, which were generalized in 1931, were based upon the principle that free services should be subjected to mileage limits in order to meet the competition of motor trucks for short-haul and medium distance traffic, and that a special charge in addition to the freight rate should be collected in case of long-haul traffic. The more common practice in southern, western and Official territories, however, subject to differences in detail, now is to perform such services on request of shippers or consignees regardless of mileage limits. In Official territory, for example, free pick-up and delivery services are offered to all L.C.L. traffic, except certain commodities, when the freight rate is 45 cents or more per 100 pounds. When the rate is lower, an amount equal to the difference between the freight rate and 45 cents is collected as a special charge. But the pick-up and delivery services are optional and when a shipper or consignee performs his own trucking service he is entitled to an allowance of 5 cents per 100 pounds.

The major objective of the widely adopted store-door delivery and pick-up services of the railroads has been the desire to compete more effectively with motor services for L.C.L. traffic. Many shippers and consignees find the L.C.L. freight service of the railroads faster and more economical than formerly. But the railroads also have in mind increased economy in the use of rail and motor facilities; quicker and less expensive handling of freight within terminal areas and reduced congestion; the possible reduction in the number or size of freight stations and their location in the less congested or more favorably situated parts of terminal areas; and the release of freight cars in so far as trucks are used to displace trap or ferry car services.

Loading or Unloading Carload Freight

When carload freight, other than ordinary livestock at public stockyards, is loaded or unloaded by a railroad a special terminal service is performed. In some instances there is some special reason why a rail-

road will assume the cost of loading or unloading carload freight, such as the desire to release needed equipment, to expedite traffic moving on car floats, barges or lighters, to clear congested tracks, or to fulfill its obligations under railroad export and import or domestic tariffs that apply to or from shipside. A carrier may impose a special unloading and loading charge when a car is held overtime because the consignee cannot accept delivery. The carrier may unload the car on his own premises and collect the actual cost of unloading or reloading in addition to a storage charge and the freight rate.

Terminal Storage Services and Charges

A warehousing or storage service is also performed at railroad terminals. It is in large part an enforced storage service for which storage charges are collected when inbound L.C.L. freight or C.L. freight unloaded from cars is held for longer periods than the free time authorized in the carrier's storage tariffs. The law requires carriers to afford a reasonable period for the removal of freight from railroad terminals and within the published free time no storage charge is collectable and the liability of the railroads as common carriers continues. After the expiration of free time, storage charges are collected according to governing tariffs and the carrier's liability is that of a warehouseman. In so far as the storage charges are intended to expedite deliveries and prevent congestion or freight accumulations they are similar to car demurrage charges, but railroad storage charges are also imposed as a source of revenue for a distinct warehousing service, which is a form of special terminal service performed for shippers or consignees when freight is stored on railroad premises for longer periods than the customary free time allowed in storage tariffs.

Most storage in railroad terminals is now governed by a uniform "Tariff of Storage Rules and Charges." This tariff, however, does not apply to freight stored in warehouses owned and operated by railroads as exclusively storage warehouses; to export or import freight at the ports; to domestic freight received from or intended for delivery to ocean or lake vessels at all but certain transshipment ports; to freight subject to lighterage; to carload lots of coal, coke or ore; to refused or unclaimed freight when held for the convenience of the carrier beyond legal requirements; or to L.C.L. freight at non-agency stations. Freight not susceptible to damage from the elements and not customarily han-

dled through freight houses, may be stored on vacant land of the railroads, awaiting shipment at owner's risk. This is known as "ground storage." It is granted either free of charge or subject to storage charges published in special ground storage tariffs.

Miscellaneous Terminal Services

Weighing for billing purposes, as was previously stated, is considered to be part of the carriers' general freight service and is usually included in the freight rate. When, however, the shipper or consignee requests reweighing and it is found that the carrier's original weight is not in error or the error does not exceed a prescribed amount known as "tolerance," a special reweighing charge is usually collected in addition to the freight rate. Railroad scales, moreover, are often used in performing weighing services for the general accommodation of shippers or consignees or for public use. In such cases a special service is performed, either free of charge or upon payment of special weighing charges.

Other special terminal services include the terminal grain elevation services performed at ocean and lake ports and at many inland termini of the grain-carrying railroads; the wharfage and freight-handling services performed by railroads at many ports either free of charge or subject to special charges in addition to the freight rate; the dumping of coal into vessels from piers and the trimming or leveling of coal in vessel holds; and the special services performed at the great public stockyards.

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CHAPTER 8

Railroad Freight Station Services and Billing

Although the freight station agencies of the Operating Department are primarily concerned with the physical handling and transportation of railroad freight, they also have many traffic and other commercial relations with the shipping public either directly or in conjunction with the Freight Traffic, Freight Development, Freight Claim, Accounting and Treasury Departments. The stations are the local points of contact between the shipping public and the entire business organization of a railroad. Stations vary everywhere from a one-man agency to the enormous terminal at which the agent is aided by a large staff of employees and clerks. There are also numerous small nonagency stations at which no agent is located, shippers being required to prepay charges on freight destined to such stations.

Some stations handle both inbound and outbound freight, while others handle only inbound or only outbound shipments. Some handle all classes of freight, while other stations serve only certain commodities such as grain, coal, lumber, or perishables. Both carload and less-than-carload freight can be handled at some stations while others are equipped only for carload or only for less than carload freight. Still other stations accept only freight moving to or from certain points or territories. Some stations are joint passenger and freight agencies.

Freight stations are provided for the receipt and delivery of freight, whether at freight houses, on team tracks or on private sidings. The studies of the Federal Coordinator indicated that, of the total car deliveries made, 32 per cent were made on freight house tracks, 10 per cent on team tracks and 58 per cent on industry tracks. Of the total L.C.L. car deliveries made, 95 per cent were made on house tracks including both freight deliveries made directly at freight houses and those subject to a store-door delivery service, and 5 per cent were made on other tracks. About 82 per cent of all carloads were collected or delivered on industry tracks.[1]

[1] Freight Traffic Report, Vol. II, page 75.

Transfer agencies are important parts of the freight operating organization but have no direct relations with the shipping public. Their primary function is to transfer L.C.L. freight from car to car so as to give a full loading to straight cars destined to particular stations, or to load some cars so that their contents may conveniently be unloaded in part at successive stations.

RAILROAD SHIPPING PAPERS

The principal shipping papers or documents employed in the railroad freight service are the following:

1. In discussing car distribution, reference was made to the ordering of freight cars by shippers of carload freight, through station agents, on prescribed forms or by telephone. The customary *car order* is arranged so as to indicate the number, size, and kind of cars desired, the date and hour when wanted, the kind of products to be shipped, and the destination and route of the shipment.

2. In shipping either carload or less-than-carload freight a *bill of lading* is prepared. As this is the principal shipping document in the business transaction between the railroad and shipper it has been the subject of much legislation and public regulation. The principal Federal statutes governing railroad bills of lading are the Bills-of-Lading Act of August 29, 1916, and the bill-of-lading and liability clauses contained in the Interstate Commerce Act.

The bill of lading is not only the legal contract between carrier and shipper, but is the freight receipt, the routing order, and the basic document in the settlement of freight claims; and, when made out to the order of the shipper, it is a negotiable document that is frequently used for the purpose of financial settlement. An "order" bill of lading is also an essential delivery document, because the carrier is prohibited from making delivery until the bill of lading is presented with proper endorsement. A "straight" bill of lading, which is made out directly to the consignee, on the contrary, is not negotiable and its presentation is not always required except to identify the consignee.

The uniform domestic railroad bills of lading now in general use are issued in distinctive colors and their contents have been standardized by the Commission. The straight bill is printed on white paper in triplicate —the "original bill of lading," which is signed by both the shipper and

the freight agent and goes to the shipper, the "shipping order" which is signed by the shipper and is retained by carrier, and the "memorandum" which is signed by both shipper and freight agent and is retained by the shipper for filing purposes. The original order bill of lading is printed on yellow paper, and the shipping order and memorandum prepared in connection with an order bill of lading, on blue paper.

The contract terms of the uniform domestic straight and order bills of lading now issued by American railroads are identical. They deal primarily with the liability of the railroads for loss and damage of freight. Railroads operating in interstate commerce are liable under certain conditions which are specifically stated. They are not liable for loss or damage caused by (1) acts of God, (2) the public enemy, (3) authority of law, (4) the act or default of the shipper or owner, or (5) material shrinkage. (6) After the expiration of the free time allowed in its tariffs, the railroad, moreover, is liable only as a warehouseman in case of loss, damage or delay caused by fire. (7) It is not liable for loss, damage, or delay occurring while property is held in transit upon request of the shipper, owner, or party entitled to make such request except in case of negligence on the part of the carrier or party in possession. (8) Nor is the carrier liable, except in case of negligence, where loss, damage, or delay results from a defect or vice inherent in the property shipped, or (9) from country damage to cotton, or (10) from strikes or riots. (11) The carrier is further exempted from liability for loss, damage or delay resulting from fumigation, disinfection, or other acts required by quarantine regulations or authorities. Other liability provisions of the uniform domestic bill of lading are: (12) those exempting the railroad in case of property destined to or taken from a station at which there is no regularly appointed freight agent; (13) the special clause governing documents, specie, or articles of extraordinary value not specifically rated in the carrier's classification or tariffs; (14) the special section applicable to explosives or dangerous goods shipped without previous full disclosure of their nature; and (15) the portion of Section 2 which provides that a carrier is not bound to transport a shipment "by any particular train or vessel, or in time for any particular market or otherwise than with reasonable dispatch," and that every "carrier shall have the right in case of physical necessity to forward said property by any carrier or route between the point of shipment and the point of destination." (16) The bill of lading contract in Section 2,

F. D. 2526 2000M 12-24-35 8½ x 7½

1 Uniform Domestic Straight Bill of Lading, Adopted by Carriers in Official, Southern, Western and Illinois Classification territories, March 15, 1922. as amended August 1, 1930.

UNIFORM STRAIGHT BILL OF LADING
ORIGINAL—NOT NEGOTIABLE

Shipper's No._____

Agent's No._____

THE PENNSYLVANIA RAILROAD COMPANY

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading.

*At*_____ *193*____ *From*_____

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its own road or its own water line, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.

(Mail or street address of consignee—For purposes of notification only.)

Consigned to_____

Destination_____ State of_____ County of_____

Route_____

Delivering Carrier_____ Car Initial_____ Car No._____

No. Pkgs.	DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	*Weight (Sub. to Cor.)	Class or Rate	Check Col.

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight."

NOTE—Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:

The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor.)

If charges are to be prepaid, write or stamp here, "To be Prepaid."

Received $_____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier

Per _____

(The signature here acknowledges only the amount prepaid.)

Charges Advanced.

$ _____

_____ Shipper

Per _____

Permanent postoffice address of shipper _____

_____ Agent

Per _____

_____

FORM 1

UNIFORM RAILROAD STRAIGHT BILL OF LADING

moreover, permits the limitation of the amount or sum for which the carrier is liable "in all cases not prohibited by law, where a lower value than the actual value has been represented in writing by the shipper or has been agreed upon in writing as the released value of the property as determined by the classification or tariffs upon which the rate is based. . . ."

Section 9 of the uniform domestic bill of lading applies in case a shipment is carried by water over any part of the route defined in the bill of lading. It includes all the exemptions to which carriers by water are entitled under the Harter Act of February 13, 1893, and other Federal statutes applicable to shipments by water and those usually embodied in the bills of lading issued by steamship lines.[2] If, however, the shipment is "being carried under a tariff which provides that any carrier or carriers party thereto shall be liable for loss from perils of the sea, then as to such carrier or carriers the provisions of this section shall be modified in accordance with the tariff provisions which shall be regarded as incorporated into the conditions of this bill of lading." The exemptions from liability accorded to transportation by water, moreover, do not apply to "lighterage in or across rivers, harbors, or lakes when performed by or on behalf of rail carriers."

Other contract terms of the uniform domestic bill of lading govern the time within which loss and damage claims should be made, and suits to recover loss or damage should be instituted; the cost incident to necessary cooperage; the compression of cotton bales; the delivery of grain in elevators; the storage in railroad or public storage warehouses of freight not removed within the free time permitted in the carriers' storage and demurrage tariffs; the disposal of unclaimed freight; the right of the carrier to collect freight and other lawful charges; the payment of freight charges by the consignor, owner or consignee, and the right of the carrier to require prepayment or guarantee of charges.

The Interstate Commerce Commission has also prescribed a "uniform livestock contract" which is used in lieu of the "uniform domestic bill of lading" in the shipment of livestock. Its contract terms are similar, except that they include a number of clauses made necessary by the special nature of livestock shipments and by the requirements of the law governing the transportation of live animals.

In shipping export freight the shipper may either bill it to the sea-

[2] See Chapter 35.

board on a uniform domestic bill of lading and there rebill it on an ocean bill of lading, or he may request the railroad to issue a through export bill of lading. The "uniform through export bill of lading" prescribed by the Interstate Commerce Commission is issued either in "straight" or "order" form, and, as far as the transfer and transportation of export cargoes are concerned, the bills apply through to the foreign port of entry or to the designated interior foreign destination. It requires the carriers to see to the transfer and handling of the export commodities at the ports, but it does not relieve the shipper of port cargo charges, nor does it hold the railroad and ocean carriers jointly liable for loss or damage.

The provisions of the export bill-of-lading contract are divided into three major parts, each of which, so far as liability is concerned, is virtually a separate contract. Part I, which applies to the shipment while in possession of the railroads carrying the export shipment to the port, is similar to the contract terms of the uniform domestic railroad bill of lading, special clauses, however, being included concerning the absence of railroad liability after delivery has been made at the port of export, the settlement of claims and the duty of the railroad to deliver the shipment to the vessel "as a part of its undertaking as a common carrier." The conditions imposed in Part II, which applies from port to port, are similar to those contained in ocean bills of lading.[3] All of its conditions apply to the export shipment, but complete uniformity is not obtained because any clauses contained in the individual ocean carrier's customary ocean bill of lading may be added if they are not inconsistent with Part II. Part III, which governs the shipment beyond the foreign port of entry, provides that the property shall be subject "exclusively to all the conditions imposed by the carrier or carriers completing the transit."

When a shipper elects not to ship subject to the terms of the uniform domestic or through export bills of lading, but instead requests that his shipment be accepted subject to the full liability imposed upon rail carriers by statute and common law, notation to this effect is made upon the former, and the shipper is usually required to pay railroad freight rates 10 per cent[4] higher than the rates that apply when shipments are made subject to the customary bill-of-lading conditions. When the

[3] For account of ocean bills of lading see Chapter 35.

[4] Subject to a minimum increase of 1 cent per 100 lbs.

1

(Uniform Domestic Order Bill of Lading, Adopted by Carriers in Official, Southern, Western and Illinois Classification territories, March 15, 1922, as amended August 1, 1930.)

F. D. 2534
8½x7½ 250 M 9-18-36

UNIFORM ORDER BILL OF LADING
ORIGINAL

Shipper's No._____

Agent's No._____

THE PENNSYLVANIA RAILROAD COMPANY

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading.

At_____ 193____ From_____

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its own road or its own water line, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.

The surrender of this Original ORDER bill of lading properly indorsed shall be required before the delivery of the property. Inspection of property covered by this bill of lading will not be permitted unless provided by law or unless permission is indorsed on this original bill of lading or given in writing by the shipper.

Consigned to ORDER of_____

Destination_____ State of_____ County of_____

Notify_____

At_____ State of_____ County of_____

Route_____

Delivering Carrier_____ Car Initial_____ Car No._____

No. Pkgs.	Description of Articles, Special Marks, and Exceptions	*Weight (Subject to Correction)	Class or Rate	Check Col.

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight."
NOTE—Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding.....per.....

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of consignor)

If charges are to be prepaid, write or stamp here, "To be Prepaid."

Received $.....
to apply in prepayment of the charges on the property described hereon.

Agent or Cashier

Per.....
(The signature here acknowledges only the amount prepaid.)

Charges Advanced:

$.....

.....Shipper

Per.....

.....Agent

Per.....

Permanent postoffice address of shipper.....

FORM 2

UNIFORM RAILROAD ORDER BILL OF LADING

United States Government ships freight the railroads issue a "government bill of lading" which contains numerous special conditions and instructions.

3. *Bonds, releases,* and *guarantees* constitute a third group of shipping documents of direct concern to the shipper or consignee. A bond of indemnity may be required when railroad freight is delivered without presentation of the bill of lading, and also when a freight claim is filed by a claimant who is unable to submit the original bill of lading. In case of shipments on which freight and other charges are to be prepaid or guaranteed, the shipper may be requested to sign a "guarantee." When the freight rate is based specifically upon an agreed or declared value, the shipper is required to sign a "release." Formerly a separate "release" document was prepared, but it is now customary to enter releases on the regular bill of lading and shipping order.

4. Upon the arrival of railroad freight at its destination a *notice of arrival* is sent to the consignee. On some lines it is customary to send out "mailing cards" at certain points immediately upon the arrival of the freight, and notice of arrival may also be served by telephone in case of special arrangement with the consignee. The general practice, however, is to send a *notice of arrival* on forms provided especially for that purpose. The freight agent at destination also prepares a *freight bill* which, upon payment of all amounts due the carrier, is signed by the agent or station cashier and serves as a receipt to the consignee. When freight is delivered the consignee is requested to sign a *delivery receipt.* A less common practice is the so-called "unit billing" system under which these shipping papers and also the waybill are made out on sheets of the same size and general form and are prepared on a typewriter at one writing at the point of shipment. When freight is prepaid a distinctive *prepaid freight bill* is prepared at the shipping point, or the regular freight bill is stamped with the word "paid." When credit is granted to shippers or consignees, it is customary to prepare a *statement of freight bills* for each concern. Credit transactions are now regulated by the Interstate Commerce Commission and are limited to periods of time authorized by the Commission.

5. Other important shipping papers of direct concern to shippers and consignees are the standardized forms used in filing loss, damage, and overcharge freight claims; and the additional papers required in case of export and import shipments, referred to in Chapter 35. Special

forms are also variously used in connection with demurrage and many of the special freight services described in Chapters 6 and 7.

BILLING AND FREIGHT HANDLING OPERATIONS AT FREIGHT STATIONS

Billing and freight-handling methods vary at different stations in accordance with the general policies of different railroads and the business organizations maintained at particular freight agencies. The most common practice is to have all essential billing and freight-handling operations performed at all freight stations, but efforts have been made on some railroads during the past few years to consolidate certain billing and accounting operations for groups of stations and also to transfer some station accounting work directly to the Accounting Department.

FREIGHT STATIONS PERFORMING ALL ESSENTIAL FUNCTIONS

A large freight agency may subdivide its functions between a freight house or platform organization and an office or clerical staff. The latter frequently includes a general office, a cash department, a rate and way bill department, a station accounting department, a cash department, a claim department, and a car record and demurrage department. The number of station departments maintained in addition to the freight house or platform department, however, varies and the policy at some stations is not to recognize distinct clerical departments.

At a large station the handling of freight at the freight houses is usually supervised directly by a general and an assistant general foreman. As shippers present outbound bills of lading and shipping orders the papers are checked by route clerks as to routing instructions, and, in case of unrouted freight, proper routing instructions are indicated, and proper loading classification numbers are also marked on shipping orders. Receiving clerks check the documents against the freight received at the freight house, affix on the bill of lading the agent's stamp and their own initials, return it to the shipper and arrange the shipping order for use by trucking gangs and tallymen, or checkers. Weights are determined, the freight is loaded into freight cars, and messengers carry the shipping orders from the tallymen's desk to the station's rate

PLACE SPECIAL SERVICE PASTERS HERE

DESTINATION—FOR AUDITOR
(TO TRAVEL WITH SHIPMENT)

A. D. 5336
8½x11 400M 4-16-56

620 THE PENNSYLVANIA RAILROAD 620
LOCAL FREIGHT WAYBILL

TO BE USED FOR SINGLE CONSIGNMENTS, CARLOAD AND LESS CARLOAD—LOCAL ONLY

Freight Bill Date _____ 193

STOP THIS CAR AT / FOR	WEIGHT IN TONS: GROSS	NET	LENGTH OF CAR: ORDERED	FURNISHED	MARKED CAPACITY OF CAR: ORDERED	FURNISHED	STENCILED WEIGHT OF CAR

CAR INITIALS AND NUMBER	C.L. TRANSFERRED TO or L.C.L. LOADING No.	DATE	WAYBILL NO.

TO	STATION	STATE	FROM	STATION	STATE

RECONSIGNED TO	STATION	STATE	FULL NAME OF SHIPPER, AND, FOR C. O. D. SHIPMENTS, THE STREET ADDRESS

AUTHORITY

ROUTE (Show each Junction and Carrier in Route Order to Destination of Waybill)	Show "A" if Agent's Routing or "S" if Shipper's Routing	ORIGIN AND DATE, ORIGINAL CAR, TRANSFER FREIGHT BILL AND PREVIOUS WAYBILL REFERENCE AND ROUTING WHEN REBILLED.

CONSIGNEE AND ADDRESS	WEIGHED
	AT
FINAL DESTINATION AND ADDITIONAL ROUTING	GROSS

INSTRUCTIONS (Regarding Icing, Ventilation, Heating, Milling, Weighing, Etc. If Iced, Specify to Whom Icing Should be Charged.)	TARE ALLOWANCE NET

Indicate by symbol in column provided ✱ how weights were obtained for L.C.L. Shipments only.
R—Railroad Scale. S—Shipper's Tested Weights. E—Estimated—Weigh and Correct.
T—Tariff Classification or Minimum.

DESCRIPTION OF ARTICLES AND MARKS	Commodity No.	✱	WEIGHT	RATE	FREIGHT	ADVANCES	PREPAID

(1ST) TRANSFER	(2ND) TRANSFER	(3RD) TRANSFER	Destination Agent Will Stamp Herein Station Number and Name, Date Reported, Freight Bill Number and Amount.

JUNCTION AGENTS' STAMPS AND ALL YARD STAMPS TO BE PLACED ON BACK OF WAYBILL.

620 THE PENNSYLVANIA RAILROAD 620

FORM 3

LOCAL FREIGHT WAYBILL

and billing department. Men are also employed at the freight house to clean cars, repair or reinforce packages of freight, tag or card outbound cars containing certain kinds of freight, close car doors, seal cars and prepare seal records; and stations handling outbound carload freight loaded by shippers employ men to perform the necessary outside duties incident to such shipments.

Inbound freight is handled similarly at the freight house and some employees are frequently shifted from one class of business to the other. Delivery clerks require consignees to sign the delivery receipts, which are prepared in the station accountant's office, and they make notations upon the delivery receipts in case of known shortage or damage. Upon receipt of evidence that amounts due have been paid or satisfactory arrangements have been made with the station's cash department, they issue delivery permits which enable consignees to obtain possession of their freight. Meanwhile, tallymen or checkers, and trucking or unloading gangs unload the freight, check it against the delivery receipts or inbound waybills, and prepare check reports that are sent to the agent's notice clerks for use in the final preparation of arrival notices. Provision is also made for the opening of car doors, the taking of car seal records, the piling of inbound freight in assigned places awaiting delivery, the actual physical delivery to consignees who present delivery permits, and for warehousing freight. Yard clerks may be employed to make delivery of inbound carload freight direct to consignees at private sidings or on public delivery tracks, to obtain a delivery receipt, and to keep a record of car seals.

Shippers and consignees, however, have direct dealings with the agent's office as well as with the freight house organization, and the office organization also performs waybilling, accounting, and other necessary agency work. The agent's rate and billing department [5] quotes rates to shippers and consignees; receives shipping orders from the freight house for the purpose of determining correct freight classification and freight rates, and of checking junction points and the block numbers that were assigned for loading purposes; advises other agency departments concerning freight rates and classification; and prepares outbound waybills and waybill abstracts or reports.

The *waybill* is one of the principal documents required by railroads for their own use in freight transportation. A waybill is made out at the

[5] Separate rate and billing departments may be maintained.

forwarding freight station for each carload of freight and as many waybills as may be needed are prepared for L.C.L. freight loaded in any one car. Separate forms may be used for local and interline shipments and also for particular kinds of freight or freight services. The waybill is a basic freight revenue accounting document needed by the railroad's Accounting Department; it serves as a check against freight unloaded from cars, and contains the data upon which delivery receipts, freight bills, and arrival notices are based at the delivering station, and it is the Operating Department's official car routing document. When the regular waybill is not completed in time to be forwarded with the freight car a "card waybill," "slip bill," or "car ticket" is prepared for the train conductor and the waybill is later forwarded by train mail to the delivering freight agent.

The agent's accounting department is charged not only with keeping the station's freight record books and with accounting work such as the preparation of station balance sheets, consolidated records, summaries, etc., but also frequently performs other essential station activities such as the sorting of inbound waybills, verifying their classifications and freight rates, making corrections and checking calculations, preparing freight bills, arrival notices, delivery receipts, bills covering demurrage, storage and special freight charges, waybill abstracts or reports, correction and adjustment notices, and abstracts of miscellaneous freight revenues.

The agent's notice clerk, who may be included in the accounting staff or may report direct to the agent's chief clerk, compares the arrival notices received from the accountant's transcribing clerks with the check reports received from the inbound freight house, adjusts discrepancies, if possible, and mails the notices to the consignee. By special arrangement the consignee may also be notified by telephone.

The duties of the agent's car record clerk vary at different stations. Car record clerks may prepare station car records, and compute demurrage and prepare demurrage bills, but at some stations demurrage work is performed by separate Demurrage and Storage Bureaus. The car record clerks may send out the special notices required under certain conditions by the carriers' demurrage rules and weather reports may be prepared. They may prepare waybill envelopes and card waybills, give directions as to the placement of cars at freight houses or on team tracks and private sidings, inform delivering agents as to the weights of cars

forwarded on card waybills that do not show weights, and perform other duties assigned to them by the agent.

The agent's cash department collects freight charges on outbound and inbound shipments; acknowledges receipt of payments; makes payments in case of overcharges adjusted directly at the station; prepares bank deposit slips and the cash reports and makes cash deposits; reports delinquent credit accounts; sends statements to the station accountant; and keeps the station's cash book. Other duties may also be performed, such as the preparation of statements of freight bills for concerns to which credit is extended, and the administration of United States customhouse routine.

The agent's claim department usually has charge of over, short, and damage reports, freight claims, claim briefs, tracers, reports of stolen freight, and other station work incident to freight claims. The claims received from shippers or consignees are forwarded to the railroad's Freight Claim Department for adjustment.[6] A freight agent's office organization may also include time and tonnage clerks and a supply clerk, filing clerks, general clerks, stenographers, watchmen, janitors, messengers, etc. A chief clerk is usually provided to assist the agent at a large freight station in supervising his office organization, and provision may also be made for the employment of an assistant chief clerk. At stations where definite departments are recognized, each department of the agent's office organization is usually under the immediate charge of a head clerk such as the head waybill clerk, the station accountant, the head cashier, and the head claim clerk.

CONSOLIDATED RATING, BILLING AND ACCOUNTING BUREAUS

In an effort to provide a more economical method of rating, billing and accounting at freight stations, the Pennsylvania Railroad has divided its lines into zones within each of which a Consolidated Rating, Billing and Accounting Bureau has been established. Each bureau does much of the clerical work for all, except certain small out of town freight stations located within its zone. Small out of town stations, where convenient freight and passenger train services are not available for the prompt forwarding of necessary documents, are not included; and, in

[6] See Chapter 3.

case of cars destined to move over connecting lines and also instances of local shipments where the bureau cannot complete the waybills in time to be forwarded with the shipments, the necessary station work continues to be done at each freight station.

The consolidated bureau of New York, which has charge of certain station work for the entire New York division of the Pennsylvania Railroad and for the Long Island Railroad, is managed by a freight agent and assistants who are in charge of a stenographic bureau, a rating and billing department, an over, short and damage department, accounting department and a pick-up and delivery division. Associated with this consolidated rating, billing and accounting bureau there is also a "revision bureau" which is under the jurisdiction of the railroad's Accounting Department. This revision bureau was established primarily for the purpose of eliminating and correcting errors in rating or billing, thereby making it possible to present correct freight bills to patrons and of avoiding subsequent corrections and adjustments. After shipping orders and waybills have been checked for corrections and the waybills have been stamped by the revision bureau, no further revision is deemed necessary, other than the final test checking which takes place in the company's Accounting Department.

The rating, billing and accounting work of the freight station is simplified and reduced in amount, but is not eliminated entirely. Freight stations are required to prepare specified daily and monthly reports or abstracts, keep a cash book, do necessary station work incident to damaged, lost, stolen, refused and unclaimed freight and freight claims, and any other accounting or documentary work which it is impossible or inconvenient to transfer to the Consolidated Rating, Billing and Accounting Bureaus or to the Accounting Department. The work of the freight stations has, however, been so simplified and reduced that the office personnel at stations is organized quite differently than at stations where all station work is performed locally. The office personnel at large freight stations, under the consolidated bureau plan, usually includes a general department, a carload department, an L.C.L. department and a cash or accounting department.

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CHAPTER 9

Railroad Freight Traffic Solicitation and Development

Among the most important functions of the general traffic departments of railroads are the tasks of the solicitation or selling of the services of the carriers in competition with the services of rival railroads or other competitive carriers, and that of attracting to the territories or communities served by the respective carriers industries which will receive and ship goods from or to points served by the carriers or their connecting lines. The task is first to obtain and retain a favorable share of existing traffic in face of competitive opposition, and second to increase the volume of traffic shipped to or from points located on the railroads' lines.

Railroad Solicitation Organizations

The work of railroad traffic departments is selling the services of the carriers to actual or prospective shippers or consignees. It may be said that all of the functions of the railroad traffic departments—including rate making, tariff publication, the establishment of bases of divisions of joint through rates among connecting carriers, and even the handling of loss, damage and delay claims, which is part of the work of some railroad traffic departments—are related to and parts of solicitation and traffic development.

Because of the importance of solicitation, this phase of railroad traffic work is usually under the direct supervision of one of the high freight traffic officials. Often the head of the traffic department organization, the Vice President in Charge of Traffic, assumes responsibility for the determination of the broad solicitation policy of his railroad, subject, of course, to the control of the President and the Board of Directors. The responsibility for freight traffic development and solicitation usually is placed upon the Freight Traffic Manager, who may have an Assistant Freight Traffic Manager who specializes in solicitation. Subordinate to this general supervisory officer are the General Freight Agents, the Assistant General Freight Agents, the Division Freight Agents, the

General Agents, the Commercial Agents, the Traveling Freight Agents, the City Freight Agents, the Soliciting Freight Agents, and the Freight Representatives who make up the personnel of the solicitation organization. In some cases these men are stationed at the general offices of their railroads, and from these headquarters maintain their contacts with shippers and consignees, brokers, factors, jobbers and commission merchants in and near the cities which contain the railroads' general offices. In other cases, General or Assistant General Freight Agents or Division Freight Agents with their respective staffs of Traveling and Soliciting Freight Agents and Freight Representatives are located at the important cities where regional or divisional headquarters of the railroads are located. In still other instances, General or Assistant General Freight Agents, or General or Commercial Agents, or District Freight Agents, assisted by Traveling, Contracting, City or other Freight Agents or Freight Representatives, are located in important cities and canvass territories at some distance from the lines of their railroads. The so-called "off-line" offices are sometimes a thousand miles or more from the nearest points served by their respective railroads. The representatives of the "off-line" traffic organization solicit shippers and consignees and work with their connecting rail lines in securing for their lines parts of through routes as originating, intermediate or delivering carriers. In addition to the work of soliciting general freight traffic, certain railroads have specialized solicitation organizations for the development of special traffic in which the roads are particularly interested, such as import and export traffic, coal and coke traffic, live stock, perishable fruit and vegetable traffic, and other special types of freight. The representatives of these specialized solicitation organizations cover the water-front, import and export houses; dealers in and users of coal and coke; live stock raisers, commission merchants, and stock yards; the growers, dealers, and merchants in the perishable fruit and vegetable trades and the markets in which these products are bought and sold; and traders and exchanges dealing in other special commodities.

The railroads often own and operate or are closely related to facilities for the handling, storage and distribution of these special commodities, and the special solicitation representatives must keep closely in touch with the agents and railroad, shipper or consignee representatives at the wharves, piers, stock yards, elevators, warehouses and produce terminals.

Railroad Solicitation in the Past

Prior to the enactment of Federal and state statutes regulating railroad rates, requiring the publication and adherence to tariffs, forbidding rebates, and prohibiting unjust and unreasonable discrimination and unjust preference, the most potent competitive weapons of the carriers were rate reductions, special rates and rebates. Competition was largely, but not always, price or rate competition, not only among railroads but among all forms of transportation. Competition, since the advent of public regulation has tended toward service competition. Rate competition has not ceased to be an important factor, but it has changed in nature.

Because the railroads have been required or have chosen to abandon or modify some of their earlier competitive methods it does not follow that efforts to develop freight traffic have been relaxed. Extensive traffic and development forces are maintained by every large railroad system,[1] and few steps are taken in the adjustment of freight charges, in the adoption of improved freight services, in the making of interline traffic arrangements, or in the expenditure of funds for construction, improvements, extension or consolidation of carriers' properties without considering their probable effect upon traffic.

Rate-Making and Traffic Development

The fixing of the general level of freight rates under the rule of rate-making of the Interstate Commerce Act by no means precludes the adjustment of rates with reference to their effect upon freight traffic. When the general level of freight rates was reduced by order of the Interstate Commerce Commission in 1922, one of the considerations to which much attention was given was the stimulating effect that a general reduction would probably have upon American business and consequently upon the volume of railroad freight traffic. Again, when freight rates were increased in 1935 and in 1938 the probable results of the increases upon volume of traffic were considered by the carriers and by the Interstate Commerce Commission. The rule of rate-making, moreover, does not obviate the necessity of making individual rate adjustments and of establishing and maintaining territorial rate structures. Rebates and other personal rate favors and also unfair discrimination

[1] See Chapter 3.

between different places and classes of traffic are prohibited by law, and both individual freight rates and rate structures are subject to public regulation; but the effect of rates upon traffic still remains an important rate-making factor. The purpose of this chapter is not to discuss rate-making, but to indicate briefly how freight rates are now utilized to develop traffic.

Instead of cutting rates, paying rebates or otherwise offering what are now considered unfair advantages in order to obtain traffic, the railroads now make freight rates to promote traffic not secretly but openly, and general rather than special action is taken. Many commodity rates lower than the prevailing class rates are made not only because lower costs of service may in some instances make such rates possible, but also because the lower rates may stimulate traffic. Joint rates and proportional rates that apply to interline shipments, and which usually are lower than a combination of local freight rates between the same points are often established partly to simplify the quoting of rates but more to facilitate interline traffic movements. The differential rates authorized via circuitous routes by rail or rail-water, and by other routes that cannot compete without a favorable rate adjustment, may be justified by service differences or lower cost of service, but the primary purpose of differentials is usually to enable the longer routes to obtain a fair share of the total available traffic. The export and import railroad rates now in effect between interior points and many of the ocean ports of the United States and Canada were established primarily for the purpose of equalizing the competition of rival ports and inland transportation routes, and of distributing the available export and import traffic among the several ports and routes. The adjustment of railroad freight rates, so far as the Interstate Commerce Act and the Interstate Commerce Commission will permit, for the direct purpose of enabling the railroads to compete against rival water and motor carriers for competitive traffic is another example of the general relationship between rates and traffic development. So, also, is the common practice of so fixing the railroad rates of rival producing districts and rival markets as to enable the sections to compete and to provide traffic for the carriers serving them. One of the basic principles of rate-making is that freight rates must be made "so as to move the traffic," and the purpose is not merely to move existing traffic but also to develop business so as constantly to increase the volume of future traffic. The goal sought is to develop and

retain for each railroad the volume of freight traffic which will yield it the maximum net return.

The railroads now give increased attention to improved freight services as a means of developing traffic; they are competing in services as well as in rates, although rate competition, it should be stressed, is still an important solicitation factor. Rates are not always the same via different routes. The carriers are somewhat less free to adjust rates with reference to traffic considerations than they have been in the past, because the Interstate Commerce Commission has tended in recent years to emphasize the cost-of-service principles of rate-making or at least to attempt to ascertain apparent costs as a major factor to be considered in rate-making.

Traffic considerations are not ignored and cannot be disregarded by the Commission, but its general regulatory policies naturally limit the discretion of the carrier's traffic officers.

Services as Solicitation Factors

Much of what has been said in earlier chapters concerning freight services is pertinent in this connection. The establishment of expedited services for many kinds of freight, the increasing number of through package cars for L.C.L. traffic, the attention that is being given to motive power and to freight equipment including specialized cars and improved facilities, the expenditure of large sums on terminal improvements, the construction of private sidings, the offering of many special freight services and privileges and advantages, these have become the most important sales promotion assets of railroad traffic solicitors.

Freight Solicitation

The railroads are not content to wait until the shipping public becomes aware of the rates and service advantages of different routes as compared with their competitors. In addition to the solicitation personnel discussed above, the freight station agents of the operating department, directly or in cooperation with the traffic department, are also expected to solicit traffic, and the traffic departments of many railroads now encourage cooperation on the part of all railway employees with whatever departments they may be connected. In some instances traffic is also solicited by railroad-owned "fast freight lines."

Different railroads have diverse advantages of a rate or service nature

to offer their patrons and these competitive advantages are urged by the solicitors in order to obtain traffic. The advantages include:

(1) Relative directness of routes from sources of supply or to markets
(2) Faster speed in transportation
(3) Special, transit, or terminal freight services
(4) Available terminal freight handling facilities
(5) Location of terminal facilities adjacent to places of business of shippers or consignees
(6) Absorption of switching charges for switching services at points of origin or destination available via certain routes
(7) Availability of needed or desirable types of freight cars
(8) Lower cartage charges or free collection and delivery services
(9) The reduction or elimination of the transfers of goods from car to car en route
(10) The availability of perishable protective services in order to insure arrival of freight in good condition
(11) The availability of auction market facilities at certain terminals to sell goods at auction
(12) The record of the carrier in transporting goods of the type to be shipped without loss or damage or delay
(13) The record of the carrier in paying lawful loss, damage and delay claims
(14) The favorable total charges of transportation including all terminal, line-haul and special charges via one route as compared with another

The success of a railroad's traffic soliciting forces, however, does not depend entirely upon the possession of freight-rate or freight-service advantages. Traffic officials and solicitors are frequently able of themselves to perform services that will gain the good will of shippers or consignees. They keep patrons informed as to current changes in freight and other charges, and in routes, shipping rules, railroad and steamship services, and such related matters as advantageous markets, sources of supply, and marketing methods and practices. They cooperate with steamship companies and port authorities, and perform such services as the booking of cargoes, quoting ocean rates and arranging for transfer and warehouse facilities. In some instances Foreign Freight Agents have endeavored to promote foreign trade by acting as sources of information concerning customhouses or consular regulations, export packing, steamship services, market conditions and methods of exporting.

Occasionally the civic interest of a community in a particular railroad

may facilitate traffic solicitation. Frequently, moreover, the purchase of rails and other materials and supplies from industrial concerns by the Purchasing Department of a railroad will influence the routing of many shipments.

There is of course a large personal factor in the equation of traffic solicitation, just as there is in the sale of a commodity. The character, ability and personality of the traffic solicitor are apt to influence the shipper or the consignee, either one of whom may decide what railroads they will favor. The shipper, as has been explained, has the power to issue binding routing instructions, subject to the limitations referred to in the preceding chapter, and the consignee, likewise, because of his influence as a customer, is frequently able to enforce his wishes with respect to the routing of shipments billed to him.

Traffic Arrangements with Connecting Carriers

Railroads are now less able than formerly to make traffic arrangements or agreements with connecting carriers as to interchange of traffic. Railroads are not allowed to route disproportionate amounts of traffic over favored connections. The Interstate Commerce Act empowers the shipper to route his shipments and requires the railroads to observe his instructions. The law also prohibits unfair discrimination between connecting lines in the distribution of unrouted freight. Connecting railroads may, however, establish through routes and joint rates, and such action may give the lines that are parties to the joint tariff a traffic advantage over routes not covered by joint rates but the extent of such advantage is limited by the power of the Interstate Commerce Commission to establish additional through routes and joint rates.

Having established a through route, the interested lines, moreover, may solicit traffic through their respective off-line or on-line agencies or through "fast freight line" agencies for the purpose of including shippers to route via a particular through route. Although the railroads may not discriminate unfairly between connecting lines in the distribution of unrouted freight, shippers are permitted to route their shipments over whatever available through routes they may prefer.

The railroads may enter traffic arrangements with domestic steamship lines but they are not permitted to make exclusive or preferential agreements. The Commission may establish through rail-water routes and joint and proportional rates in interstate commerce in addition to any

that the carriers may voluntarily establish, and it may order the making of suitable physical connection between rail and water lines. The exclusive traffic agreements that railroads at one time made with favored ocean carriers in the foreign trade have been prohibited by law, and if a railroad enters into traffic arrangements with ocean carriers the Commission has been authorized to require it "to enter into similar arrangements with any and all other lines of steamships operating from said port to the same foreign country."

The railroad ownership or control of coastwise and Great Lakes steamships, with which the owner does or may compete was prohibited in 1912.[2] This law does not, however, entirely prevent railroads from operating steamship services as a means of developing traffic. The primary purpose of the law is to prevent the railroads from curbing water competition. The extension of a rail carrier's service by means of shipping lines to markets not reached directly by its own railroad line excepting through the Panama Canal where the prohibition of railroad ownership or interests in vessels is absolute, is not prohibited; and even when a railroad-owned steamship line operates over a route that is or might be in competition with the railroad, the Commission may grant permission if it finds that competition is not prevented or excluded, that the steamship line is being operated in the interest of the public, and that the continued ownership by the railroad is "of advantage to the convenience and commerce of the people."

Industrial, Agricultural and other Development Work

Many railroads distinguish between freight traffic solicitation and the development or creation of new traffic, and have appointed Industrial Agents, Agricultural Agents or special traffic officials otherwise designated for the express purpose of encouraging production in the territories served by their lines. As was stated in Chapter 3 some railroads have created comprehensive Industrial, Agricultural, or Development Departments, while other railroads employ development officials within the Freight Traffic Department.

Industrial work is primarily concerned with the locating of factories, mills, or other manufacturing enterprises on the lines of particular carriers. An Industrial Department is to some extent a statistical and research bureau supplying the Industrial Agents with the data needed in

[2] Panama Canal Act, 1912, see Chapter 42.

their efforts to attract industries. Inquiries are constantly being received by the department concerning sources of raw material, population and labor supply, living expenses, taxes, banking facilities, fuel and water power, warehousing facilities, private sidings, terminal facilities, freight charges and services, available markets, and other factors that may influence the location of prospective enterprises.

The effectiveness of industrial development work depends in a large measure upon cooperation on the part of other departments. Prompt information concerning freight rates and other charges is obtainable from the Freight Traffic Department, and the recommendations of the Industrial Department concerning rate changes are given prompt attention, though not necessarily accepted. Information relative to freight services may be secured from the Operating and Freight Traffic Departments. When a private siding is desired the Engineering and Operating Departments are consulted. Analyses of ores and minerals are obtained from the Geologist, who is sometimes attached directly to the Industrial or Development Department, although in some cases separate departments are maintained by railroads which are large carriers of mineral traffic. Freight claim information is obtained from the railroad's Freight Claim Department; information concerning real estate owned by the railroad from its Real Estate or Land Department; legal advice from the Law Department. Valuable information and reports are sometimes received from the Freight Station Agents and traffic solicitors. Although the function of the latter is primarily that of traffic solicitation, all of them are requested to be alert about anything that may increase the carrier's traffic. The off-line agencies of the Traffic Department, at many points, are the only permanent off-line offices maintained by a railroad.

Agricultural development work consists, in part, of efforts to encourage settlement on farms. Special railroad Immigrant Agents, Land Agents or officials that are otherwise designated connected with the Freight, Passenger, Development or other departments, are in some instances placed in charge of this form of agricultural development work. Prospective settlers are variously urged by means of advertising, by operating special colonist trains at low fares and by personal salesmanship, to acquire railroad, government, or private agricultural land.

Agricultural development work is also concerned with increasing production on farms that are already occupied. Railroads cooperate with

agricultural colleges and experiment stations by operating agricultural trains containing exhibits of farm products, pests, machinery and tools, and supplies of printed information. Lecturers from the colleges accompany the exhibition trains. The railroads also assist in making exhibits at county fairs and other agricultural exhibitions; and in running demonstration farms. Some railroads have educated farmers as to improved methods of marketing, packing, and loading farm products. Agricultural agents have in some instances assisted in marketing farm products by advertising, by preparing lists of growers and local shippers for the information of central market trade agencies, by locating buyers for the growers, and by making arrangements for the inspection of shipments; and there are instances of the Agents' selling farm products in particular markets. Dairy agents at times facilitate the marketing of milk and cream by putting dairymen in touch with central market dealers or other buyers, and by inducing the Operating Department to provide an improved transportation service.

During periods of drought, flood or other disasters the railroads have cooperated with state and Federal governments in relief work and in moving cattle to more favorable grazing areas, transporting supplies to the stricken areas, and otherwise assisting in alleviating suffering and hardship.

Freight Traffic Advertising

Methods of developing railroad freight and passenger traffic have in the past differed in that the former depended almost entirely upon the personal efforts of a soliciting and development staff, while the latter relied primarily upon advertising. Mention has been made of occasional advertising by industrial and agricultural agents to obtain freight tonnage, but such uses of advertising were exceptional and freight solicitation was rarely done by advertising other than by the publicity campaigns conducted by the Passenger Traffic Department. Passenger traffic advertising has long been an accepted practice, but freight traffic advertising was generally neglected. This difference in practice was due to the belief that the volume of passenger traffic, particularly of pleasure travel, readily responded to skillful advertising, while freight traffic was believed to be so definitely related to the general state of business prosperity that little or nothing could be done to develop new traffic or to increase the total available tonnage of freight. The opinion

has prevailed that the only effect of freight traffic advertising would be the diversion of tonnage from one route to another, and that, if all the railroads advertised for this purpose, the final results would be much the same as if none of them had done so.

Recently, however, various industrial and agricultural agents have provided convincing evidence that much can be done by advertising to develop new freight tonnage, and numbers of railroads now also use advertising as a means of soliciting freight. There has been some institutional advertising of railroads and railroad freight services as a whole conducted principally by the Association of American Railroads.

Numerous railroads now are advertising their individual services principally in trade periodicals and in newspapers. Many advertise the industries and resources of particular cities or regions; some their freight services in general or emphasize specific freight services such as through package cars, important freight terminals, warehouses and facilities, information services, port facilities, and other advantages, other roads have conducted publicity campaigns for the purpose of solving some such difficulty or problem as the seasonal peak load of traffic and its bearing upon car service. Traffic advertising campaigns are often conducted jointly by the Passenger and Freight Traffic Departments.

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CHAPTER 10

Industrial and Commercial Traffic Management

Industrial and commercial traffic management is the converse of carrier traffic management. The traffic managerial staffs of railroad, waterway, highway and other transportation carriers act as the sales organizations of their respective companies.

Industrial and commercial traffic management consists of the purchase, or advice with respect to the purchase, of transportation services by shippers and consignees, either through the employment by the industries of their own transportation facilities or through the use of the services of common or contract transportation carriers.

Industrial traffic departments are charged with the responsibility of obtaining efficient and economical transportation service between areas of production, distribution, and consumption to or from which the companies which employ them are interested in moving raw materials, semi-manufactured articles, or finished goods. They are concerned primarily with protecting the interests of the industries they serve but, in a broader sense, their duties include obtaining adequate transportation service at fair rates for the communities or commodities in which they are interested. This wider field of activity, usually accomplished through cooperative action with the traffic departments of other concerns, ultimately benefits each industry through the establishment of fair rates for commodities and efficient service for all shippers and consignees in the communities concerned.

The position of industrial traffic manager grew out of the needs of industrial concerns for technically trained men with broad knowledge of rates, classification, shipping procedure, routes, services, and the legal rights and duties of shippers and carriers. The increasing complexity of these problems and the increasing degree of cooperation, and opportunities for coordination, among carriers made it imperative that industries have the assistance of technical experts in handling their transportation problems.

The cost of distributing raw materials and finished products is of growing importance to American producers and consumers as costs of production and distribution tend toward greater uniformity in various parts of the United States. Traffic management concerns itself with the transportation aspects and costs of production and distribution, and traffic managers must be familiar with all the forms of transportation available in order to secure adequate services at favorable rates.

Industrial and Commercial Traffic Managers

The term "industrial" or "commercial" traffic department is often used to include all of the varying types of traffic organizations. A distinction should be drawn, however, between industrial and commercial traffic managers. Industrial traffic managers are those who represent industrial organizations,—producers of raw materials, manufacturers or distributors, concerns which actually ship and receive goods. Commercial traffic managers supervise the traffic affairs of commercial organizations rather than industrial establishments,—organizations which, although interested in the movement of goods, do not actually ship or receive freight. The designation includes community traffic managers; commissioners of transportation of commercial organizations, such as chambers of commerce, boards of trade and commercial exchanges; and managers of transportation and traffic bureaus that serve groups of industries or commercial houses. In many respects the work of the two classes of traffic managers is similar, but there is sufficient difference in their functions, particularly in the actual shipment or receiving of freight, to warrant a distinction being drawn.

Functions of Industrial Traffic Departments

There are great variations in the types of industrial traffic department organizations, the principal factors influencing the type required by an industry being the character of the goods shipped or received, and the volume, nature, and direction of movement of the tonnage to be handled. The department staff may range from a single shipping clerk to the large organizations of hundreds of employees, such as are found in leading industries.

The departments have three major groups of duties; one group having to do with routine services, a second with what may be termed constructive functions, and a third group with cooperative functions.

Service or Routine Functions

The regular services or routine functions of industrial traffic departments include the duties related to the management of the routine transportation requirements of the industries with respect to transportation rates and charges, the routing of shipments, car supply, the supervision of shipping and receiving plant and local transportation, and claims against carriers.

Rates must be obtained from the carriers for the information of the departments interested in purchasing materials or distributing finished products. A file of rate tariffs sufficient to serve the needs of the industry must be collected and maintained. Many traffic departments also keep a file of tariffs applying to the traffic of their companies' competitors, so that the rate advantages or disadvantages may be taken into account in quoting prices on competitive business. Tariffs are used not only as sources of information as to the rates in effect at the present time but also in connection with claims arising after the tariffs have been superseded by other issues. Canceled issues are usually kept until the possibility of their being used to support claims has passed.

Studies of prospective changes in rates or services should be made in order to determine in advance the effects of the proposed rates upon the business of the industries. New rates which prejudice the industries unfairly may be protested before the tariffs go into effect by application to the Interstate Commerce Commission to suspend the tariffs, pending investigations as to the lawfulness of the proposed rates.

Freight bill auditing is another service function related closely to the general rate work of industrial traffic departments. If the freight bills cannot be corrected until after payments are made, overcharge claims must be filed by the industrial traffic departments against the carriers to whom the charges have been paid.

The routing of shipments is another important service duty of industrial traffic departments. The selection of the type of service whether rail, rail-and-water, all-water, express, highway, or air is obviously an important duty. Just as important, however, is the selection of the complete route, including the precise transportation carriers and sometimes the junction points, over which the goods are to travel. The Mann-Elkins Act of 1910 amended the Interstate Commerce Act so as to give shippers the right to choose the intermediate as well as the delivering

carriers when joint routes are available. Proper selection of routes makes larger savings in charges possible. Quicker delivery, the elimination of extra handlings at transfers, avoidance of congested terminals, elimination or reduction of cartage charges, reduction in likelihood of damage, utilization of special transit privileges available over one route but not over others, and most convenient delivery for consignees are other advantages to be gained by careful routing of shipments. The routes selected are shown in full on the bills of lading tendered to the carriers.

Goods which do not arrive at destination within a reasonable time are traced by telegrams, telephone calls, letters, or personal visits to the proper offices of the carriers, in order that the location of the delayed goods may be learned and the goods, if found, may be hurried forward to destination by the carriers.

Another important duty of the traffic department is to expedite shipments which are urgently needed. Arrangements are made with carriers to rush these shipments forward in order to avoid the shutdown of plants, to enable shippers to fill important contracts on specified dates, or to complete special orders on schedule.

Empty cars of the sizes and kinds required for outbound shipments must be ordered by shippers from the carriers in advance of the time they are needed.

Records must be kept of the exact time and date that empty cars are placed by the carriers for loading and that loaded cars are placed or spotted for unloading. Records are kept showing when unloaded cars are released upon notices from shippers and when loaded cars are turned over to the carriers for forwarding. These data are used to verify or correct carriers' bills for car demurrage. Many industrial departments use the car records to determine the extent and causes of car detention which results in demurrage, and thus to reduce or eliminate this source of loss.

The railroads and other carriers accept for transportation at standard rates only such goods as are packed in accordance with the rules of the freight classifications. Freight packing, therefore, requires expert supervision.

Packing specifications are prepared for the guidance of the receiving departments. Packing standards are shown in detail and the receiver is made responsible for reporting exceptions to these standards.

Bill-of-lading contracts and other shipping papers are prepared by or

under the supervision of industrial traffic departments. The complete documents are drawn up together with extra copies, and full shipping information, including the complete route, is supplied the carriers. The name and address of shipper, consignee or party to be notified; the route; the complete description of the goods in the terminology used in the governing classification or the commodity tariff; the quantity; marks; valuation, when required; amounts prepaid, if the shipments are prepaid; and other identifying information is included in the bills of lading to avoid the loss and delay of the goods in transit, or the assessment of incorrect charges.

Industrial traffic departments usually have the responsibility of arranging for local cartage whether the establishment operates its own motor trucks and horse-drawn vehicles or engages the services of local cartage operators. Materials purchased locally, goods sold to near-by customers, and freight to and from railroad freight stations and steamship piers are hauled in these vehicles under the supervision of the traffic department. Vehicles must be routed, instructions must be given drivers and helpers, and records of cartage cost should be kept by the traffic departments. Large industries have railroad tracks within their establishments upon which cars are placed for unloading or loading inside the plants or mills. Many companies have their own locomotives, freight cars, and locomotive cranes with which freight is moved from place to place within the plants as required in manufacturing. Inbound carload shipments and empty cars ordered for loading are received from the rail lines at established interchange points and moved to the unloading or loading places within the plants by the industrial locomotives. Outbound loaded cars and empty cars are moved to the interchange tracks and turned over to the carriers in the same way.

The work of the industrial traffic department in connection with intraplant transportation includes the management and operation of the equipment, keeping of car records, routing of movements to eliminate congestion and wasted car and engine mileage, handling car orders, car releases, and interchange of cars between the carriers and the plant facilities.

Industrial concerns with waterfront plants often have lighters, barges, tugboats, and other floating or marine equipment. The supervision of operation of equipment of this sort is often given to the traffic departments.

Claims for loss, damage, or delay to goods while in the possession of the carriers, as well as claims for overcharge, are prepared by the industrial traffic departments and collected through the claim or accounting departments of the carriers or, if necessary, by resort to suits at law.

Carriers are liable for the safe and prompt transportation of goods, their responsibility being fixed by the provisions of the bills of lading or shipping contracts, and by the tariffs, classification, and the requirements of the common law or of statutes. The precise extent of the liability of railroad express, water, and highway carriers must be determined in particular cases when losses result to shippers or consignees through failures on the part of the carriers to transport the goods properly.

Industrial traffic departments recover annually millions of dollars in overcharge, loss, damage and delay claims from carriers responsible for the losses.

Claims in writing for loss, damage, or delay must be filed with the originating or delivering carriers within nine months after the delivery of the goods in domestic traffic or after delivery at the port in export traffic. Carriers must pay all bona fide and proven claims, but they may not pay claims unless the liability of the carrier is proven by the claimant. The payment by the carriers of fraudulent or malafide claims is a violation of the Interstate Commerce Act, for which carriers and claimants may be punished by fine or imprisonment upon convictions.

Suits at law for the collection of damages arising out of claims against rail carriers must be presented within two years and one day after the claimants have been notified by the carriers that the claims have been disallowed, wholly or in part. If claims are presented within nine months after delivery in domestic or export traffic, or within nine months after a reasonable time for delivery has passed, suits may be begun at any time not later than two years and one day after written notices have been received by the claimants from the carriers that the claims have been disallowed wholly or in part by the carriers against which the claims have been made.[1]

The Interstate Commerce Commission, the Freight Claim Division of the Association of American Railroads, the National Industrial Traffic

[1] Interstate Commerce Act, Section 16, paragraph 3, as amended; Section 20; and Uniform Bill of Lading Contract, Section 2, paragraph B.

League, and the National Association of Railroad and Public Utility Commissioners have officially approved a standard form for presenting loss and damage claims against carriers to simplify and standardize claim procedure. The form provides complete identification of the claimant, the shipment, and the goods, a detailed description of the loss, damage, or delay suffered, a statement of the method used in determining the amount of the claim, and a list of the documents needed to support the claim.

Claims for straight loss or damage must be supported by an original paid freight bill, an original invoice, and a certified copy of an original bill of lading. Statements of nondelivery, of condition of goods when shipped, or inspection reports of damage or shortage, weighmasters' records, gaugers' certificates, and affidavits of those familiar with special features of the claims are recommended and sometimes required.

If the loss or damage is not noticed when the goods are received at the delivery stations and clean receipts are signed for the shipments in good condition, special statement forms for concealed loss and damage must be executed by the shippers and consignees in presenting concealed loss and damage claims. Reports of inspection must be made by representatives of the delivering carriers after the discovery of the loss or damage. These additional documents are filed with the standard loss and damage claim and other supporting documents.

Claims for delay must be supported by market reports or other data showing the methods used in determining the amount of loss.

Overcharge claims are presented to the carriers to recover the amounts paid for transportation in excess of the proper amounts provided for by the effective freight rates. Carriers formerly paid overcharge claims whenever they were presented within the statutes of limitations of the states in which the claims arise. The Supreme Court held in 1923, however, that overcharge claims must be filed within the period of limitation provided in the bill-of-lading contracts, and by the Interstate Commerce Act, for filing claims against the carriers, and that the passage of this time not only barred the claimants from recovering but destroyed the liability of the carriers.[2] This period is now set at three years from the date the overcharge was made.[3]

The standard form for presenting overcharge claims is similar in

[2] Kansas City Southern Ry. Co. v. Wolf, et al., (261 U.S. 133).

[3] Interstate Commerce Act, Section 16, as amended.

many respects to the form used in loss, damage, and delay claims. This form must be supported by the original paid freight bill, the invoice or a certified copy when the claim is based upon weight, valuation or claim of misdescription, the original bill of lading if the shipment was prepaid or claim based upon misrouting or valuation, a certificate of weight, and by reference to tariff authority for correct rate if error in rate is claimed.

It should be stated in connection with claim procedure that carriers have the right granted by law to proceed against shippers to collect undercharges at any time within three years of the date of the collection of the improper amount.

Constructive Functions

A second type of duties of industrial traffic departments may be designated constructive. In performing these duties industrial traffic departments go beyond the limits of routine service and seek to discover and develop new and improved methods of transportation in order to improve the methods of transportation used in production and distribution. Sites are selected for new factories, plants, warehouses, and other facilities so as to obtain locations offering the best transportation advantages and fair rate adjustments to and from the sites. Locations ideal in other respects often are seriously defective from a transportation standpoint. In some cases, the transportation facilities and rate bases available at certain locations become determining factors in locating the industries.

Research work is undertaken in rate structures affecting the industry and its competitors so that unfavorable rate adjustments may be brought to the attention of the traffic departments of the carriers, and corrective measures urged in order to remove the unfavorable conditions. Work of this sort entails the analysis of rate data, the preparation of charts, graphs, tables, and other exhibits to be used in presenting the positions of the industries and their rate requirements.

Analyses are made of the packing, marking, weighing, and handling of freight and of the selection of proper containers to protect the goods and to reduce loss and damage and transportation costs, to improve the efficiency of handling, and to reduce handling and shipping costs.

If the efforts of traffic departments to induce the carriers to make the necessary adjustments in transportation services and rates are unsuccessful, complaints against the carriers' rates or services are prepared and

filed with the State Public Utility Commissions or the Interstate Commerce Commission, and argued before the appropriate bodies. Suits are brought in the courts against carriers when actions at law are necessary to protect the interests of the shippers or consignees adversely affected.

Cooperative Functions

The third group of functions may be called the cooperative functions of traffic departments. Industrial traffic departments cooperate with the heads of other departments of the same industry, with other traffic managers or with representatives of the carriers to improve the transportation service. They cooperate with sales organizations to improve the distribution of the products of the industries seeking new markets, better routes, and rate reductions and to meet the transportation requirements of buyers. Purchasing departments are assisted through finding rates and routes to make available new sources of raw materials and supplies. Advertising departments are informed of the position of the industries with respect to the transportation and service or rate advantages or disadvantages of the industries, and their competitors, in fields where advertising campaigns are being conducted or are being considered. Production and works management departments are assisted by traffic departments in arranging routes to be taken by goods in the course of manufacture, to avoid cross routings and to improve the handling of goods through the use of mechanical handling devices, motor vehicles, marine equipment, and internal plant railroad facilities. Traffic departments advise other departments in all matters connected with the handling of goods into, through, and out of the plants where transportation or traffic problems are encountered.

Some of the most important cooperative work performed by industrial traffic managers is accomplished by the concerted action of several or many traffic men acting in unison to achieve some result of value to all members of the group. A large number of important cases instituted before the Interstate Commerce Commission and the various State Commissions are prosecuted by groups of industrial traffic representatives, acting either as members of a permanently associated group or as members of an informal alliance banded together to achieve the particular result sought.

It is customary for other industrial and commercial traffic managers,

who are interested in any particular case before the commissions, to petition for leave to intervene in the cases and to lend their assistance to the petitioner in the preparation and presentation of the case as well as to impress upon the commissions the fact that other industrial and commercial concerns are sufficiently interested in and affected by the cases to become parties to the proceedings. The decisions reached by the commission affect many interested shippers and consignees, communities, and types of traffic, with the result that few important cases are investigated without interveners appearing to be heard on both sides in the cases.

Cooperation of this sort is more or less spontaneous and usually ends as soon as the matter of mutual interest is finally disposed of by the commissions or courts. There are, however, some fairly permanent groups. More permanent forms of cooperation are to be found in the traffic field. Trade associations have permanent committees and departments to protect the traffic and transportation interests of the members of certain trade groups. Organizations and traffic departments of this sort are found in many lines of business and in numerous sections of the United States.

Chambers of commerce, boards of trade, or commercial exchanges have similar committees and bureaus attending to the transportation interests of members. Commercial organizations of this class are to be found in virtually every city of importance. State, national and international chambers of commerce function to advance the general business and transportation interests of the members in the territories served by the organizations.

The traffic managers of member companies are often appointed to the transportation and other related committees of the trade associations and chambers of commerce. Rate adjustments and transportation service conditions affecting all within the trade or district are discussed, and appropriate action is taken through the transportation committees or bureaus of the organizations so that adjustments, equitable to all the members, may be obtained.

The National Industrial Traffic League is the principal national organization of industrial traffic managers. The membership is made up of actual shippers and consignees of freight taking out bills of lading in their own names and of industrial and commercial organizations and

associations representing such shippers. The traffic managers of the organizations are the official representatives of their respective companies or associations in the League.

In several large cities and in a number of the other important transportation and industrial centers, traffic managers have local or district associations for the interchange of ideas upon transportation subjects and for joint action of the members in presenting matters of common interest to the carriers, the State Commissions, or the Interstate Commerce Commission.

Local industrial and commercial traffic associations differ somewhat in purpose as well as in organization from local chambers of commerce, boards of trade, commercial exchanges and similar commercial bodies.

Shippers' Advisory Boards

In 1923, the American Railway Association, the predecessor organization of the Association of American Railroads, through its Car Service Division, organized a number of Regional Shippers' Advisory Boards composed of representatives of the leading shipping concerns of the districts in which the boards are located. Thirteen such boards have been constituted in as many sections into which the United States is divided.

These organizations serve as a meeting ground for shippers and railroad operating officers for the better understanding of transportation operation questions, for adjusting informally car service difficulties which may arise between carrier and shippers, and for giving the shipping public a direct voice in the activities of the Car Service Division of the Association of American Railroads on all matters of mutual concern.

Informal negotiations between industrial traffic managers and the railroads' operating officers through the media of the advisory boards have tended to bring the railroads and their patrons closer together and have given to each a fuller appreciation of the problems of the other.

Traffic Clubs

In more than one hundred and fifty cities throughout the United States traffic clubs composed of representatives of industrial and commercial concerns, transportation companies, and trade organizations have been organized to cultivate closer personal and business relations be-

tween those directly interested in the handling of traffic, both as shippers and carriers.

Briefly stated, the function of traffic clubs is to foster a professional spirit and solidarity among the representatives of the several types of producers and consumers of transportation and they are successful to the extent to which they develop this feeling. These clubs, although largely social in nature, are nevertheless important institutions in the field of transportation. Their function is to promote shipper and carrier cooperation in transportation.

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CHAPTER 11

Railroad Freight Classification and Rates

Railroad rates and fares are the prices which carriers charge for their services. The schedules of charges on interstate traffic, the class-rate scales, the commodity rates, and the passenger fares are worked out by the carriers to be filed with the Interstate Commerce Commission and to become effective after the period of 30 days required unless the Commission for good reason permits the rates to go into effect upon less than statutory notice. Railroad carriers apparently fix the interstate charges subject to suspension by the Commission. The rates and fares fixed are those which the carriers think they need. The Commission may upon complaint or upon its own motion undertake to prescribe, after hearings, rates which the Commission considers lawful maximum or minimum or actual rates.

In a larger sense, however, railroad rates and fares are not fixed by the carriers and government officials, but by the forces, mainly economic and partly social, that determine the prices that the carriers may charge for their services. The laws that control, or possibly it may be more accurate to say the factors that affect, prices apply to the prices charged for railroad services. To discuss the theory and principles of rate-making is to consider the application of certain economic laws, or at least certain economic facts, to price-fixing in one important field of business.

In businesses in which the producer or seller has a monopoly the prices charged are those that will yield the largest net profits, while in businesses where there is free competition the prices tend to become those that will yield the least advantageous producers or traders enough profit to cause them to continue in business. When there is complete monopoly the prices tend toward the prices which will yield the maximum net return, while under free competition prices tend to become as low as producers and sellers can produce the service without loss. As industry and trade are now organized and carried on, there are comparatively few businesses that are completely monopolistic or completely competitive; those that are classed as monopolies usually are subject to

certain forces of competition, while those engaged in competitive enterprises are ordinarily able, by cooperative effort, to place some restraint upon competition, or restraints are placed by public authority. Most businesses are partial monopolies, the degree of monopoly varying widely.

Railroad transportation companies have often been classed as monopolies or semi-monopolies but the evidence is not convincing that the railroads ever enjoyed this position excepting with respect to traffic of a nature that could not be transported by other carriers originating at points or destined to points served by only one railroad. In the past railroads had to meet the competition of steamship carriers and other railroads at competitive points. Now railroads are confronted with a galaxy of railroad, steamship, motor, pipe line and air carriers all competing for various types of freight traffic. The typical railroad company has an enterprise with a large amount of invested capital. It is very difficult for a new, rival railroad to enter the territory served by an existing railway, not only because of the heavy capital investment required, but also because a railroad that has been in existence for a long time usually has a more advantageous location, especially in large city terminals, than a new company could acquire even at a cost much in excess of the investment of a company that has grown up with the communities and cities it serves. Moreover, under the Interstate Commerce Act no new railroads can be built in the United States without the consent of the Interstate Commerce Commission, which must be convinced of the public necessity for the proposed road before it will approve its construction.

Other factors which tend toward strengthening the competitive position of the railroads are:

(1) That many places are served by only one railroad line and shippers and passengers in those places do not have a choice of railroads, although in many cases they may use some other means of transportation. They can ship or travel by only one railroad at such rates and fares as the carrier subject to government regulation may fix for that line, if they must ship by railroad.

(2) Producers, in most instances, are not free to move their place of business, to avoid high transportation charges, from one railroad line to another. Of course, farmers, or miners, or lumbermen, or quarrymen can not move at all; while most manufacturers would have to sacrifice

a considerable share of their investment if they moved their industries to another location. Moreover, most families are more or less "rooted to the soil"; they do not care to leave their homes and live in new surroundings. This is offset to some extent by the mobility of certain industries which can move and have moved in order to avoid high rates.

(3) By forming associations, rival railroads are able to set limits to their competition with each other. For like services the same rates are charged. Indeed, this is necessary to avoid harmful discrimination among producers and traders. When several railroads serve the same locality or section of the country they make their rates on competitive traffic by common action, and are encouraged by government authority to do so, because such common action is in the public interest.

(4) Railroad systems in the United States have by long evolution become large, and the number of systems is being reduced by consolidations effected with approval of the Interstate Commerce Commission. The Transportation Act of 1920 contemplated the ultimate grouping of American railways into "a limited number of systems," and grouping by the I. C. C. under the Act provided for a small number of large railroad systems. The law, as amended by the Emergency Transportation Act of 1933, authorizes carriers to consolidate, merge or lease other properties subject to the approval of the Interstate Commerce Commission. It is obvious that the further consolidation of railroads will reduce the number of systems competing with each other.

The foregoing facts are sufficient to show that the railroad business has certain characteristics that tend toward monopoly and yet it is inaccurate to classify the railroads as either "natural" or complete monopolies, in the past and certainly not as of the present time. While a railroad company possesses strong monopoly powers with respect to certain traffic or certain areas served it is also subject to far-reaching and effective competitive forces that influence its rate-making policies, the general level of its rate structure, and, to a large extent, the individual rates for particular services.

Railroad Rate Factors

The strongest influence affecting individual railroad rates and territorial rate structures, is economic or industrial competition. Each railroad is bound up with the section it serves. The carrier prospers along with the prosperity of the farms, the mines, the factories that produce

goods to be sold on markets reached by the carrier. Interregional competition in industry is general and strong. Different grain-growing areas ship their products to the same primary domestic markets and to common ultimate foreign markets. The steel mills of Pennsylvania, Illinois, Alabama, and other states are rivals, and the same is true of the coal mines of Pennsylvania, West Virginia, Ohio, Illinois, and Alabama. The fruit growers of California have their rivals in Florida and Texas. These are only a few instances of the prevalence of industrial competition of which the railroads must take account in working out their rate schedules and structures.

The competition of rival cities, of interior trade centers, and of rival seaports, or "gateways" of export and import trade, also involves the railroads that serve the cities. Some railroads are interested in the North Atlantic ports, others in the Gulf ports; one road may have a large interest in Baltimore, while its rival may be interested mainly in Philadelphia, or New York; one railway system may desire to haul traffic from Chicago to the Atlantic seaboard for export, another line may wish to take the traffic to the Gulf ports, while a third road may be eager to move the goods to a Pacific gateway, and the producers and shippers of Chicago and those of New York will zealously guard against either city being placed at a relative disadvantage, as regards transportation rates, in reaching the domestic and foreign markets in which they compete for trade. "Market or commercial" competition is an important factor in the determination of rates.

There are two other forces, one economic and one psychological, that limit the application of the monopoly principle in rate-making. Few, if any, railroads are content with the volume of traffic that they have at any given time as a result of existing rates and efforts to obtain business. This is due to the fact that the law of increasing returns or diminishing costs applies strongly in the railroad business where fixed charges and other "overhead" costs are especially large. At least half of a railroad company's expenses are quite independent of the volume of traffic, and a part of the other half of the expenses does not increase proportionately to additions to the tonnage of freight or the number of passengers carried. Thus every railroad company wants to get more business, because by so doing it can more than proportionately increase its net earnings and profits. There are only two ways to get additional traffic: One is for one railroad to persuade shippers and travellers to patronize it in-

stead of another; the other is to create new traffic by stimulating production and shipments. Most of the large American railway companies have a department to promote the location and development of industries along their lines; and the rate-making officials are careful to cooperate as far as practicable by maintaining rates that will enable shippers to reach their necessary markets. It is the policy of the railroad to make "rates that will move the traffic," subject to the limitations that the rates shall be profitable to the carrier.[1]

The psychological fact that leads to interrailway competition is the simple and natural one that railroad officials, like other men, want "to make good"; they want to show that as a result of their efforts their railroad is performing a better service than other roads are rendering and that under their management traffic has increased and net earnings have grown. A man may want to make good in order to secure promotion, but a still stronger incentive is the satisfaction and the just pride every normal man derives from having achieved success in his life work. The ambitions of men as well as the law of increasing returns cause men to strive for results as great as, or greater than, their rivals can show. This is competition.

From the foregoing facts one principle of rate-making becomes evident. While the railroad business is in large measure monopolistic, prices or rates are not those that would yield the highest possible net profits. To the extent that government regulation permits, rates may be higher than would be possible if free competition obtained in the railroad service, but the forces of competition keep rates below the level they would reach under conditions of complete monopoly.

In all kinds of business, the railroad business as well as others, those who fix the prices, or the rates for services, will be careful, first of all, to charge enough, if possible, to cover all costs and expenses. They will also try to make the charges yield profits; and, in the absence of the restraints of economic competition and government regulation, they will charge what they think the public can afford to pay or will pay rather than to go without the article or service desired. It is thus clear that, as regards railroad rates and fares in general, the ascertainable costs (both operating expenses and fixed charges or "overhead") fix the minimum level of charges; while the value of the service to the shipper and the passenger establishes the maximum within which charges will be kept.

[1] See Chapter 9.

It is also true that between these two rate levels, which for most kinds of traffic are some distance apart, both the cost of service and value of service are considerations affecting the determination of actual rates which are often determined by competitive influences.

It would seem at first view that the logical basis or standard of railroad rates ought to be the capital costs, operating and maintenance expenses, and fair profits; and probably that would be the principle followed in making many, though not all, class and commodity rates were it possible to determine the cost of particular railroad services. Charges are per hundred pounds or ton or per passenger per mile, but there has been found as yet no way for ascertaining closely how much of the entire cost of maintaining and operating a large railroad system is due to, or should be allocated to, any one of the thousands of shipments or to any one of the thousands of passenger trips that are made or taken each day. In other words, railroad expenses are for the most part "joint costs" incurred in operating the railroad system as a whole for the performance of its services as a whole. There are certain obvious differences in the terminal handling and mere haulage costs for goods that are widely dissimilar, such as coal by the carload and shoes by the case; but how much of the president's salary or how much of the interest on the bonds shall be charged up to the carload of coal and to the case of shoes? It is partly because there is no definite answer to such a question as this, that individual railroad rates are not made by giving consideration solely to cost.

Nevertheless, cost becomes more influential with the evolution of rate systems and of government regulation of rates. The Interstate Commerce Act directs the Interstate Commerce Commission to consider among other things in establishing or adjusting railroad rates the effects of the rates upon the movement of traffic; the need of the public for adequate and efficient railroad services at the lowest rates consistent with supplying the service, and the need of the carriers for revenues under honest, economical and efficient management to provide such service.[2] The Commission is not directed to make cost of service the sole determinant of the charges for the different classes of freight and the many kinds of commodities. When it comes to deciding upon the class and commodity rates that any separate railroad company shall or may

[2] Interstate Commerce Act, Section 15A, as amended by the Emergency Railroad Transportation Act, 1933.

charge, the value of the service as well as cost data and other factors may be and are considerations affecting the decision.

The influence of cost upon rates is increasing as a result of present efforts of the carriers in the several rate territories to systematize rate systems by substituting standard or maximum class-rate scales in each rate territory in place of the numerous scales formerly prevailing. The carriers, with the cooperation of the Interstate Commerce Commission, are standardizing class rates and are reducing the number of commodities given ex-class or individual rates. This process is causing rates to be based more definitely upon distance; and the effect of this is that rates increase or decrease as the cost of service is affected by the length of the haul. Rates do not vary proportionately with distance, and, in a country of continental proportions, distance will necessarily be a minor factor in determining rates on traffic moved over long routes subject to competition, interregional and often international in scope.

What the service is worth to the shipper or passenger has not only set the upper limit of railroad charges, it has also largely determined the point below that limit at which the carrier as the rate-maker and the government as the rate regulator have actually fixed the charges. What the shipper can afford to pay for transportation depends upon his production costs and the prices he can get in his markets. What he will pay a railroad for transportation will also depend upon what rates and service he can get from another railroad, if there be one available, or from carriers by water, if there be such that can serve him. At the present time, the value which a shipper will place upon railroad transportation will often depend upon the cost and conveniences of possible motor-truck services.

The railroad carrier is careful to make "rates that will move the traffic," and also increase it steadily. The carrier being a co-worker with the farmers, manufacturers, and other producers and distributors in getting goods to profitable markets is bound to consider the value to the shippers of the carriage service. If the carrier acts wisely, he will look to the future as well as the present and will, so far as costs of service permit, further the development of the section served by fixing rates well under the maximum value of the service to shippers.

In the regulation of railroad charges, government commissions are charged with the duty of fixing or authorizing rates and fares that are "just and reasonable." The carriers propose to, and file with, the com-

missions the rates and fares they wish to charge and the charges thus proposed are subject to protest of the shippers and traveling public who are, of course, concerned primarily with the value of the services. The carrier is required to justify his proposed charges, the burden of proof is upon him. It is thus clear that the interests of the shippers and other users of transportation must have much weight in determining the rates proposed by the carriers and authorized by the commissioners. Indeed, the value of service is the strongest determinant of railroad charges, more weight being given to it than to the cost of service in working out class-rate scales and commodity rates.

As will be discussed later, the first step in the practical work of making railroad freight rates is to group articles into a limited number of classes. Rates are made for classes, not for articles, and the rates grade down from the highest to the lowest class according to a definite scale, there being some bulky or low-valued articles that are given individual, ex-class, or commodity rates. In discussing freight classification it will be shown that the value of an article is one of the factors that determine to what class an article shall be assigned, and thus what rate shall apply to this article, as compared with articles in other classes. Goods of high value are placed in the higher classes, those of lower value in the lower classes. This is because articles of high value will stand a higher freight charge than can be put upon those of lower value. The shipper of high-valued goods can afford to pay a higher freight rate, because the margin between production costs and obtainable market prices is wider than in the case of low-valued articles. The transportation of a ton of shoes from the manufacturer to the shopkeeper enhances the value of the shoes more than the value of a ton of coal is increased by shipment from mine to coal merchant; indeed, the value of the service to the shipper is greater. In a word, then, the value of articles, which affects the value created by the service of transportation, influences the classification given articles and thus their freight rates.

The factors that determine railroad rates include not only the economic ones thus far considered—the competition, cost of service, value of the service, and value of the articles shipped; there are also social forces that influence public policy as regards rate regulation. This policy of adjusting certain rates and fares with a view to accomplishing desirable social ends meets with the approval of the railroad companies. As long as rates as a whole yield the several companies adequate revenues,

the deviations made from normal rate schedules for the purpose of benefiting society are desirable from the carriers' point of view, provided the special rates for social ends do not interfere with the maintenance of the regular charges for the services not covered by the exceptional rates.

It has long been the practice of railroads having passenger terminals in large cities to establish relatively low commutation fares for the residents of near-by suburban towns. The railroads do this, primarily, to further the growth of the suburbs and thus to increase traffic; but the public authorities that regulate fares are interested in the distribution of urban population and the reduction of congestion in the poorer residential parts of the cities. The state regulatory commissions keep the suburban fares on a lower level than that on which they would be maintained by the carriers solely for reasons of traffic development.

A notable example of an adjustment of freight rates for the purpose of favoring the distribution of agricultural production over a wider area than the usual freight tariffs would make possible is found in the system of rates established by state commissions and by the Interstate Commerce Commission upon levels lower than the "normal" rate levels in order to assist in the widespread distribution of agricultural products over wide market areas.

American railroads make rates lower than those on like domestic traffic for many kinds of exports and imports handled through the Gulf, South Atlantic and Pacific coast seaports of the United States. This is done both to enable those seaports to compete more successfully with the North Atlantic ports from Virginia to Maine inclusive and to make it possible for American producers and traders to compete with their foreign rivals under more favorable conditions. The general public looks with favor upon these export and import differential rates, because they help distribute trade among the three seaboards of the United States and thereby favor the development of the foreign commerce of the country. These social or national results are the ones in which the public is interested.

To a limited extent some classes of passengers are accorded fares lower than the regular charges. Clergymen travel on half-fare tickets, and school children may be given reduced rates. These concessions are for philanthropic and educational reasons. There are also instances of laborers being carried on workingmen's tickets at reduced fares during

certain hours of the morning and evening. In Great Britain, Parliament long required the railroads to carry laborers at reduced rates, and for this purpose the railway companies operated what were called "Parliamentary Trains." In many countries, especially in those in which the government owns and operates the railroads, special fares for the clergy, workingmen, school children and other classes whose travel is deemed to be of social benefit are granted more generally than they are in the United States where the railroads are corporate enterprises whose managers are under stronger pressure than are government officials to earn interest and dividends on invested capital.

It is obvious that government railway authorities can go farther than private railway administrations can go with the "socialization" of rates and fares; nevertheless, even with private ownership of railroads the economic forces controlling rates and fares are appreciably modified by social factors. Indeed, public regulation, if fully exercised, can accomplish most of the results obtainable from government ownership and operation.

Throughout this discussion of the theory and principles of rate-making frequent reference has been made to the fact that, as regards interstate traffic, not only rates in general, i.e., rate schedules and systems, but also individual rates whose fairness may be questioned, are subject to revision, adjustment and final determination by the Interstate Commerce Commission. State Commissions have similar jurisdiction over intrastate rates. All railroad charges are subject to government regulation, and must be in harmony with the rate-making policies adopted by Congress and the state legislatures, and enforced by the Interstate and State Commissions.

All rates and fares are required by law to be reasonable; the Interstate Commerce Commission decides whether the charges filed by interstate carriers are or are not reasonable; and the Federal Courts may decide whether the Commission's decisions are legal and constitutional. For the most part Congress has left the Interstate Commerce Commission free to determine standards of reasonableness; and, in general, the Commission has given such weight to the several factors or principles of rate-making as its judgment dictated. The provisions of the Interstate Commerce Act as stated above, stipulate that the Commission shall consider certain factors or objectives in fixing rates, and the courts have held that the rates must not be so low as to confiscate

the property of the carriers. With these exceptions, there are few legal restraints upon the administrative discretion of the Interstate Commerce Commission in deciding what rates are reasonable and lawful—its interpretation of its statutory powers being always subject to review in the Federal Courts as to lawfulness and constitutionality.

The railroad commissions, particularly the Interstate Commerce Commission, have been given comprehensive powers of rate regulation; and yet, broadly speaking, rates and fares are still mainly determined, not by the Government, but by the competitive and other economic and social forces to which rate levels and rate systems are subject. The authorities of the Federal and state governments modify, adjust and correct rates and fares; they protect the public against possible unreasonable charges and practices; they endeavor to keep the rates in the several sections of the country so related to each other as to enable all regions to enjoy, as fully as may be, their special economic advantages; but, although of much value and of wide scope, regulation is more largely a corrective than a constructive force in the making of railroad rates and fares.

Railroad Freight Classification

Classification is the first step in the mechanics of rate construction and publication. Approximately 25,000 different articles are classified by dividing them into a limited number of classes or groups in order to reduce the number of rates which must be made. All articles within each of these classes are given the same rates unless special or commodity rates are made as exceptions to the classifications or as commodity rates. The classifications are official tariff publications of the carriers containing the class ratings of all articles and the general rules governing billing of freight, packing specifications, marking requirements, payment of charges, mixed shipment regulations, minimum weights for carload shipments, loading and unloading regulations, and other rights and duties of shippers, consignees, and carriers.

At one time there were 138 distinct classifications in the eastern section of the United States alone, and there were 130 just before the passage by Congress of the Act to Regulate Commerce in 1887. The multiplicity of classifications and the lack of uniformity in the descriptions of commodities and the ratings applicable to traffic caused confusion and discriminations that affected commerce adversely. The

growth of long-distance traffic, of through joint routes, and of through billing of freight, and the enactment of the Law of 1887 forbidding unjust and unreasonable discriminations and undue prejudices made necessary a reduction in the number of classifications. The Act of 1887 to Regulate Commerce required each carrier to file a classification with the Interstate Commerce Commission. The rail lines in the East adopted the Official Classification Number 1, in 1887, and by the end of 1889 the railroads of the South had agreed upon the Southern Classification Number 1, while the roads west of the Mississippi River adopted the Western Classification Number 1. These classifications revised, enlarged, modified, and republished from time to time, are still in existence, and cover all traffic on American railroads, except the relatively small percentage moving in intrastate commerce in states having state classifications. The present effective railroad freight classification, used also by a number of domestic steamship and motor freight carriers, is Consolidated Freight Classification No. 13.

Classification Territories

The continental United States, except Alaska, is divided among three major classification territories. The Official Classification applies in the territory bounded by the Atlantic Ocean; the boundary line between the United States and Canada; a line south of the Atchison, Topeka and Santa Fe Railroad from Chicago to Peoria; the east bank of the Illinois and Mississippi Rivers to and including St. Louis; the north bank of the Ohio River; the line of the Norfolk and Western Railway to and including Norfolk.

The Southern Classification governs traffic in the territory east of the Mississippi River and south of the Ohio River and the Norfolk and Western Railway.

West of the line of the Atchison, Topeka and Santa Fe Railroad from and including Chicago, the west bank of the Illinois River and the Mississippi River, is the territory of the Western Classification, which also applies to Wisconsin and the upper peninsula of Michigan.

Each territory has a committee which formulates classification rules, classifies articles, and compiles the classification for the territories. The headquarters of these committees are at New York, Chicago, and Atlanta, respectively.

Several states, including as a principal example the state of Illinois,

have classifications for intrastate traffic. The railroads of the Republic of Mexico use the Mexican Classification, while those in Canada have the Canadian Classification. Rates governed by the applicable Official or Western Classifications are published to and from border crossings by railroads of the United States while Mexican or Canadian Classifications and rates apply beyond the boundary. Rates "break" at the borders, through international railroad rates being uncommon.

Consolidated Freight Classification

The chairmen of the three major classification committees of American railroads form a Consolidated Freight Classification Committee which publishes the Consolidated Freight Classification containing in a single volume the rules, regulations and ratings of the Official, Southern, and Western Classifications. This publication was first issued effective December 30, 1919, when the railroads were under the control of the United States Railroad Administration. It is not a uniform classification although that was what the Railroad Administration desired. Complete unification was found to be impracticable because of the drastic nature of the changes required in descriptions of articles, rules, and class ratings for all territories. The volume is published jointly by the three classification committees, each territory being governed by its own classification. There is uniformity in the description of the articles, and the rules are virtually identical, but the articles classified may have different ratings. A consolidated volume is a long step toward uniformity and a great convenience for shippers and carriers. Differences in traffic and industrial conditions and commercial practices continue to be reflected in slight variations in the classification rules and in the classes to which goods are assigned. When such conditions do not require distinctions to be made the tendency is toward uniformity in rules and ratings. The Classification is adopted by concurrence by each railroad or other carrier using it.

The Official Classification provides six numbered classes, first class and five lower classes, two special classes or rules, and several multiple or multiple and fraction ratings higher than first class. The classes in the Illinois Classification are the same as those in Official. The Southern Classification has twelve numbered classes as well as several ratings higher than first class on a multiple and fraction basis. The Western

Classification contains five numbered and five lettered classes and the usual ratings higher than first class.

The classes, first class and lower in each of the major territorial classification divisions are:

TERRITORY	CLASSES											
Official and Illinois Classifications:	1	2	R.25	3	R.26	4	5	6				
Southern Classification:	1	2	3	4	5	6	7	8	9	10	11	12
Western Classification:	1	2	3	4	5	A	B	C	D	E		

Classification Factors

The classes to which the thousands of articles moved by railroad transportation are assigned are determined by the classification committees after analyzing the commercial and transportation factors involved in the production, distribution, and transportation of the articles. Classification is not an exact science. Articles cannot be assigned to classes through the use of the "yardstick, the scale, or the dollar." [3]

Class ratings must be based upon real distinctions in the nature of the articles from a transportation standpoint as interpreted by the classification committees from the data presented by the carriers, shippers, or consignees, or as developed through investigations of the committees.[4] The Interstate Commerce Commission may be appealed to, to determine the class ratings to which articles shall be assigned and to determine the factors which must be considered in giving ratings to articles transported by carriers subject to the Interstate Commerce Act.

The factors of greatest importance are:

1. The intrinsic value of the article
2. Weight in proportion to the space occupied by the article, or the density of the article
3. The quantity offered for transportation as one consignment; whether carload or less-than-carload quantity
4. The state of manufacture, whether the articles are crude, rough or finished
5. The condition in which the goods are offered for transportation—whether loose, in bulk, or in containers

[3] Forest City Freight Bureau v. Ann Arbor R.R., et al., 18 I.C.C. 205.
[4] Stowe-Fuller Co. v. Pennsylvania Co., 12 I.C.C. 215.

6. The manner of shipping, whether set up, partially knocked down, or completely knocked down, nested or in single pieces, in bundles, or otherwise specially packed to conserve space
7. The market value of the goods
8. The shipper's written declaration as to the released or restricted value of the goods
9. The cost of performing the transportation service
10. The volume, regularity, direction, and seasonal variations in the movement of the traffic
11. The need of special or accessorial services, such as refrigeration, icing, ventilation, heating, diversion, reconsignment, preference freight service, caretakers, transit privileges, cleaning or fumigation, special cars, or other service of this character
12. The length of the haul
13. The type of railroad equipment required—box, stock, flat, tank, poultry, gondola, or other special type of freight car
14. The risk of the goods damaging railroad equipment
15. The hazards of handling the goods and the degree of care required in handling the goods
16. The danger of spoilage or contamination of the goods
17. The quantity of the goods that can be loaded into cars so as to occupy the cars to their cubical capacity or maximum weight load
18. The use of actual or estimated weights
19. The type of container used, whether box, crate, barrel, drum, package, or bundle
20. The material of which the container is made; whether steel, wood, fiber board, paper, cloth, or other substance
21. The kinds of protection used to secure packages by strapping or other devices
22. The competition of carriers or commercial or market competition
23. Special considerations incident to the development of traffic or industry in given sections of the country
24. The increase and conservation of revenues of the carriers.[5]

Many of these factors are also considered in making rates, for although classification and the fixing of rates are not identical it is nevertheless impossible to dissociate the two in practice. Classification is the preliminary step. In making rates, different emphasis is put upon the above factors in adjusting charges to and from given points.

[5] See Annual Report of the Interstate Commerce Commission (1897); also 25 I.C.C. 608; 17 I.C.C. 197; 54 I.C.C. 8; 13 I.C.C. 474.

The Classification Committees

The code of rules compiled by the committees and published in the Consolidated Freight Classification contains also the uniform bills-of-lading contracts, straight and negotiable "order notify," and the regulations of Congress governing the transportation of explosives, inflammables, and other dangerous articles.

The scope of the work of the Classification Committees is, moreover, not confined to articles moved at class rates. The tariffs of exceptions to the classification and commodity tariffs published by individual carriers or jointly by "agents" for several carriers are governed in whole or in part by the rules and regulations established by the Classification Committees. Changes in rules or regulations are made by the exceptions to the extent specifically mentioned in these tariffs, but if not specifically amended by the tariffs of exceptions, the Classification rules govern.

The procedure followed by the committees in classifying articles and in formulating rules and regulations governing transportation is prescribed by the Interstate Commerce Commission. The formal hearings are public, due notice being given to all parties interested in the proceedings including the state regulatory bodies and the Interstate Commerce Commission. Dockets on which matters to be considered are entered are prepared, and full records are kept of the evidence and arguments advanced for and against the proposals. The findings of the Committees are published in supplements or reissues of the Consolidated Freight Classifications issued by the Consolidated Freight Classification Committee.

The record of proceedings in classification cases before the Committees is made from the testimony of competent witnesses and experts for the shipping public and for the carriers. The decisions of the Territorial and Consolidated Classification Committees are based upon the conclusions of the majority of the members. Protests and exceptions to the findings may be made to the Interstate Commerce Commission by the parties affected. The records of the testimony and decisions of the Committees are used by the Commission for the review of the cases and for its decisions in these matters. Great weight is given to the testimony and findings of the Committees by the Interstate Commerce Commission in arriving at its conclusions.

Railroad Freight Traffic Associations

In making railroad freight rates and determining rate and tariff policies and practices, the railroads of the United States are aided and their work is coordinated by freight traffic associations of which individual railroads are members. There are several types of railroad freight traffic associations now functioning. There is in each of the major traffic territorial divisions discussed in Chapter 2, a freight traffic association in which the railroads serving these respective territories are members. Traffic associations of this type are the New England Freight Association, the Trunk Line Freight Association, the Central Freight Association, the Western Trunk Lines Traffic Association, the Southwestern Lines Freight Bureau, the Southern Freight Association, the North Pacific Coast Freight Bureau, the Pacific Freight Bureau, and the Transcontinental Freight Bureau.

In Canada there are two subdivisions of the Canadian Freight Association,—Eastern Lines and Western Lines.

In addition to the major territorial freight traffic associations there are minor associations including in their membership railroads serving one or several states, such as the Illinois Freight Association, the Texas Freight Tariff Bureau, and the Colorado-New Mexico Freight Bureau.

Interterritorial associations include railroads in different sections of the country which are interested in through long-distance freight traffic. An association of this type is the Atlantic Seaboard Freight Bureau, which includes carriers in Trunk Line, New England, and Southwestern territories which are interested in through traffic between the Northeastern and Southwestern states.

Local or gateway associations represent railroads interested in freight traffic moving through principal gateways or ports.

Another type of traffic association is concerned with traffic in a large terminal area. Finally, there are freight traffic associations which include carriers in all territories interested in certain types of freight traffic movements. Associations of this type include the National Perishable Freight Committee; the Bureau of Explosives of the Association of American Railroads; coal traffic associations, and similar specialized associations.

These associations are presided over by chairmen and have standing rate committees and tariff bureaus composed of full time employees of

the associations. The member carriers are represented by traffic officers. Proposals to initiate or change rates, submitted by individual carriers, are docketed to be discussed by the representatives of all member carriers, and, if approved, are published either by the railroads or by the tariff bureaus or other tariff publishing agencies.

Freight Tariffs

The charges for railroad transportation services arrived at by considering the factors that determine rates must be published and filed with the state commissions if they apply to intrastate traffic and with the Interstate Commerce Commission, if they are for interstate shipments and travel. The publications containing the rates and charges are known as tariffs.

Class-rate tariffs set forth rates applying to the several classes into which articles are grouped by the classification governing the tariff. The appropriate classification must be used in connection with the class-rate tariff to ascertain the rate when a class rate is used.

Another type of tariff is the exception to the classification. Certain roads for various reasons publish tariffs stipulating that the rules, carload minimum requirements, or class ratings provided by the classifications governing the movement of traffic over their lines are changed to suit the requirements of certain descriptions of traffic.

Commodity-rate tariffs name the rates between specified points on certain kinds of freight offered in large volume and with regularity. Such rates are either general, that is, applying to a number of items of traffic, or specific, applying only to certain articles. Railroads publish both general and specific commodity tariffs. Class rates apply between every station in the United States and every other station either directly or by groupings. There is always an applicable class rate. Commodity rates and exceptions, remove the articles upon which the special rates apply from the class ratings and rates that ordinarily govern.

In seeking the proper rate to apply the shipper must search the following tariffs to find the lowest rate applicable to his freight from the shipping point to the final destination: the specific commodity tariff, the general commodity tariff, the exceptions to classification, the class-rate tariff, and the classification for rating.

Traffic-moving between stations both of which are on one railroad is local, and the rates applying to such traffic are "local" and are sometimes

published with the proviso that they are applicable only on traffic moving between points of origin and of final destination indicated. Such rates are strictly local; while other tariffs are used in combining the local rates from the point of origin to a junction point with the rates made by another railroad to final destination. Such rates are "proportioned." Many tariffs containing rates between points on one railroad publish rates which may be used either as local or proportional.

"Joint" or "interline" tariffs are of rates between stations on one line of railroad and those on another. The names of the participating carriers must be shown in the tariffs and the company issuing the tariffs must obtain the authority or concurrence of the other interested carriers. One railroad may publish rates between its stations and those either of only one other line or of a number of other carriers. The joint tariffs and evidence of the acceptance or concurrence of the carriers other than the issuing company must be filed with the Interstate Commerce Commission.

"Agency" tariffs, which are published by an individual or a representative of an association of carriers, quote rates between stations on the lines of many carriers. Such tariffs reduce the number required for interline rates. Virtually all long distance interterritorial traffic moves at rates thus made and published in agency tariffs which are a saving to the carriers and a convenience to shippers.

Agents publishing tariffs derive their authority through powers of attorney executed by officers of the railroads concerned, the rates named in the tariffs being concurred in by the parties thereto. The tariffs, powers of attorney, and concurrences must be filed with the Interstate Commerce Commission in order to make the tariffs legally applicable.

Agents sometimes join with other agents in publishing tariffs applying to traffic in which a number of railroads and several territorial associations are interested. The Consolidated Freight Classification, The Trans-continental, and a number of interterritorial tariffs are published in this way in the interest of economy and efficiency.

The Interstate Commerce Commission has authority to determine and prescribe the form of the tariffs, whether local, joint or interline, agency or joint agency, and detailed rules and specifications have been promulgated by the Commission which require all tariffs to conform in contents, form, arrangement, and application with its regulations.

Territorial Freight Rate Structures

Reference has been made to the task of the Interstate Commerce Commission in prescribing rate structures in the major rate territories into which the United States is divided. During the past decade new class rate structures have been ordered in the Southern, Eastern, including Trunk Line, New England, and Central Freight Associations, the Southwestern, and Western Trunk Line Territories. The structures have been modified from time to time by supplemental orders of the Commission and the levels of the rates have been affected by horizontal rate changes but the principal features of the structures have not been obliterated.

Several common characteristics are to be found in all of these structures although there are variations in the territorial rate levels and in the application of the principles in the several territories.

In all of the territories master or maximum distance scales of first class rates are to be found applicable throughout the territories. The rates are based upon an initial rate for the terminal services at origin and destination and the clerical services incident to initiating and terminating the shipments and for the first five miles of haul. Thereafter the rates are usually graded upward by 5 mile distance blocks up to 100 miles, by 10 mile blocks up to 240 miles, by 20 mile blocks up to 800 miles, and by 25 mile blocks beyond 800 miles. In each case a cent or a few cents is added to the first class rate for each successive distance block.

The rates applicable to classes lower than first class are constructed by applying standard relationships of classes lower than first class to the first class or column 100 rates.

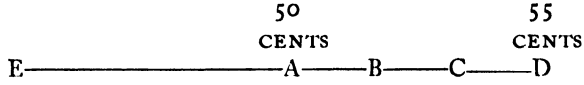
In addition to the standard classes many commodities are assigned generally to column or percentage relationships to the first class rates.

The distances for rate making purposes are computed by the short line route between the points of origin and destination via combinations of railroads via which carload traffic can be interchanged without transferring the lading of the cars. In Southern territory the number of separate lines which can be used in computing short line distances is restricted to a maximum number of lines for routes within certain distance limits.

Short lines, branch lines, financially weak railroads, and those serv-

ing territories of relatively light traffic density are given financial assistance by being given additional revenues through rates higher than the standard rates applicable in the territories.

Traffic moving between important centers of production, distribution and consumption are frequently given lower rate levels than traffic moving for the same distances between less important traffic centers by the construction of key rate points between which key rates are lower than the maximum or master mileage scales of rates. These key rate points include important manufacturing centers, ports, railroad terminal junctions, river crossing, and other important trade and traffic communities. The key rates are applied to all main line points between one key point and the next key rate point to or from which lower key rates are applicable.



Thus in the diagram above the key rate from A to E is 50 cents per 100 pounds and from D to E it is 55 cents per 100 pounds. The rates from either B or C to E are 55 cents. The key rate applicable from D to E is spread or blanketed back to all intermediate points between D and the next key rate point.

The rates to or from all stations in large terminal areas are based upon the rates applicable to or from designated key or rate basing stations with an arbitrary mileage increment added so as to make the same rates applicable to or from all stations in the same terminal areas.

Container Rates

Originally rates upon freight shipped in containers were made upon a straight line rate per container per mile transported. These rates were found to disrupt the class rates upon goods shipped in regular services and were held to be unjustly discriminatory by the Interstate Commerce Commission in 1931.[6]

The freight rates established by the railroads upon merchandise shipments transported in containers are based upon the third class rates applicable upon the net weight of the freight in the containers subject to a minimum charge equal to the third class rate upon 4000 pounds.

[6] In the Matter of Container Service, I.C.C. Docket No. 21723 (173 I.C.C. 377) (1931).

In no case, however, may the rates applicable to shipments in containers be less than: (1) the highest carload class rates applicable to any article in the container; (2) the class rate next lower than that specified for any article in the container as an any quantity rate; or (3) the rate applicable to the highest rated commodity in the container applied to the entire contents of the container, when articles referred to in the first two alternatives are loaded in the same container.

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CHAPTER 12

Railroad Passenger Services and Charges

PASSENGER TRAFFIC AND REVENUES

Although slightly over 80 per cent of the operating revenues of the railroads are received from freight, the services performed by passenger trains are important from the carriers' standpoint and are of great economic, political and social significance to the country. Passenger train revenues, including passenger revenues and also revenues received from excess baggage, sleeping car, parlor and chair car, mail, express, milk and other passenger train services, now amount to somewhat under 15 per cent of total operating revenues, and certain additional incidental operating revenues are related to the passenger service. Passenger revenues alone amount to somewhat over 10 per cent, yet this exceeds the gross revenues obtained from the entire L.C.L. freight traffic of the railroads, and is but slightly less than the revenues obtained by them from the transportation of all agricultural crops.

Before 1923 passenger train revenues exceeded 25 per cent of total operating revenues and the gross passenger revenues alone amounted to over 20 per cent. The decline has been due largely to a decline in the volume of railroad passenger traffic not only during depression years but throughout the prosperous pre-depression period from 1923 to 1929. Railroad traffic has increased since 1933 but in 1938, measured in revenue passenger-miles, it amounted to but 56.7 per cent of the passenger traffic of 1923. Its peak was reached in 1920 with 47 billion passenger miles, in comparison with 21.7 billions in 1938. The major cause of the decline was highway competition. A secondary cause was the retention of standard fares, during most of the period of declining railroad passenger traffic, at levels higher than those which began to be established in 1933. Travel as a whole within the United States has increased enormously. The "Passenger Traffic Report" of the Federal Coordinator states that during the period 1920 to 1929 American travel desires and habits were quadrupled and that in 1933 at the end of four years

of severe depression, "they were still more than three times as great as they were prior to the automotive era." [1]

The net revenues derived from railroad passenger traffic have also experienced heavy declines. "Prior to 1921, passenger traffic on American railways produced about the same relative net operating revenue above operating costs as freight traffic. Even during the initial years of the highway onslaught (1921-1926) passenger traffic was self-supporting—its revenues being sufficient to discharge all expenses and taxes and leave a small operating income. During the succeeding seven years (to 1933), they were sufficient only to cover the sale expenses and part, but not all, of the passenger proportion of expenses, common to both freight and passenger service." [2] The operating ratio of the passenger service as a whole in 1938, as computed by the Interstate Commerce Commission, was 121.81 per cent in comparison with a freight service operating ratio of 66.89 per cent.[3]

PASSENGER TRAIN SERVICES

The passenger and freight services of the railroads differ in several ways, some of the differences being basic or fundamental in character while others are less pervasive than in the past. Freight is routed and shipped while passengers travel of their own volition and in most instances control the time and direction of their departure and arrival. Freight must be loaded and unloaded at terminals; it must be billed, checked, and routed; and less-than-carload freight must be handled not only at freight stations but frequently also at transfer houses and junction points. Yards and freight houses or storage warehouses, moreover, must be provided for handling and storing freight cars and merchandise. The passenger stations provided in the larger cities are costly structures, but the terminal facilities needed in the freight service as a whole are more costly and far more expensive to operate.

Differences appear also in freight and passenger train operation. Much freight is moved in carloads or trainloads, the freight car being delivered to the railroad's operating forces when it is loaded, the train being dispatched when a desired tonnage has been attained, while

[1] Section of Transportation Service, Passenger Traffic Report, p. 21.
[2] Ibid., p. 13.
[3] I.C.C. Statistics of Railways (1938), pp. S-89.

passenger trains are operated on fixed schedules. This distinction, however, now applies less generally than in the past for, as was stated in Chapter 5, there has more recently been a demand for greater regularity and promptness in freight deliveries. Tonnage freight trains, whose departure is governed mainly by the number of loaded and empty cars offered for shipment, however, remain a distinctive feature of the freight service, and scheduled freight train services are as a rule not offered until an adequate volume of freight is quite regularly available.

Passenger train operations also differ from the freight train service in that greater emphasis is placed upon speed, frequency, safety, and convenience. The major demand of shippers for many years was for low freight rates, and the railroads consequently strove to reduce the cost of handling and moving freight. It is only recently that shippers and carriers have begun to emphasize speed and regularity in the freight service. The expedited freight services of the railroads and motor truck carriers are indeed beginning to influence the distribution and production policies of American industry. In the passenger service, on the contrary, the ideal has always been to increase the speed of trains and to reduce the risks and discomforts of travel. It is only recently that reduced fares as well as service excellence are being emphasized in the passenger service.

The various types of passenger trains operated by American railroads may be subdivided into (1) suburban passenger trains, which perform a distinctive local service within and near metropolitan areas; (2) local passenger trains which stop at numerous intermediate points and which may be further subdivided into main line locals and branch line locals; (3) limited passenger trains which stop at but a relatively few intermediate points in the performance of a fast through service, and which vary everywhere from the slowest through trains operated at reduced speed and stopping at all of the larger intermediate points to the fastest modern de luxe trains operated at maximum speed, and with a minimum of intermediate stops; [1] (4) motor trains, operated on both

[1] Limited trains are defined in various ways. The Passenger Traffic Report of the Federal Coordinator states that a limited train may be "a train (other than a suburban train) meeting any one or more of the following specifications: (1) bearing a distinctive trade name; (2) operating at over all speed of 40 miles per hour, or more, for distances over 200 miles; (3) operated for distances over 300 miles with scheduled passenger stops at intervals averaging not less than 50 miles each."

main and branch lines by a number of railways, and (5) mixed trains made up of both freight and passenger cars.

Highway transportation has in some instances been substituted for local passenger train service where individual railroad managements have considered the change economical and desirable.

CLASSES OF PASSENGER SERVICE AND FARES

Different classes of passenger service designed to meet the varying needs of the traveling public are provided by railroads everywhere. European railroads offer from three to five distinct classes of service and in most European countries a special service offered at exceptionally low fares in workman's trains is provided for laborers. Of the three standard classes of service most commonly provided, third-class service is provided in cars or compartments equipped with comfortable, but frequently unupholstered, seats. The second-class passenger is provided with an upholstered seat and adequate toilet facilities, and he is given more room. Compartments assigned to first-class passengers are similar as to the comforts provided but are more elegantly fitted. The difference between second- and third-class service in England is slight, both being similar to the second-class service offered by the railroads of Germany, and some English railways have merged the two lower classes into a single second-class service. The fares charged in the several classes take into account the difference in cost of service, the heavy volume of traffic moving in the lower classes, and the ability of different classes of people to pay higher or lower fares. Slow and fast passenger trains, moreover, are operated by European railways and the difference in the speed of trains is considered in the making of fares. The sleeping-car facilities provided in Europe are also offered at fares which take into account the class of service in which the passenger is traveling.

In the United States the policy of providing three or four standard classes of services has not been adopted. Railway men have not been convinced of the effect such a policy would have upon the volume of passenger travel. The distinction between standard coach service and the reserved or Pullman service performed in sleeping and parlor cars has, however, become general throughout the country. The former, sometimes referred to as "limited service," is offered at standard fares. The latter was for a time offered at standard fares plus a surcharge upon

Pullman fares, but at present the reserved service is performed at definite fares which exceed the standard coach fares now in effect in different sections of the United States by varying amounts. The Commission also expressed the opinion that there is no reason why passengers receiving coach service on certain unusually fast trains "should not pay a higher rate than is charged for standard coach service." In addition to the fare charged by the railroads for the transportation service performed by them when hauling Pullman cars in which reserved services are provided the passenger is also required to pay a special sleeping or parlor car fare.

In addition to these passenger services the railroads variously offer services especially designed to meet the need for special or irregular services and for certain regular services at reduced fares. (1) Commutation fares are regularly offered to meet the demands of surburban traffic for tickets entitling commuters "to daily travel, or to a limited number of trips, between designated points and for a fixed period of time, at a rate per mile substantially below the comparable base fare." [5] (2) Immigrant and colonist services have at times been offered at the larger Atlantic ports to bona fide foreign immigrants at reduced fares, a special service being performed in immigrant trains or cars when this traffic was heavy. (3) A second-class service has at times been offered by individual railroads, but this class of service has not been generalized. On some western lines "tourist sleeping cars" are provided at reduced fares for railroad and sleeping car tickets. (4) Western railroads have at times granted reduced fares to colonists and homeseekers to encourage settlers to locate in the territory served by them, and in some instances to purchase railroad land. (5) Lodges, schools and similar groups of persons wishing to travel together may on most railroads travel at special party rates.

(6) The excursion services performed only on special occasions or during certain seasons are the most widely known of the irregular passenger services offered by American railroads. Summer and winter excursion tickets valid only during limited seasons are sold in the first-class service to encourage pleasure travel to summer and winter resorts. General excursion tickets are usually issued at reduced round-trip fares in the regular first-class service to particular points at which a world's fair or other important event of interest to the general public

[5] Passenger Traffic Report, p. 259.

is being staged. Special excursion tickets usually valid on regular trains are frequently offered at reduced round-trip fares to groups attending conventions, sessions of large organizations or other gatherings; the certificate plan usually being employed to restrict the reduced fares to the persons for whom they are intended. Special excursion fares valid only on designated excursion trains, moreover, are at times offered to the general public on particular days to seashore resorts or other points of interest. (7) Occasional "all-expense trips" are provided by American railroads. "Some railroads maintain tour departments and provide all-expense tours covering certain points of special interest to the public, and all railroads are constantly figuring on special all-expense tours promoted by individuals or outside agencies." [6]

The factors entering into the determination of passenger fares are similar to those referred to in connection with freight rates, but differ from them in certain respects. Both are made primarily with reference to "what will move the traffic," which falls within the value of service principle, but the governing influences work out in a somewhat different manner. Interregional rivalry is far less pervading than is the commercial or industrial competition of rival markets and production areas, and the railroads also encounter less inland and coastwise water competition than in their freight service. Interrailway competition has been on the whole less influential in the making of passenger fares not only because of these related differences but also because most of the railroads have always depended upon the freight service for the major part of their operating revenues. Passenger traffic has, however, been affected even more severely by highway competition than railroad freight traffic, and this competitive factor has of late years influenced passenger fares very definitely.

Cost of service is, however, ever present as a rate factor in the passenger service. The high passenger operating ratio indicates at once the pressure which passenger service costs offer to a reduction in fares and also the fact that fares are influenced by value of service and competitive factors. Passenger fares, moreover, are less complicated; they can be graded on a mileage basis more readily than freight rates, and this results in a somewhat closer approximation of varying service costs for trips of different length. The volume of traffic moving in opposite

[6] Federal Coordinator, Conclusions on Passenger Traffic (Comments of Association of American Railroads), p. 54.

directions, is more evenly balanced in the passenger than in the freight service and less effort has been made to grade fares in accordance with the varying abilities to pay of different classes of passengers than is customary in Europe and less than is customary in the making of freight rates in the United States for different classes of freight or commodities.

The principle of increasing returns and diminishing costs has long been recognized in the railroad passenger service, but the extent to which it should be applied as a governing force in making fares has resulted in wide differences of opinion. In making excursion fares and other reduced fares railroad passenger traffic officers have in many instances witnessed increased traffic, reduced unit costs and more favorable net operating revenues. Railroads have, however, opposed a regularly classified service such as is offered in Europe because of the assumed opposition of passengers to class distinctions in the United States, and the fear that it would affect revenues unfavorably. They adhered to the policy of depending mainly upon a standard first class coach service at rather high basic fares and a reserved service at even higher fares, in the belief that fare reductions would not increase traffic and reduce unit costs sufficiently to result in greater net revenues.

The drastic loss of traffic resulting from highway competition eventually caused the railroads operating in several important territories to revise their attitude as to reduced standard coach fares. The alternative of offering definite classes of reduced fare services was rejected, but in 1933 some of the carriers of the South experimented with a 2 cent standard or basic coach fare and some Western railways began similar experiments even earlier. In December, 1935, the Southern carriers generally adopted a basic fare of 1½ cents on coaches and 3 cents on reserved cars one way or 2½ cents for round trips. They also discontinued the surcharge upon Pullman fares. Western railways adopted the same fare policy, their basic coach fare, however, being set at 2 cents per mile. Eastern railways continued to charge a basic coach fare of 3.6 cents, but in June, 1936, the Interstate Commerce Commission's order to establish maximum basic coach fares and reserved car fares of 2 and 3 cents respectively, forced them to adopt these fares throughout Eastern territory. Some of the Eastern carriers favored this fare reduction in the belief that the principle of increasing returns and diminishing costs would operate to their advantage; others opposed it on the ground that on their lines a substantial increase in traffic would make

necessary additional cars or trains and also that a heavy increase in traffic was doubtful.

Although passenger traffic increased largely in the South, where the fare reduction had been largest, and passenger revenues advanced substantially, the Southern railways in 1937 advanced their basic coach fare to 2 cents, and their roundtrip fare in reserved cars which, after the original reduction in 1933, had dropped as low as 2 cents was advanced to 2¼ cents. Western railways did not change their standard one-way fare in coaches but effected certain advances in their round-trip coach fares, round-trip Pullman fares and special fares to the West Coast,[7] Southern and Western carriers were free to effect these advances which were within the maximum fares set by the Commission. The Eastern carriers, however, could not advance their fares without specific approval by the Commission. In the fall of 1937 they applied for permission to increase their basic coach fare to 2½ cents and they obtained the necessary permission as to interstate travel in July, 1938 for an experimental period of eighteen months. The fare increases of 1937 and 1938 were part of the general program of the railways to increase their freight rates as well as their passenger fares because of the rising level of railroad operating costs.

The railroads are clearly experimenting in an endeavor to ascertain the effect of fares at different levels upon gross and net passenger revenues and volume of passenger traffic. Various Eastern railroads reduced their standard round-trip coach fares by 20 per cent and their Pullman transportation fares by 10 per cent in December, 1938 for temporary application during the holiday season. Effective January 15, 1939, the standard coach fares of the lines operating in Southern territory were reduced from 2 cents to 1½ cents per mile. Later in 1939 the Eastern lines again adopted a policy of reduced fares and in 1940 the Commission reduced the basic coach fare to 2 cents.

SLEEPING AND PARLOR CAR SERVICE

Sleeping cars of a kind were provided by various railroads beginning as early as 1836-37 and some sleeping and parlor cars are now owned by railroads.[8] The dependence of nearly all carriers upon the Pullman

[7] Bureau of Railway Economics, A Review of Railway Operations in 1937, p. 11.

[8] I.C.C. Statistics of Railway (1938), p. S-20 and S-25; Sleeping cars owned by railroads, 123; by Pullman Company, 6615. Parlor Cars owned by railroads, 278; by Pullman Company, 947.

Company has, however, become so general that the sleeping and parlor car service is commonly known as the Pullman service. George M. Pullman converted several passenger coaches into sleeping cars for the Chicago and Alton in 1854 and built his first Pullman palace car in 1864, and in 1867 he organized the Pullman Palace Car Company. Since then the Pullman Company has become a vast enterprise which owns, operates, and builds railroad equipment.

The advantage to the railroads of rented Pullman cars is mainly in their great mobility. As in case of privately owned refrigerator cars for fresh fruits and vegetables, the Pullman cars can readily be shifted about from one line or district to another in strict accord with varying traffic requirements. The volume of passenger traffic in different sections of the country is subject to seasonal fluctuations and is at times increased temporarily by special events, such as large expositions or conventions. The country as a whole, however, is so large that the unusual demands of different lines or regions can frequently be met by a prompt redistribution of Pullman cars. The rental system has been economical because it has resulted in a more intensive use of sleeping and parlor car equipment. If each railroad provided itself with an adequate supply of sleeping and parlor cars most of the roads would be burdened with a surplus of idle cars much of the time unless they succeeded in renting them to other carriers. The Pullman car system by centralizing this business of renting cars wherever they may be needed is especially efficient and elastic. It is conceivable, of course, that the consolidation of railroads into large systems serving very extensive areas may in the future warrant a heavier investment in sleeping and parlor car equipment by the railroads themselves.

Pullman cars are rented to the railroads in accordance with the terms of definite contracts. These contracts vary in many respects,[9] but the Pullman Company usually agrees to furnish an adequate number of cars of a quality which is variously defined; to keep the interior of the cars clean and serviceable; to provide Pullman conductors, porters and other employees and linen, blankets, etc.; to bear the expense of repairs due to ordinary wear and tear; to reimburse the railroads for taxes and to indemnify the railroads against claims of various sorts. The Pullman Company is also granted the privilege of charging sleeping car and parlor car fares for its services. The railroad companies variously agree

[9] See Appendix I, Conclusions of Federal Coordinator on Passenger Traffic (1936).

to sell Pullman tickets; to provide storage space where bedding may be stored and aired, and cars cleaned; to haul and switch Pullman cars; to lubricate them, provide ice and water, heat and light and clean the outside of the cars; to repair damage to cars resulting from the negligence of railway employees or by reason of accident; to transport Pullman officers and employees free of charge; to cooperate in forming through or continuous lines of sleeping and parlor car service; and to grant exclusive rights to the Pullman Company, subject to specific exceptions.

Operating expenses, it will be noticed, are divided between the carriers and the Pullman Company. The earnings of the Pullman Company are derived mainly from the Pullman fares charged by the company. The railroads receive their returns mainly from the railroad passenger fares collected by them, these being higher than their standard coach fares. Most Pullman contracts, however, provide that when the average earnings per car of the Pullman Company exceed specified amounts per year the excess or fixed percentages of the excess shall be paid to the railroads. Some contracts further specify that when the average earnings per car fall below set amounts per year the railroad guarantees to pay to the Pullman Company a sum sufficient to raise them to the required figure. Some railroads agree to pay mileage rentals to the Pullman Company. Special supplemental agreements have also been entered into during recent years in connection with the new type lightweight cars provided for certain modern fast passenger trains and with the air conditioning of Pullman cars.

DINING SERVICE

Railroads in the United States provide accommodations for serving food to passengers traveling over their lines either through dining or buffet cars, or through dining stations at which the trains are stopped while the passengers are served regular meals in dining rooms at or close to the stations, or a la carte meals at restaurants. The latter form of dining service is extensively used by several railroads west of the Missouri River, one of the best known of which is the Fred Harvey service of the Atchison, Topeka and Santa Fe Railway. This railroad serves meals on dining cars on its through express trains as well as at station dining rooms.

Dining car service has been extensively provided since 1890 on all through trains in the United States. The service was installed first on a few limited trains of each road and was gradually extended to include virtually all long distance trains. The dining service requires a large organization which, under the supervision of a Superintendent or otherwise designated officer, purchases, prepares, and serves food on the company's trains. The service, contrary to common opinion, is operated at a heavy loss. The average initial cost of a dining car is approximately $75,000 and its equipment represents a large additional investment. Service costs are high because of the large fixed expense and the labor required in preparing and serving meals. High charges on the one hand tend to restrict patronage and, on the other, inadequate patronage tends to increase unit costs.

Efforts have been made to supplement and in some instances to supplant dining car services with less expensive buffet and cafeteria car services; by serving reserved car passengers in their own cars; by serving less formal meals to coach passengers in their own cars, and, in other ways. But the dining service as a whole is costly and is frequently regarded as a means of developing traffic rather than as a direct source of profit.

PASSENGER TRAFFIC DEVELOPMENT

Although most American steam railroads depend primarily upon the freight service, they nevertheless engage actively in the promotion of their passenger traffic. An adequate passenger service must be maintained regardless of relative profits, and with an average trainload of but 54.9 in 1938 it is quite generally recognized that a large increase in traffic volume could be accommodated without a proportionate increase in operating expenses. The principle of increasing returns and diminishing costs is a strong incentive to traffic development in the passenger service.

The Passenger Traffic Department of every large American railroad contains traffic officers whose efforts are expressly devoted to traffic development, and passenger traffic solicitors are employed to solicit business. City ticket offices are maintained at favorable locations in large cities, and off-line agencies are maintained by connecting lines. But personal solicitation is depended upon to a less degree than in the freight

service because the millions of individual passengers who comprise the bulk of passenger traffic cannot be solicited personally except at prohibitive expense to the carriers. The Passenger Traffic Department depends also upon advertising. Public advertising in newspapers and magazines, and, in the form of time-tables, folders, maps, descriptive booklets, posters, pictures, window signs, billboards, electric signs, street car advertisements, calendars, is usually directed by the advertising agents of the carriers' Passenger Traffic Department. A systematic effort is made to inform currently the ticket agents of connecting lines as to direct connections, superior service, reduced fares for conventions or expositions, and similar matters of interest. Mailing cards or leaflets, booklets, time-folders, maps, newspaper clippings, and other advertising material are regularly forwarded to them, and traveling passenger agents are sent out to follow up their printed matter.

Much of the passenger traffic advertising emphasizes the superior service offered by particular lines. The speed, comfort, and safety of certain of their trains, the quality of their dining car service, the frequency of their service to certain points or other evidences of superior service are impressed upon the public by an endless variety of advertising methods. Many advertisements also center about regions or points of interest—the seashore, the mountains, the lakes, parks, forests, great cities, and farming regions—and the splendid opportunities for recreation or for earning a livelihood to be had at points served by the advertising railroad. Some of these advertisements have the double purpose of promoting freight traffic as well as passenger travel.

These efforts at traffic development were not in themselves able to prevent the heavy decline in passenger traffic which occurred when the automotive era got under way. They were handicapped somewhat by the passenger fare policy previously referred to. The more recent policy of reduced standard fares as well as active development effort and improved services may in the future bring about a substantial revival of railroad passenger traffic. Together they may regain a part of the lost traffic and also create new passenger travel.

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CHAPTER 13

Railway Express Services and Rates

The domestic express business has for many years been related principally to the railroad service in the United States. The express companies forward shipments entrusted to them chiefly over the lines of the railroads with which they have entered into contractual relation, although parts of the services including collection and delivery are performed by motor vehicles, and in some cases steamships or other carriers are used in the performance of the line-haul express service. The stagecoach and saddle horse and the inland and coastwise steamboat are of little importance in the express business now although all these agencies at one time performed important roles. Only a small part of the express companies' traffic is transported by electric railways. An increasing portion is being performed by motor trucks. The most recent development is the use of airplanes by the Railway Express Agency, Inc.[1] In transporting express matter between the United States and foreign countries, other than Canada and Mexico, ocean steamship lines are necessarily the carriers employed and these international express services will be discussed in a later chapter.[2]

The dominant characteristics of the domestic express business are the speed, care, and convenience with which express shipments are made, and these characteristics largely determine the volume and nature of express traffic. In the shipment of small parcels of merchandise the general railroad practice of basing minimum railroad freight charges upon a weight of at least one hundred pounds is also a consideration,[3] and articles of extraordinary value are often transported by railway express service because of the general shipping rule of the railroads excluding them from the freight service. Express traffic is made up principally of parcels of merchandise, particularly of commodities of light weight and high value; books and other printed matter; coins, currency,

[1] See Chapter 24.
[2] See Chapter 33.
[3] See Chapter 11.

precious stones, valuable papers, and other articles of extraordinary value; and perishables requiring unusual speed and care in transportation. Other commodities are also accepted for transportation by express service. These articles include heavy or bulky goods shipped either in small or large quantities. Carload lots of commodities that are customarily shipped in the railroad freight service sometimes move by express. As express traffic usualy moves on passenger or fast express trains, the express service is relied upon when an unusually prompt delivery of such commodities is desired.

HISTORY OF EXPRESS COMPANIES

The early dependence of shippers of parcels upon stage drivers, steamboat captains, railroad train conductors and accommodating travelers appealed to William F. Harnden of Boston as the basis for an organized express business.[4] About 1839 he obtained an express contract from the Boston and Providence Railroad authorizing him to carry parcels between New York and Boston. This was the forerunner of the present-day express business. His service was extended to Philadelphia and across the Atlantic to England in 1840, and in 1850 Harnden and Company extended the company's express business into the South. The success of this pioneer express company induced Alvin Adams to organize Adams and Company in 1840. It first competed for the New York and New England express business, but later also extended its services southward and westward. Several other express companies also began to compete for express traffic at an early date, and in 1854 Adams and Company, Harnden and Company, Thompson and Company, and Kinsley and Company were consolidated into the Adams Express Company. In 1841 Livingston, Wells and Company began to operate between Albany and Buffalo, and in 1845 Wells and Company was organized to operate westward from Buffalo over a steamboat and wagon route. Butterfield, Wasson and Company began operating over the New York Central in 1850, and later during the same year a consolidated company, the American Express Company, was organized. The National Express Company was formed in 1853 to operate in New York and New England.

[4] For early history see A. L. Stimson, History of the Express Business, and E. R. Johnson and G. G. Huebner, Railroad Traffic and Rates, Vol. II, Chap. XXXVII.

Wells, Fargo and Company was organized in 1852, and gradually extended its activities throughout large parts of the Far West. The United States Express Company was organized in 1854 to perform an express service in the Central West and in 1894 the Western Express Company began operating in the Northwest and in Michigan and Wisconsin. The Southern Express Company began to operate throughout the southern states in 1886. Several smaller independent express companies were also formed during these years of organization, but they were soon consolidated with one or another of the larger companies. A number of affiliated express companies were also organized by several railroads.[5]

During later years consolidation gradually reduced the number of express companies. The business of the Pacific Express Company, for example, was taken over by Wells, Fargo and Company in 1911, and that of the National Express Company by the Adams Express Company in 1912; and financial difficulties caused the United States Express Company to discontinue operations in 1914. When the railroads were placed under Federal control late in 1917 it was found that four large express companies—the Adams, Wells-Fargo, American and Southern—held express contracts covering about 92 per cent of all railroad mileage and controlled about 95 per cent of the domestic express business of the United States.

The Director General of Railroads notified the express companies that the United States Railroad Administration was opposed to the prevailing plan under which the express business was conducted by several companies each with separate railroad contracts, and that he favored a single consolidated express company. The four large express companies then secured the business of the smaller companies by lease and organized the American Railway Express Company to take over the property of the four companies and conduct their entire domestic express business. The property exchange was made by accepting the capital stock of the consolidated company, the parent companies acting as holding companies and the American Railway Express Company as the operating

[5] The Globe Express Co. was organized by the Denver and Rio Grande and Rio Grande Western; the Southwestern and International Express Co., by the El Paso and Southwestern Railroad; the Canadian Express Co. by the Grand Trunk; the Pacific Express Co. by the Missouri Pacific, Wabash and Union Pacific; the Northern Express Co. by the Northern Pacific; the Great Northern Express Co. by the Great Northern.

company. The new company operated under contract with the United States Railroad Administration for a while, but was later placed under direct Federal control. Following the termination of Federal control the Interstate Commerce Commission, acting under authority received in the Transportation Act of 1920, authorized the continuation of the consolidation.

The express companies which retired from the domestic railway express business when their respective physical properties were transferred to the American Railway Express Company in 1917 have not gone out of corporate existence. The Adams Express Company is a financial investment trust. The American Express Company is engaged in the international express and exchange business. Wells, Fargo and Company is engaged in express service in Mexico and in other business enterprises.

The American Railway Express Company controlled about 96 or 97 per cent of the domestic express business. It had the field to itself until 1921 when the Southeastern Express Company was organized to conduct the express business over some ten thousand miles of railroad mileage in southeastern territory. From 1920 until 1928, the American Railway Express Company carried on the bulk of the express business over the railways of the United States under individual contracts with the railroads based upon the financial terms prescribed by the Interstate Commerce Commission in December, 1920.

Prior to June, 1928 the Uniform Express Contract Committee of the Association of Railway Executives appointed a special legal committee to prepare an agreement for the purchase of the stock of the American Railway Express Company, or to consider and report upon the formation of a new express company. The legal committee submitted its report and a plan for the future conduct of the express business on June 21, 1928. This plan was adopted by the Association and on July 2, 1928, the presidents of four leading railroads: the Atchison, Topeka and Sante Fe Railway, the Pennsylvania Railroad, the New York Central Railroad, and the Union-Pacific Railroad were appointed agents for the Association of Railway Executives. They notified the American Railway Express Company that the participating carriers (1) would not renew the contract between the American Railway Express Company and the railways; (2) nor would they enter into any negotiations for any new contracts with it for the operation of express transportation

business, and (3) the American Railway Express Company must cease its operations over the various lines after midnight February 28, 1929.

The 86 railroads, comprising substantially all the members of the Association of Railway Executives, were doing about 98 per cent of the gross express business and, in addition, there were about 300 short lines affected by this move. The Railway Express Agency, Inc., was organized, and the shares of stock of the Express Agency were allotted to each railroad according to the ratio that the express business handled on each company's line, measured by receipts, bore to the gross business handled by all participating carriers, using as a basis for such computation the average for the years 1923-26 inclusive.

The Railway Express Agency, Inc., was organized with a board of 15 members, of which 14 are to be nominated by districts and one at large. The United States was divided into three districts, each with the following number of directors: Eastern District 6; Western 5; and Southern 3.

Each railroad owning shares of stock of the Railway Express Agency, Inc., is deemed to be a member of the district in which its line of railroad is located, or if in more than one district, of the district in which the greater portion of its single track mileage is located.

On January 23, 1929, the Railway Express Agency, Inc., and the agents representing the railroads entered into an agreement which provided that the American Railway Express Company should sell and the agents purchase all properties owned by the American Railway Express Company as of February 2, 1929. The property bought consisted of equipment; buildings, whether on land owned or not owned by the American Railway Express Company; the parcels of land listed in a memorandum annexed to the agreement, and all material and supplies.

Material and supplies were acquired at their book value; buildings and equipment at book value, less depreciation; and the parcels of land at an agreed figure of $8,270,000. The total purchase price of all of the properties was fixed at $30,313,000. The Railway Express Agency, Inc., assumed all obligations and obtained all contract assets and contract asset accounts.

Uniform operating agreements are executed between the Railway Express Agency and each participating carrier that executed the agreement of July 2, 1928, with the agents. Identical agreements were made with other railroads which formerly had contracts with the American

Railway Express Company. These agreements granted the Railway Express Agency, Inc., the privilege of conducting the office business on their lines. The agreements took effect on March 1, 1929 and are to continue until midnight February 28, 1954, a period of 25 years. Under the terms of the agreements each railroad appointed the Express Agency as the exclusive agent for conducting and transacting all the express transportation business on its line. The agreements also set forth the terms and conditions to govern the conduct of the express business, the equipment and facilities to be furnished, the rentals payable by either party for the use of property of the other, arrangements for joint-employees and liability as between the parties for damages or injuries, and other contractural rights and liabilities.

Under Section III of Article II, of the Contracts, the Railway Express Agency may engage by means of motor truck, aircraft, or other instrumentality than railroad trains in the transportation of property which would otherwise be transported on trains of the railroad executing the agreement, but only with the consent of that company and of other carriers executing like agreements which would participate in such transportation if conducted by railroad. Under Section II of this article the railroad reserves the right to transport any property independently of the agreement by means of motor truck, aircraft or other instrumentality of commerce than railroad trains and to perform in connection therewith the auxiliary transportation service that is known as pick-up and delivery.

Article V outlines the procedure to be followed in determining the earnings available for payment to the participating railroads. To insure and to preserve a proper and equitable proportion of all competitive business to the participating carriers the express agency agreed to divide the competitive business upon a fair and equitable basis among the railroad carriers, giving due consideration to the distribution of competitive traffic handled by the carriers during the three years ending December 31, 1928, and to the elements of service, direct routing, car supply and terminal facilities.

Short lines which were parties to the Uniform Express Contract of the Association of Railway Executives have the privilege of participating in the operating agreements.

The capitalization of the Railway Express Agency, Inc., consists of 1,000 shares of capital stock without par value, and $32,000,000 of 5%

serial gold bonds, Series A, of which $800,000 are to mature semi-annually.

The particular portion of the operating agreement to which the authority of the Interstate Commerce Commission extends and which required the approval of the Interstate Commerce Commission on account of Section 5, Paragraph 1, of the Interstate Commerce Act is the arrangement for the pooling of earnings embodied in Article 5. This pooling arrangement is substantially the same as the arrangement for the division of earnings among the American Railway Express Company and the carriers under the previous uniform express contracts. Differences are due to the fact that the American Railway Express Company was privately owned and operated for a profit, while the Railway Agency, Inc., is controlled by the participating carriers and the earnings remaining after accounting for all items of income and deduction therefrom are considered rail transportation revenue and paid to the carriers within the specified groups entitled to receive it.

The Southeastern Express Company continued to operate over the lines of the Southern Railway, the Mobile and Ohio Railroad and 27 smaller railroads in the South until August 1, 1938, when the operation was taken over by the Railway Express Agency, Inc. The Southern railways were accorded proportionate ownership upon the same basis as the 86 Class I railways already participating in the ownership of the Railway Express Agency. The addition of these carriers brings the railway mileage over which the Railway Express Agency operates to approximately 210,000 miles of railroad. Virtually all of the domestic railway express traffic is now transported by the Agency. The Railway Express Agency operates one of the largest fleets of motor trucks in the United States in the collection and delivery services performed in connection with railway express traffic and as the cartage agent of certain railroads which use the R. E. A., as local cartage agent in these railroads' store-door freight services. More than 9300 motor vehicles are operated in these services.

THE RAILROAD EXPRESS CONTRACT

The uniform contracts under which the Railway Express Agency, operates over the lines of the railroads were approved by the Interstate Commerce Commission. These contracts are known as the

Amended Uniform Contracts for Express Operations, effective March 1, 1923. The express carrier's gross revenues accruing to each railroad are credited to each railroad. The balance remaining is distributed among the carriers in each of the four defined groups or territories—the Eastern, Southern, Western and Mountain-Pacific groups. The express carrier's rail transportation revenues are divided among the rail carriers in the ratio that the amount earned each month by each carrier bears to the total earned by all carriers. Eighty-five per cent of the express receipts from carload traffic are paid to the rail carrier or carriers over the lines of which the shipment moves and the balance is set aside as express transportation revenue. The Railway Express Agency, has the status of a jointly-owned-non-profit corporation functioning as a type of interrailroad pool for the transportation of express traffic.

In 1937 the total operating revenues—the sum remaining after express privilege payments were made to the railroads—amounted to about $109,000,000, but their operating expenses were so heavy that the net operating income amounted to only $7,399,664.94. Between 1923 and 1929 the express companies paid to the railroads 49.9 per cent of express revenues. From 1930 to 1937 the amounts paid to the railroads have decreased. In 1937 the percentage paid to the railroads was 35.07 per cent. The express agency must necessarily maintain a general business organization, and a large staff of express agents, car messengers, route agents and station employees. Although the railroads provide space at their terminals for the handling of express traffic, the express agency bears the expense of operating its express stations. It also agrees to assume the risk of loss or damage to property or persons, and under the terms of its contracts it agrees to carry free of charge money or packages pertaining to the business of the railroads over whose lines it operates.

BUSINESS ORGANIZATION

The business organization of the Railway Express Agency presents several important and interesting departures in transportation carrier organization. The Executive Department consists of a President, a Vice President and General Counsel, a Vice President and Treasurer, a Vice President in Charge of Personnel, a Vice President in Charge of Accounting, a Vice President in Charge of Traffic including rates, tariffs

and other aspects of traffic excepting sales, a General Sales Manager with jurisdiction over sales and solicitation aspects of traffic, a Secretary, a General Purchasing Agent, a General Superintendent-Automotive Department, and executive and other assistants to the President.

The separation of the rate and tariff functions of traffic from sales and solicitation is a noteworthy departure from standard transportation organization. Another departure from precedent is the fusion of traffic and operating functions in a transportation-traffic executive who reports directly to the President and has authority in both operating and traffic matters.

The operating department is divided regionally into four distinct organizations,—the Eastern, Southern, Central, and Western Departments,—each under the supervision of a regional Vice President in Charge of Operations. Within the regions the operating and sales forces function through General Agents, District Agents, and General, Division and District Sales Managers and Agents.

EXPRESS SHIPPING DOCUMENTS AND PROCEDURE

Scattered along the lines of the railroads are the Agency's many express depots. The practice of maintaining additional offices at convenient points within the larger cities is less common than formerly. The express depots are managed by express agents who in many instances are assisted by clerks or helpers and trucks or wagon drivers. The express service includes not only the shipment of express traffic from station to station, but in many cities also a general truck delivery service and a pick-up service under which many parcels are collected by express company drivers. Messengers are sometimes placed in charge of express traffic and cars while in transit. Route agents are sent out by the Division Superintendents to inspect the several routes and station agencies.

In its dealings with shippers the express agency usually issues a nonnegotiable *uniform express receipt* which roughly corresponds to a uniform straight railroad bill of lading. As the express agency performs C.O.D. and free delivery services, several special clauses appear among the terms and conditions that are printed on the receipt, and as its liability is limited to $50 in case of shipments weighing 100 pounds or less, or 50 cents per pound in case of shipments weighing more than 100 pounds, the value of each shipment is declared by the

shipper on the face of the receipt. In shipping livestock the express agency issues either a uniform contract for *ordinary livestock or a uniform contract for the transportation of animals other than ordinary livestock* which correspond in general with the two forms of livestock contracts used in the railroad freight service. A *uniform special contract* is issued upon receipt of paintings, pastels, pictures, statuary, and wax figures of a value in excess of $550.

To avoid the double collection of express charges the Interstate Commerce Commission in 1912 prescribed a system of *express labels*, *waybills*, and *waybill labels*. The express agent is required to affix to every shipment, except money, either a "prepaid" or a "collect" label, the former being printed on yellow and the latter on white paper. Express waybills of distinctive color for prepaid, collect, and C.O.D. shipments are also used, and the agent is required to affix a duplicate waybill label [6] to each shipment. Upon delivery of a shipment the consignee is requested to receipt for it either by signing the delivery book of the driver or a delivery receipt which is made out with the waybill and waybill label and is sent to the delivering agent with the waybill.

The general shipping rules applicable to the express business are published in the Official Express Classification. They are less comprehensive than the general freight shipping rules of the railroads,[7] but are concerned with similar matters, such as the application of rates and charges, the receiving and routing of shipments, the weight basis of express charges, refrigeration practices, packing and marking requirements, and maximum charges. They also contain rules governing various shipping practices which in the railroad freight service are governed by separate tariffs or codes of rules. The Official Express Classification, for example, contains the demurrage rules applicable to carload shipments. They differ from those of the railroads chiefly in that no average demurrage plan is authorized, and the demurrage charges imposed are higher. A general free time period of 48 hours is authorized, after which demurrage accrues at the rate of $10.00 for each of the first two days and $15.00 for each succeeding day. The express classification, moreover, contains rules governing storage, diversion and reconsignment, and the special payment of charges when the shipper or consignee requests a special switching or other transportation service not

[6] This differs from the express waybill in that it does not contain shipping directions.
[7] See Chapter 11.

(3000 8-34) Printed in U.S.A.

UNIFORM EXPRESS RECEIPT—NON-NEGOTIABLE

The Company will not pay over $50, in case of loss, or 50 cents per pound, actual weight, for any shipment in excess of 100 pounds, unless greater value is declared and charges for such greater value paid.

RAILWAY EXPRESS AGENCY

INCORPORATED

Issued at _____ 19____

Received from _____

Address _____

Subject to the Classification and Tariffs in effect on date hereof

No. Pieces	Article	Description	Weight

Value herein declared by Shipper to be _____ Dollars $_____ 100

CHARGES

Consigned to _____

At _____
(Number) (Street)

_____
(City) (State)

NO. PIECES

Which the Company agrees to carry upon the terms and conditions printed on the back hereof, to which the shipper agrees, and as evidence thereof, accepts this receipt.

HOUR

AM
PM

Thank You.
We value your patronage.

_____
For the Company

FORM 4

UNIFORM EXPRESS RECEIPT

performed by the express company nor provided for in its tariffs. As express companies perform a collection and delivery service and a C.O.D. service, the rules governing these services are also published in the Official Express Classification.

EXPRESS CLASSIFICATION AND RATES

The Official Express Classification [8] is published by the Railway Express Agency, Inc., in connection with the several express companies and government express departments of Canada and Newfoundland. The Southeastern Express Company was at the time of the publication of this Classification an independent participating express carrier. It is now part of the Railway Express Agency, Inc. It divides express traffic into three classes and in addition provides for a "money classification." First-class traffic is basic and includes all property not specifically assigned to a different class or otherwise provided for. Second-class traffic includes all food products and beverages and certain other articles such as hides of domestic animals, ice, specified plants and seeds. Books, almanacs, printed blanks, calendars, pamphlets, and certain other kinds of specified printed matter are rated as third-class express traffic subject to a valuation limitation and other specific rules. Certain articles because of their light and bulky character or because they occasion unusual risks of transportation are rated at multiples or multiples and fractions of the rates applicable to first-class traffic. The rating of coin, currency, uncoined gold and silver, securities, valuable papers, pawn tickets, precious stones, and other articles of extraordinary value and the charges made for money collection services are provided for in a special money classification.

The rates on first-class and second-class express traffic bear a definite relationship, the Interstate Commerce Commission having decreed that the rates on second-class shipments may not exceed 75 per cent of those on first-class traffic, except that the minimum charge is to be that for 10 pounds unless the first-class rate is less. In such case the first-class rate is applied. Third-class rates are one cent for each two ounces, subject to a minimum charge of fifteen cents and a proviso that they must not in any case exceed the rate in effect on first-class traffic. They are low because third-class shipments are accepted subject to a released value

[8] No. 32, effective April 1, 1934, and supplements thereto.

not exceeding ten dollars per package and because parcel-post competition is especially applicable to third-class express traffic. A new schedule of rates now before the Interstate Commerce Commission provides for a sliding scale of minimum charge up to 35 cents for long hauls. Special less-than-carload and carload commodity rates are also published by the Railway Express Agency.

When the Interstate Commerce Commission, in 1913, gave its attention to complaints charging double collection of charges, indirect routing and delays in the settlement of claims, it also investigated complaints charging excessive rates, unreasonable rate discriminations, and the confusing manner of publishing express rates. The Commission prescribed a system of express rates to become effective February 1, 1914. Although rates have been advanced several times and various changes have been made in the determination and application of express rates, the general rate system then promulgated by the Commission is now in effect. In arriving at first-class rates three sums were added together—an allowance for the collection and delivery service, a railroad terminal allowance, and a charge for railroad transportation varying with weight and distance. A general basis of rates has been adopted by the Commission for each of three (originally five) zones, zone 1 now comprising the northern and eastern, zone 2 the southern, and zone 3 the western section of the United States. The resulting first-class rates are stated between main "blocks" or "sub-blocks" rather than between specific express stations or points. Second-class rates, as was previously stated, are in turn based upon the rates assigned to first-class shipments and are also published between main blocks or sub-blocks.

The 950 main "blocks" between which express rates are published, are formed by the intersection of the parallels of latitude with the meridians of longitude, and are numbered according to horizontal tiers and vertical rows. Each main block is also subdivided into sixteen lettered "sub-blocks." The first- and second-class rates between express stations located in nonadjacent blocks are stated from one main block to another main block; and those between stations located in adjacent blocks are stated from one sub-block to another sub-block. Local express rates on first- and second-class shipments moving between the several sub-blocks of a given main block are also stated from one sub-block to another.

In ascertaining an express rate for first- or second-class traffic the

express agent or shipper first consults a joint directory of express stations which contains a list of all express stations in the United States and shows the block and sub-block within with each station is located. He then consults his local and joint-rate tables which contain the numbers of the rate scales applicable from each block to all nonadjacent blocks, and the numbers of the rate scales to be used in quoting rates between its sub-blocks and from its sub-blocks to those of adjacent express rate blocks. The rate scales in turn indicate the first- and second-class rates for weights varying from one to one hundred pounds. Shipments of greater weight are charged "pound rates," the rate for one hundred pounds shown in the rate scale being multiplied by the number of pounds in the shipment and the product so obtained divided by 100. In order to simplify rate quoting an express station located in an important city is supplied with a "block tariff" applicable from its particular block number. It is so arranged as to show the rate scale numbers applicable on shipments destined to all other blocks, and contains a schedule of first- and second-class express rates arranged by scale numbers.

The express rates shown in the rate scales are based upon a property value not exceeding $50 for shipments weighing 100 pounds or less, and not exceeding 50 cents per pound for shipments of greater weight. When the declared or released value of a shipment exceeds these limits, valuation charges are added at the rate of 10 cents for each $100 or fraction thereof of excess value.

The special carload and less-than-carload commodity express rates are published in commodity tariffs. As in the railroad freight service, these tariffs remove the application of the classification rating. They are used principally in connection with competitive traffic, especially in order to enable the Railway Express Agency to meet the competition of motor carriers in connection with certain types of traffic.

COMPETITION IN THE EXPRESS BUSINESS

Although the Railway Express Agency controls the domestic express business, it has keen direct and indirect competition. The express business has since 1913 had to share the package traffic throughout the entire country with the parcel-post service. The Railway Express Agency because of certain advantages of the service offered and because of an aggressive and comprehensive solicitation and traffic devel-

opment program, has been able to survive despite intense competition in the past decade. While the parcel-post service is subjected to weight limits, the express agency accepts packages of any weight. At the larger stations, moreover, the express agency collects as well as delivers shipments while parcel-post shipments are only delivered. The express agency issues receipts for each shipment while the Post Office issues a receipt only for insured parcels. Fragile articles when shipped by express are handled in safety trunks while the Post Office handles them in parcel bags. Express rates on long-distance traffic are in most instances lower than parcel-post rates when full allowance for parcel-post insurance charges is made, and although the Post Office has a rate advantage in its short distance business this advantage is at least partly offset in the larger cities where the express agency performs a package collection service.

The parcel-post service operates under the most favorable conditions in the long-distance small package business, and on rural free delivery routes where parcels are collected and delivered by rural mail carriers. Differences in liability and postal insurance charges, moreover, are not always considered by shippers. Many shipments are attracted by the low parcel-post rates on uninsured parcels.

Express traffic has also been affected somewhat by the many expedited freight services that are now being performed by the railroads. The extent of this competition, however, is less widespread than may appear, for the self-interest of the railroads is governed to some extent by their proprietary relationship to the Railway Express Agency. Railroad fast freight services, moreover, do not as yet compare favorably with the passenger train services of the express agency either in speed or care in handling.[9] Charges for cartage or for an industrial trap car service must be added when freight rates are compared with express rates, unless collection and delivery or trap car services are included in the railroad freight rates, and service differences must necessarily be considered.

Additional competition is afforded the express agency by the consolidated freight services of freight forwarders and others who undertake the consolidation of L.C.L. freight, and by the prompt and economical freight services of motor truck lines and privately operated motor trucks. Despite these varied forms of competition the Railway

[9] See Chapter 6.

Express Agency has maintained, and in the past several years it has enhanced, its position as an important instrumentality of freight transportation.

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CHAPTER 14

The Postal Service

The carriage of United States mails by the railroads is very much more important to business, society, and the carriers than the amounts paid for the transportation of the mails would indicate. In 1938, Class I railroads received $95,963,353 or approximately 2.7 per cent of their total operating revenues from the Post Office Department for mail transportation. An economical and rapid system of mail distribution tends to extend the social, economic, political, and intellectual horizon of the people of a nation by encouraging the exchange of social and business correspondence, and the circulation of newspapers, periodicals, and other literature. Economic activity depends in large measure upon the postal service. The interruption of the mail service for even a short period of time would inevitably curtail business.

The Post Office depends so largely upon the railroads for the transportation of the domestic mails, that the domestic mail service may from the standpoint of transportation be discussed as a phase of railroad service. The direct relations of the public are with the United States Post Office, under the direction of a Federal cabinet officer, the Post Master General. The Post Office itself performs a distinct service. Some of it is monopolistic in character and some of it is performed in competition with the express agency. The Federal Government has a monopoly on the performance of the transmission of mail. The railroads and other transportation agencies in either case receive compensation for their transportation services.

DOMESTIC MAIL SERVICES AND CHARGES

Being performed by the Government, the mail service is influenced less by revenue considerations and more by social considerations than are the freight and passenger services of the railroads and other carriers or the express service of the express agency. Mail is classified and postal charges are determined more largely on the basis of general social

and economic considerations. Postal deficits have not deterred the Government from keeping postage rates in general at a low level and offering costly services believed to be in the public interest.

Domestic mail matter is divided into four classes as follows:[1] first-class mail, comprising letters, postal cards, and all written and sealed mail matter; second-class mail, consisting of newspapers, magazines, and other periodicals containing notice of second-class entry; third-class mail, subject to a maximum weight limit of eight ounces, consisting of circulars and other miscellaneous printed matter, merchandise, books and catalogues of twenty-four pages or more, seeds, cuttings, bulbs, roots, scions (shoots), and plants; and fourth-class or parcel-post matter, subject to a minimum weight of over eight ounces, consisting of merchandise, books, printed matter, and all other mailable matter not included in first- or second-class mail. Within each of these classes further subdivision is accomplished by means of varying postage charges for different kinds of mail matter.

Much mail of all classes is accepted free of charge. Congress and the several departments and independent establishments of the Government exercise a free franking or penalty privilege, and mail sent by agricultural colleges and experiment stations, literature for the blind, and local newspapers for delivery within the county of publication except in cities having a free mail-carrier service, are carried free by the Post Office.

First-class postage rates are 1 cent for government postal cards, 1 cent for private post cards, and 3 cents per ounce for letters and written and sealed matter outside the city or community in which they are mailed where the rate is 2 cents per ounce or fraction thereof, when letter carrier service is performed, and 1 cent at other local offices unless the mail is collected or delivered by rural or star route carriers, in which case the local rate is 2 cents. Second-class postage charges are 1 cent for each 2 ounces or the fourth class rates whichever are lower. Third-class rates on circulars or other miscellaneous printed matter and merchandise are 1½ cents for each 2 ounces. Books, including catalogues, of 24 pages or more and other third-class matter mentioned above may be mailed at 1 cent for each 2 ounces; the 4th class rate is 1½ cents per ounce. Identical pieces of third-class matter may be mailed upon the permit system at rates of 8 or 12 cents per pound depending upon the

[1] For classification of foreign mail matter see Chapter 39.

type of articles, subject to a minimum charge of 1 cent per piece. A permit must be obtained from the local postmaster. The postage charges in the first three classes of mail service are flat rates applicable to all distances, except in case of second-class parcels weighing over 8 ounces.

In determining fourth-class or parcel-post rates it was not feasible to apply the principle of flat charges for all distances. Rates on merchandise, whether freight, express, or mail, must bear a relation to their effect upon the movement of traffic. Flat rates for all distances based upon short-haul parcel-post business would obviously result in an enormous postal deficit, while flat rates based upon long-distance business would seriously curtail the use of the parcel-post service by mail-order houses, manufacturers, farmers, and others desiring to mail merchandise to near-by markets. Although parcel-post rates are less closely related to distance than express rates,[2] the parcel-post zone system gives effect to wide differences in distance. The initial step was to divide the country into numbered units of area 30 minutes square, each unit being equal to one-fourth of the area formed by the intersecting parallels of latitude and meridians of longitude. Each of these units was then made the center of eight postal zones, the outer boundary of the first zone being a circle with a radius extending 50 miles from the center of any given unit taken as a basis, the second zone 150 miles, the third 300 miles, the fourth 600 miles, the fifth 1,000 miles, the sixth 1,400 miles, the seventh 1,800 miles, and the eighth includes all units beyond 1,800 miles. Each post office is supplied with a parcel-post guide which discloses the unit location of every post office, and with a parcel-post map on which are shown all postal units and also the zones for the unit in which the post office is located. The guide and map, however, are dispensed with at post offices located in the larger cities, a zone key directory indicating the zone location of all other post offices being used instead.

Parcel-post rates on packages to be delivered locally within any given postal unit are 7 cents for the first pound, and 1 cent for each additional 2 pounds. The rate on the first pound to units located within the first two zones is 8 cents, and to units located within the remaining zones is 9, 10, 11, 12, 14, and 15 cents respectively. When parcels weighing over one pound are mailed, these rates are applied to the first pound and each additional pound is charged for at the rate of 1.1 cent in the first

[2] See Chapter 13.

and second zones and 2, 3.5, 5.3, 7, 9, and 11 cents for each additional pound in the remaining zones.

Additional charges are collected when the sender of a parcel requests a special service. For fees ranging from 10 to 20 cents per parcel, depending upon size in addition to the parcel-post rates, fourth-class parcels marked "special handling" are accorded the same expeditious movement as first-class mail. Parcels or any other class of mail are accorded a special-delivery service upon payment of special-delivery fees varying from 10 to 35 cents for different weights. Third- and fourth-class parcels may be insured upon payment of insurance fees ranging from 5 cents for an amount not exceeding $5.00 to 35 cents for an amount not exceeding $200.00. Return receipts showing delivery may be obtained upon request and payment of a fee of 3 cents for each receipt, if requested at the time of mailing, and of 5 cents if the request is made after mailing. When a C.O.D. service is requested, a special fee ranging from 12 cents for an amount not exceeding $5.00 to 45 cents for an amount not exceeding $200.00 is charged.

When the domestic parcel-post service was established in 1913 a weight limit of 11 pounds was imposed. Since then the maximum weight of a parcel has been raised to 70 pounds, and a size limitation of 100 inches in combined length and girth has been imposed. The acceptance of parcels of such weight and size has enabled the parcel-post service to cut heavily into the package traffic of the express agency,[3] particularly shipments to or from points served by rural free delivery or star routes.

When the sender requests mail of any class to be carried by airplane, a special air mail postage rate is charged. The policy of the Post Office Department with respect to charges for air mail is discussed in Chapter 22.

Money orders may be obtained transmitting money from a sender at one post office to a receiver at another at fees of 6 cents for amounts up to $2.50, to 22 cents for amounts up to $100.

RAILWAY MAIL TRANSPORTATION

Prior to the advent of the railroads the Post Office depended principally upon the stagecoach for the transportation of the domestic mails. Horseback, carriage, packet and steamboat services supplemented the

[3] See Chapter 13.

stagecoach. The Post Office usually entered into contracts requiring individuals to carry the mails over particular routes; speed of transportation, frequency of delivery, and rates of pay being defined in each contract. The first railroad mail route was established about 1834, but its service was so slow and uncertain that "grave doubts were entertained as to whether the railway service could ever be made acceptable to the public or the Department." [4] The earliest railway mail services were performed through the usual contractors who made their own arrangements with the railroads. Later the Post Office entered into contracts directly with the railroads, and during the seventies the contract method was abandoned so far as railroad mail transportation was concerned, railroad mail routes being governed by congressional statutes and by orders of the Post Office Department.

As the stagecoach and steamboat routes were carrying the mails in closed pouches, the "pouch service" was also adopted on the railway routes. "Distributing post offices" were maintained for some years to facilitate the redistribution and forwarding of pouch mail but abuses arose and, beginning in 1859, "direct mailing" between post offices was gradually substituted. The entire system of distributing post offices was abandoned when the railway post-office cars came into use.

The "railway mail service" in which the mails are distributed en route by postal clerks in post-office cars or in baggage or compartment cars has since the early 1860's become an outstanding feature of mail transportation. The plan was first introduced in the United States on the Hannibal and St. Joseph Railroad in 1862 by William A. Davis, and on the Chicago and Northwestern Railway in 1864 by George B. Armstrong, who later became General Superintendent of the Railway Mail Service. Some mail is still carried by the railroads in closed pouches on fast mail trains, in the baggage cars of passenger trains, or in the caboose cars of freight trains, but a large part is carried in the railway mail service. In 1926 there were 902 full-sized mail cars equipped as post offices and 4068 additional cars containing postal compartments. In these cars the clerks of the Post Office Department distribute mail not only by cities, but also by substations of a large city, and mail to be delivered in business sections is ready for the mail carriers when the train arrives.

[4] General Superintendent Railway Mail Service, History of the Railway Mail Service, Exec. Doc. No. 40, 48th Cong., 2 Sess. (1885).

The "fast mail service" in which railroads operate fast trains consisting entirely of mail cars was first introduced in 1875. It has since become a quite general practice to operate "fast mail trains" made up wholly of postal cars when the amount of mail matter moving in a single mail over a route exceeds 50,000 pounds. In most instances, however, the post-office and compartment cars are operated as parts of passenger trains.

In 1911 the Post Office began the policy of establishing terminal railway post offices at the railway stations of large cities for the handling of a part of the mail formerly sorted en route. These terminal post offices made possible a reduction in the number of railway mail clerks and in car space, and much rehandling of mail matter was eliminated while expenses were reduced and the service expedited.

The primary mail service performed by the railroads is to provide the necessary equipment for pouch mail and such railway post-office and compartment cars as are requested by the Post Office, and to haul these cars as directed. The post-office cars provided by the railroads are built under Government specifications, and the companies are required to carry the mails on fast mail trains, passenger trains, or other trains selected by the Post Office. They are required to give precedence to the loading, dispatching, and unloading of the mails. They are penalized for leaving behind mail arriving at stations before the departure of the trains for which it is intended; for failure to make use of the first practical means available for the forwarding of mails delayed en route; for failure to receive or deliver mail promptly; for permitting mail to become damaged, lost, or destroyed, and for other delinquencies that are subject to fines in such sums as the Postmaster General may determine. The railroads are also required to install approved mail cranes for the unloading of mails from moving trains, and are penalized for failure to sound the proper signal when approaching them.

The railroads indeed perform a number of services not directly connected with the providing of mail equipment and the movement of mail-carrying trains. Mail is loaded into cars by railroad employees, and, excepting when cars are in charge of postal clerks, it is also unloaded by them. Transfers of mail from one car to another are made by the railroads. They are required to take mail from, and deliver mail into, post offices located not more than 80 rods from railroad stations, excepting at places where the post office performs its own messenger

service. They must also give preference to mail traffic in providing terminal space and in the placing of postal cars.

There has from the very beginning been contention between the Post Office and the railroads concerning methods and amounts of compensation. The first railway mail act, enacted in 1838, declared all railroads to be post routes, and it authorized the Postmaster General to enter into contracts with them and to determine the compensation of each carrier subject to a maximum 25 per cent in excess of what similar transportation would cost in post coaches. In later acts Congress established different maximum rates of railway mail pay at varying yearly amounts per mile, and in 1872 compensation for railway post-office cars was also provided for. The first drastic change was made in 1873 when Congress enacted a statute under which the contract method and the inviting of proposals were abandoned, and fixed maximum rates based upon the weight of mail, distance hauled and number of full-sized postal cars were authorized. The Postmaster General acting under this law established rates ranging from $50.00 per mile per year for average daily weights of 200 pounds, to $200.00 in case of 5,000-pound weights and $25.00 additional for every 2,000 pounds. He also decided upon extra payments for full-sized post-office cars ranging from $25.00 for cars 40 feet long to $50.00 for 55 to 60-foot cars. The daily weights carried were determined by actual weighing of the mails for not less than 90 successive days once in four years. Prior to 1907, working days only were counted, but the Postmaster General then ordered the full number of days in the weighing period to be used as a divisor.

This general plan of compensation remained in effect until 1916, although the general rates of pay authorized were changed a number of times, usually downward. Important changes in general rates were made in 1876, 1878, 1907, and 1910. Special rates of pay on a lower basis were authorized for land grant railroads. For some years small additional payments for special facilities and a fast mail train were authorized, but such payments were discontinued in 1907. Further reduction in mail pay was made in 1911 when the Postmaster General required certain periodicals to be carried by freight instead of in the mails.

The railroads protested against the successive reductions in rates of pay that had been effected, and they also contended that the weighing of the mails but once in four years obligated them to carry a large volume of mail traffic for which they received no pay whatever. The

Post Office, on the contrary, urged a reduction in rates of pay and charged the carriers with the padding of mail weights during weighing periods. In 1912 a Joint Congressional Committee undertook an exhaustive investigation as a result of which the entire system of railway mail pay was later changed. Meanwhile, in 1913, when the volume of mail traffic was greatly increased by the establishment of the parcel-post service, an increase in mail pay, not to exceed 5 per cent, was granted to railroads on which the mails were not weighed during that year.

Upon completing its investigation in 1914, the Joint Congressional Committee recommended not only an increase in railway mail pay to compensate adequately the railroads for their services, but also the adoption of space as the general basis of payment. After much contention and delay Congress in the Space Basis Act of July 28, 1916, authorized the Interstate Commerce Commission to determine fair and reasonable railway mail pay from time to time and to prescribe the method or methods of payment to be applied in the future.[5] Pending action by the Commission, however, the Postmaster General was authorized for the purpose of experimentation, to put into effect the space basis of payment at tentative rates fixed in the Act on such railway mail routes as he might select for that purpose. The Postmaster General therefore placed virtually all railway mail routes, except closed pouch routes, on the space-mileage basis.

Although the carriers protested against this wholesale application of the new basis, the Interstate Commerce Commission upheld the Postmaster General and in its formal decision of December 23, 1919, prescribed the space method of payment for all railway mail routes. The basic rates of pay prescribed by the Commission were made effective as from November 1, 1916, to January 1, 1918, and the general rates to be paid after January 1, 1918, were to be increased 25 per cent. Land grant railroads were granted mail pay rates 80 per cent of those generally in effect on other railroads, and separately operated short lines were granted rates from 20 to 50 per cent in excess of the general space rates. Separate compensation based upon cost of service was prescribed for the carrying of mails between railroad stations and between stations and post offices at points where the railroads are required to perform this service. As the general space rates prescribed by the Commission were higher than the tentative rates named in the Act of 1916, the Post

[5] Act of July 28, 1916, U. S. Code, title 39, pp. 523-568.

Office was required to readjust the mail pay of the railroads for the period beginning November 1, 1916.

Changes have been made upon several occasions in the rates paid the railroads for the transportation of the mails since the original order of the Interstate Commerce Commission in 1919 under the Space Basic Act of 1916. Changes were made both in the general rate bases and in the bases of particular railroads in the Railway Mail Pay Cases. The space-distance basis, however, has not been changed as the basis upon which the government compensates the railroads for the transportation of the mails.

The general rates of railroad mail pay are graduated from the amount paid per mile for the transportation of a 60 foot railway post-office car to the amount paid per mile for the space required for the transportation of a 3 foot closed pouch, one mile. An annual minimum basis of pay per mile of railroad is also provided. Different rates per mile are paid to all railroads over 100 miles in length, to those between 50 and 100 miles in length, and to those of less than 50 miles in length. Lower rates are paid to land-grant railroads of over 100 miles in length. Special rates different from the general or standard railway mail pay are made to certain railways, usually short-lines or weak railroads.

The present standard or basic rates are shown in Table No. 1.

OTHER MAIL TRANSPORTATION AGENCIES

The carriers next in importance to the railroads in the transportation of the mails are the ocean steamship lines which carry the foreign mails, but as ocean mail services are essentially a part of the business of ocean passenger lines they will be discussed in Part V. A number of other transportation agencies, however, are of importance in the domestic mail service. In 1938 domestic mails were carried by steamboats and other power boats over 178 routes covering 25,806 miles, compensation being arranged for in contracts which are entered into after advertisement and receipt of competitive bids. Several steamship lines transport United States mail between the United States and outlying possessions. Electric railways carried mail traffic over 3,560 miles of line, their compensation being provided for by order of the Interstate Commerce Commission as in case of steam railway mail routes. The rates paid electric railways for the carriage of the mails is shown in Table No. 2.

TABLE NO. I

FOR EACH MILE OF SERVICE BY—	FOR RAILROADS OVER 100 MILES IN LENGTH		FOR SEPARATELY OPERATED RAILROADS 50 TO 100 MILES IN LENGTH	FOR SEPARATELY OPERATED RAILROADS LESS THAN 50 MILES IN LENGTH
	Regular Rates	*Land-grant Rates*		
	Cents	*Cents*	*Cents*	*Cents*
60-foot railway post-office car..	39.00	31.20	73.00	91.00
30-foot apartment car	21.50	17.20	40.50	50.50
15-foot apartment car	14.50	11.60	27.00	34.00
70-foot storage car	47.00	37.00	88.00	110.50
60-foot storage car	40.50	32.40	75.50	94.50
30-foot storage space	21.50	17.20	40.50	50.50
27-foot storage space	20.00	16.00	37.75	47.00
24-foot storage space	18.50	14.80	35.00	43.50
21-foot storage space	16.75	13.40	31.75	39.50
18-foot storage space	15.00	12.00	28.25	35.25
15-foot storage space	13.00	10.40	24.50	30.75
12-foot storage space	11.00	8.80	20.75	26.00
9-foot storage space	8.75	7.00	16.50	20.50
6-foot storage space	6.25	5.00	11.75	14.75
3-foot storage space	3.50	2.80	7.00	8.50
15-foot closed-pouch space	14.50	11.60	27.00	34.00
12-foot closed-pouch space	12.50	10.00	23.00	28.75
9-foot closed-pouch space	10.25	8.20	18.25	23.00
6-foot closed-pouch space	7.50	6.00	13.25	16.75
3-foot closed-pouch space	4.50	3.60	8.00	10.00
Minimum pay per mile per annum	$72.00	$57.60	$112.50	$112.50

Between many places not reached by rail or power boat the mails are still carried by wagon, on horseback, or by motor vehicle over "star routes" on the basis of contracts awarded to the lowest bidders tendering guarantees to insure faithful performance. In 1938 contracts were in effect on 11,241 star routes. Many star routes have from time to time been discontinued as a result of the extension of the rural mail service of the Post Office. In 1938, there were 33,099 rural free delivery routes having an aggregate length of 1,388,475 miles on which were carried the United States mails directly to over twenty-six million people.

TABLE NO. 2

RATES OF PAY OF ELECTRIC RAILWAYS

Closed-pouch service:	
In passenger car without compartment:	
10 (or less) pouches, sacks, and parcels	4 cents for each mile of service.
60 cubic feet	5 cents for each mile of service.
For each additional 30 cubic feet	1 cent for each mile of service.
In baggage or express car or compartment in passenger car:	
30 cubic feet	3 cents for each mile of service.
For each additional 30 cubic feet	1 cent for each mile of service.
Independent cars:	
For 36-foot cars	50 cents for each mile of service.
Prorate for cars less or more in length.	
Railway post-office cars:	
20 linear feet or less	2 cents per foot for each mile of service.
Excess of 20 linear feet	7/8 cents per foot for each mile of service.

Minimum payment on any route, $175 per annum.

The use of airplanes for mail carrying is the most recent major improvement in the transportation of the mails. However keen the demand for greater speed may be in the transportation of passenger, express, and freight traffic in the United States, it remained for the air mail service to take the lead in commercial air transportation. The transportation of mail by aircraft is discussed in Chapter 22.

Local transportation of the mails within cities requires the use of approximately 10,000 motor trucks and other vehicles. The transportation of mail matter between post offices and railroad stations either by the Post Office or by the railroads is but one branch of local transportation. An extensive vehicular service is also maintained for transporting mail between the post office, postal stations, and other points where mail is received or dispatched, for collecting mail from street letter boxes, for delivering parcel-post mail, for relaying mail to carriers on their routes, for transporting carriers to and from their routes, and for hauling postal supplies.[6] Prior to October 1, 1914, all services of this kind, excepting the Government messenger service to and from railroad stations performed in some cities, were performed under contract, but since then the contract vehicular service has in many cities been

[6] United States Postmaster General, Annual Report.

displaced by motor trucks that are owned and operated by the Government. In a few of the larger cities pneumatic tube services are utilized in transporting certain amounts of mail matter between post offices and postal stations, or between post offices and railroad stations.

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CHAPTER 15

State Regulation of Railroad Transportation

When the states began the chartering of railroad companies in the late 1820's and for half a century thereafter, the chief concern of the states was not to regulate the carriers but to further the construction of railroads. Highway transportation was mainly local, the natural and artificial waterways could serve only the sections near to them, and there was need of additional facilities for intercity and long-haul transportation such as the railroads could provide. Many states gave substantial financial aid to railroad construction, while such limited regulation as was imposed upon the carriers was by provisions in the charters of incorporation. A few of the charters granted by the states provided for a reduction in service charges when a company's annual net income exceeded a stated per cent upon the investment—in one instance 12 per cent, in another 20 per cent; but quite obviously such a charter provision would have but slight effect, because a company that was so fortunate as to have earnings largely in excess of ordinary operating expenses could keep its net income within fixed bounds by the amount of gross earnings spent upon extensions and betterments.

By the 1850's the railroads had so developed that there were some systems several hundred miles in length, and by 1870 there were some companies having lines more than a thousand miles long. Naturally competition became keen among these rapidly growing unregulated systems each striving to secure as much traffic as possible. At places where there was active competition rates were reduced below those charged at non-competitive points. Moreover, the shippers of petroleum, livestock and other traffic that moved in large volume were able to secure lower rates and better service than were accorded the great majority of shippers whose freight was less in quantity. Thus there developed unfair discriminations as between commodities and as among persons and places. To protect the public against the unjust practices of railroad companies, which were regarded as monopolies that wilfully charged some shippers higher rates than others, the states, in 1869 and

1870, began the enactment of laws prohibiting unfair practices and the charging of rates that were *per se* unreasonable or were unjustly discriminatory. A few states followed the examples set by Massachusetts and left the enforcement of the prohibitory laws to the ordinary judicial procedure in the courts, while a limited number of states experimented for a brief period with fixing maximum intrastate freight rates by statute. However, the majority of the states, as they acted one after another during the two or three decades following 1870, passed general statutes prohibiting unreasonable railroad rates and unjust discriminations and practices and creating commissions with power to fix reasonable rates and to administer and enforce the statutes.

The early statutes enacted by the middle-western states for the regulation of railroads were called "Granger laws," because the legislation had been actively supported by the "granges," which were the local units of "The Patrons of Husbandry," the title of which organization has now become "The National Grange." The railroad companies brought four cases in the Federal courts to prevent the enforcement of the "Granger laws," which laws, however, were upheld by the United States Supreme Court in decisions rendered in March, 1877. The contention of the railroads was that the laws were unconstitutional for two reasons: (1) by their charters, the railroad companies had been authorized to charge reasonable rates for their services, and the question of the reasonableness of the charges fixed by the companies was one of equity that could be determined by the courts and not by the state legislatures. Moreover, (2) the railroad companies argued that, a charter being a contract made by the state with the incorporated company, the fixing of rates by legislation or by a commission acting for the legislature was a violation of a contract.

Fortunately for the railroads and the public, the Supreme Court in the "Granger" cases [1] upheld the power of the states to regulate the railroads. The Court held that the business of common carriers is one "affected with a public interest," and that "where property has been clothed with a public interest, the legislatures may fix a limit to that

[1] The four decisions were Munn v. People of Illinois; the Chicago, Burlington and Quincy Railroad Co. v. Cutts; Peik v. Chicago and Northwestern Railway Co., and the Chicago, Milwaukee and St. Paul Railroad Co. v. Ackley, 94 U.S. 113-179. The principles enunciated by the Court are set forth in the leading case, Munn v. Illinois, 94 U.S. 113-154.

which shall in law be reasonable for its use." Government regulation of the charges and services is the exercise of legislative power—a power that may be exercised except when the state has made a contract stating that it will not exercise the power. In authorizing a railroad company to make reasonable charges for its services, the state does not abrogate its legislative power to determine what charges are reasonable.

The legislative power of the states to regulate railroad charges is not without limit. It is subject to limitations imposed by the rights of property established by the United States Constitution. No person may be deprived of property by a state or by the United States without due process of law or without just compensation. The Supreme Court, in 1886, in upholding the authority of Mississippi [2] to regulate intrastate railroad charges held that "The power to regulate is not the power to destroy." The equity rights of property when affected by legislation are determinable by the courts.

LIMITATION OF STATE, AND EXTENSION OF FEDERAL, AUTHORITY OVER RAILROADS

When the states, by statute or commission action, began fixing railroad rates, they prescribed the rates for all railroad traffic moved within the states, i.e., both traffic that moved only between points within a state and also interstate traffic passing from or entering a state. At that time Congress had not yet begun to regulate interstate carriers, and each state applied its regulatory laws to all railroad traffic within its borders. However, in 1886, the Supreme Court, in deciding the case of the Wabash, St. Louis and Pacific Railway Co. vs. Illinois, held that the State of Illinois did not have the power to fix the charges "for a transportation which constituted a part of commerce among the states." The following year, Congress enacted the Interstate Commerce Act and began the regulation of interstate carriers by rail.

Following the decision of the Supreme Court in the Wabash Case, and the adoption by Congress of the Interstate Commerce Act of 1887, railroads were subject to regulation by two authorities, by the states as regards their intrastate services and charges and by the Federal government as to their interstate business and facilities. In the practical

[2] John M. Stone et al v. Farmers Loan and Trust Co. 116 U.S. 307-347, decided January 4, 1886.

exercise of their regulatory powers by the two authorities two questions arose, the answer to each of which required a series of decisions by the United States Supreme Court. One question concerned the scope of the regulatory power of the states over intrastate commerce and the limitation placed thereon by the Fourteenth Amendment to the United States Constitution.

The other question or problem to which the exercise of the Federal regulation of railroads unavoidably gave rise was the determination of the line dividing state and national jurisdiction. By the Constitution as it has been interpreted by the Courts, the Federal government had complete or plenary authority over interstate commerce and thus over the services and charges of interstate carriers engaged therein. Did the exercise of the power of the Federal government to regulate interstate commerce and carriers necessarily place limits upon the authority that the states might exercise in the regulation of intrastate railroad traffic and rates? By the Wabash decision, above referred to, the authority of each state over railroads was limited to their intrastate services and charges. Was this authority of the states plenary or was it in effect limited in scope by the exercise by the Federal government of its plenary power over interstate commerce? The decisions of the Supreme Court have given this question an answer in the affirmative.

The answer was given in deciding the Shreveport case.[3] The Interstate Commerce Commission found that the railroads were maintaining higher commodity rates on interstate traffic from Shreveport, Louisiana, to points in Northern Texas than they were charging to those points on like traffic and for like services from places within the State of Texas, and by so doing were giving "an unlawful and undue preference," to the Texan cities. The Commission ordered the carriers to correct the unfair adjustment and discrimination. The carriers obeyed the order of Commission by raising the rates within Texas to the level of the interstate rates. The rates within Texas had been fixed by the railroad commission of that state. The Supreme Court upheld the action taken by the carriers.

The principle established by the Supreme Court's decision in the Shreveport case was embodied by Congress in the Transportation Act of

[3] Houston, East and West Texas Railway Co., and Houston and Shreveport Railroad Co. et al v. The United States, 234 U.S. 342, decided June 8, 1914.

1920 which prohibited the states from maintaining railroad rates that impose "any undue, unreasonable, or unjust discrimination against interstate or foreign commerce." The Commission was given power to prescribe the intrastate "rate, fare, or charge thereafter to be observed," "the law of any state or the decision of any state court to the contrary notwithstanding."

Shortly after the Act of 1920 was adopted the Interstate Commerce Commission made an increase of 25 to 40 per cent in the interstate railroad freight rates and raised the basic interstate passenger fare from 3 cents to 3.6 cents per mile. This placed interstate freight rates and passenger fares on a higher level than the state-made intrastate rates and fares. The states were ordered by the Commission to harmonize their charges with those that had been established for interstate transportation. The Wisconsin Railroad Commission obeyed the order of the Interstate Commerce Commission as regards freight rates, but, with the support of other states as intervenors, took the position that it did not have the authority to change the intrastate passenger fares, which had been fixed by state statute at 2 cents per mile. The Supreme Court upheld an order issued by the United States District Court enjoining the Wisconsin Commission from interfering with the carriers in charging intrastate fares equal to those that had been prescribed by the Interstate Commerce Commission.[4]

The Public Service Commission of the State of New York raised general intrastate freight rates to the interstate level, but did not increase milk rates and passenger fares. The New York Central Railroad Company was required by the provisions of its state charter not to charge passenger fares of more than 2 cents per mile between Albany and Buffalo. The State Commission contended that were it to order the New York Central to make those charges more than 2 cents per mile the state would violate the contract that had been made in granting the charter. The Federal Courts, however, decided against the State Commission, the finding of the Supreme Court being that the provision in the United States Constitution that "No state shall . . . pass a law . . . impairing the obligation of contracts" does not restrict the power of the Federal Government to regulate commerce and to prevent a state from

[4] Railroad Commission of Wisconsin v. Chicago, Burlington, and Quincy Railroad Co., 257 U.S. 561, decided February 27, 1922.

placing an undue burden upon interstate Commerce.[5] Had the State of New York not been required to carry out the order of the Interstate Commerce Commission, the annual railroad revenues in the state would have been twelve million dollars less, and the burden borne by interstate commerce would have been greater by that amount.

STATE REGULATION OF RAILROADS IN PRACTICE

The power to regulate commerce and the carriers engaged therein is a legislative power. As has been stated, a few of the states enacted what proved to be temporary statutes fixing maximum intrastate railroad freight rates. A larger number of states, prior to the decisions of the Supreme Court in the Wisconsin and New York rate cases, in 1922, had fixed maximum passenger fares by statute. At present the states follow the wiser practice of vesting in a commission the authority to administer and enforce legislation requiring transportation charges to be reasonable and fair and imposing other regulatory requirements upon carriers. The statute sets forth the principles and standards to be enforced by a Commission functioning as an agency of the legislature.

As the railroads were the first public service corporations to be regulated, the earlier state authority was entitled a railroad commission. Since 1900, the states have subjected many public service companies, other than the railroads, to regulation; and, in most instances, the state railroad commission, usually with a different designation and wider jurisdiction, has been made the agency for administration and enforcement.

The several state agencies for the regulation of railroads and other public service companies, while they have different titles, have similar powers and duties. More and more the states have given their commissions having jurisdiction over intrastate railroad carriers and services powers similar to those exercised by the Federal Government over interstate railroad transportation. In some important particulars, however, the authority once exercised by the state has been restricted as the Federal Government has extended its jurisdiction over interstate carriers. While the states decide what railroad companies may be incorporated, and in what manner, it is the Federal Government that

[5] State of New York v. United States, 257 U.S. 591-607, decided February 27, 1922.

passes upon the public necessity for the construction of an interstate railroad and decides where it may be built. The Federal Government also regulates the issue of corporate securities to obtain the funds required for building the railroads whose construction is authorized. Moreover, as has been stated, practically all railroad companies are engaged in interstate commerce and are thus subject to the detailed regulation of the Federal Government as regard their facilities, their labor policies, their accounts and reports, in addition to having their interstate rates and fares and thus their revenues fixed by national authority. Thus while the states have theoretical sovereignty over intrastate commerce and carriers engaged therein, the actual scope of their authority over railroads is greatly limited by the large and widening power exercised by the Federal Government over interstate commerce and the several kinds of carriers. This is not to be regretted, however, for transportation is a country-wide service for the adequate and efficient performance of which a truly national transportation system is being developed.

Inasmuch as the provisions of the state statutes concerning railroads are based upon the same general principles as is the Interstate Commerce Act, it is not necessary to make an analysis of the provisions of the state statutes. A later discussion of the Interstate Commerce Act will present the objectives, the principles, and the legislative and executive policy of both the Federal and state governments in the regulation of railroads.

More and more the state authorities and the Interstate Commerce Commission are functioning cooperatively, and by so doing each can better perform its part of what is, in reality, a single task. Commerce is not in fact sharply separable into intrastate and interstate; much less can railroad transportation be put into two distinct categories, intrastate and interstate. The coordinated agencies and facilities of transportation serve commerce as a whole, their regulation can best be accomplished by common action of the states and the Federal Government each performing its appropriate part of the task as a whole.

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CHAPTER 16

Federal Regulation of Railroads—Construction, Finance and Operation

The Federal legislation for the regulation of railroads is embodied mainly in the Interstate Commerce Act. Railroad labor relations are regulated by other acts. The original statute enacted in 1887, and as it has been enlarged and broadened in scope by many amendments, now consists of two parts. Part I relates to interstate railroad, express and sleeping car companies, to oil and gasoline pipe line companies, and to such interstate transportation as is performed jointly by connecting rail and water carriers under a common arrangement. Part II of the Interstate Commerce Act is the Motor Carrier Act of 1935.

SUMMARY OF THE PROVISIONS OF THE INTERSTATE COMMERCE ACT

Part I of the present Interstate Commerce Act, comprising 27 sections, provides comprehensively for the regulation of nearly all phases of transportation by railroads and several other carriers. The present discussion concerns only the major provisions relating to railroads.

The first four sections of the statute establish the legal requirements as to railroad charges. Rates and fares must be reasonable and not be unjustly discriminatory. Section 4 provides that the charge for a shorter haul to an intermediate point shall not, without special permission of the Interstate Commerce Commission, be higher than for a longer haul to a point on the same line. Amendments have added two important subjects to Section 1. The Act of 1917 giving the Commission jurisdiction over freight car service rules has been made a part of Section 1, as have also the provisions of the Transportation Act of 1920 requiring carriers to obtain from the Commission certificates of public convenience and necessity authorizing the construction of new lines.

Section 5 gives the Commission authority over the pooling, by car-

riers, of their competitive traffic or the earnings therefrom and also power to prohibit or permit, and fix the conditions of, the consolidation of two or more railroad companies. As amended by the Railroad Transportation Act of 1933, Section 5 provides that the control of two or more railroad companies by a non-railroad holding company must be by permission of the Commission, and when such control is allowed the holding company becomes subject to regulation by the Commission as regards its accounts and finances.

Sections 6 to 14 require carriers to publish their rates, to file them with the Commission, to charge only the published rates, and to give thirty days' notice of a change in rates and charges. For the administration and enforcement of these and other provisions, the Act established an Interstate Commerce Commission, which now has eleven members, with terms of seven years and an annual salary of $12,000. The Commissioners are appointed by the President, by and with the advice and consent of the Senate.

Section 15 gives the Commission full control of railroad charges. The carriers work out their schedules of rates and fares and file them with the Commission thirty days before the charges go into effect. The Commission by not acting may permit the proposed charges to become effective, or the Commission may suspend the schedules until it has investigated them and decided whether they shall be prohibited or be allowed to go into effect with or without modification. The Commission may also, upon its own initiative, investigate existing rates and practices and order such changes therein as the Commission finds to be in the public interest—the orders of the Commission in enforcing this and other provisions of the statute being subject to review in the Federal courts as to the constitutionality and legality of the orders. In general the Commission, in prescribing just and reasonable rates, is to take into consideration the effect of the rates upon the movement of traffic and the revenues needed by the carriers, under honest and efficient management, to provide adequate transportation services.

An especially important section of the Act is 19a which includes the provisions of the Act of March 1, 1913, directing the Commission to make a valuation of the property of the railroad companies. The valuation, which has been made and is being kept up to date, enables the Commission to give due consideration to the assets and investments of the carriers in the regulation of the issue of new securities and in decid-

ing what rates and fares need be, and should be, allowed the carriers to charge.

Section 20 authorizes the Commission to prescribe and enforce a uniform system to be followed by the carriers in keeping their accounts and records. Regular and special reports may be required of the carriers.

Section 20a contains that part of the Transportation Act of 1920 that gives the Commission authority to regulate the issue of securities by the carriers subject to its jurisdiction. With the exception of short-term notes maturing in not more than two years and having a total par value of not more than five per centum of the par value of the outstanding securities, a carrier may issue securities of only such kinds and amount as the Commission permits. The section also provides that no person shall be an officer or director of more than one carrier except upon authorization by the Commission.

The remaining sections of Part I of the Interstate Commerce Act contain provisions requiring the Commission to make an annual report to Congress, authorizing the Commission to compel the railroad carriers to issue passenger interchangeable mileage or scrip coupon tickets, to require the railroads to provide inland shippers with the sailing dates and rates of connecting carriers by water operating to foreign destinations, and to order railroad carriers to install such train control and safety devices as the Commission, after investigation, may prescribe.

ADMINISTRATIVE AGENCIES OF REGULATION AND THEIR ORGANIZATION

In the course of a half-century of experience in exercising authority over a widening jurisdiction and over an increasing number of carriers and their services, the Interstate Commerce Commission has built up a comprehensive and well functionalized administrative organization for the performance of its many duties. The original commission of five members has by stages grown to seven, then to nine and, in 1920, to a body of eleven members. The Commission elects its chairman. The general organization of the Commission includes the office of the Secretary which, in general, coordinates and facilitates the administrative work of the Commission's several divisions and bureaus. The Commission, as reorganized in 1939, has five divisions, each having not less than

three members, several of the eleven members of the Commission serving with more than one division. Division 5 has jurisdiction over Motor Carriers. Subordinate to, and reporting to, these divisions—or in some instances to a single member of the Commission—there are eleven bureaus concerned with the administrative regulation of railroads and other carriers subject to Part I of the Interstate Commerce Act. There is a large Bureau of Motor Carriers, which is subdivided into seven sections for the administration, except as to rates and accounts, of the Motor Carrier Act of 1935. The necessity for a comprehensive and well functionalized organization is manifest, and the Commission has succeeded in developing an administrative agency of real efficiency.

REGULATION OF CONSTRUCTION AND ABANDONMENT BY CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY

By the Transportation Act of March 1, 1920, the Interstate Commerce Commission was given control over the future additions to, and subtractions from, the railroad system in the United States. A company that proposes to build (for use in interstate commerce) a new line of railroad, or to construct an extension of its lines, must secure from the Interstate Commerce Commission a certificate of public convenience and necessity. Likewise no railroad company engaged in interstate transportation may abandon any line, or cease operations thereon, without permission of the Commission. As practically all railroads, however local their lines may be, are the original or final carriers of interstate shipments, the Interstate Commerce Commission's jurisdiction over construction and abandonment extends to the entire railroad system in the United States.

This wise policy protects the public—both investors and shippers—by preventing the construction of railroads when and where railroad transportation facilities are already adequate. It protects the railroads against the destructive competition that results when an additional railroad is constructed in a section or territory already served by as much railroad mileage as is needed.

Some railroads, especially local lines, with the relocation and changes that take place in industry, are certain to become unprofitable to operate. During the past decade, moreover, the rapid increase in automobile, bus,

and truck transportation has taken much traffic from the railroads, especially the traffic of branch lines, and the effect of this motor competition upon the railroads has been greatly increased by a prolonged business depression. The consequence has been that the mileage of railroads upon which operation has been abandoned has for many years been greater than the mileage of new construction. The policy of the Commission has been to safeguard the public interests by requiring railroad companies to continue to render service as long as possible, if there is a public need that cannot be met by motor transportation. The Commission will allow the abandonment of lines that are not needed and those that cannot be kept in safe operating condition. If an unprofitable but needed branch line is owned and operated by a prosperous company the Commission will not permit operation to be abandoned.

It is fortunate for the general public that the Act of March 1, 1920, prohibited the abandonment of railroads without government permission. During the period of less than 20 years ending October 31, 1939, the Commission received 1649 applications for permission to abandon lines having an aggregate mileage of 29,646. The Commission authorized 1415 abandonments involving a total mileage of 22,983 miles. During the same period the Commission authorized the construction of 10,061 miles of railroad, of which, presumably because of adverse business conditions, only 7127 miles were built. There was a net decrease of 15,856 miles of railroads in the United States. Without doubt, railway mileage in the United States will continue to decrease rather than increase, unless there is a change in economic conditions or in government policy.

COMMISSION REGULATION OF RAILROAD SECURITIES AND FINANCES

The regulation of the issue of railroad securities by the Federal Government, as provided for by the Transportation Act of 1920, was needed in the public interest. The more serious abuses connected with railroad financiering, especially with the consolidation of railroads by speculators interested primarily in stockmarket gains, during the decade and a half preceding the enactment of the Act of 1920, might have been prevented by the effective government regulation of railroad security issues. Before the Federal Government took action, about half of the States

had adopted laws for the regulation of the issue of securities by the railroad companies they had chartered. These state laws were of slight effect because in most cases they could be evaded.

Section 20a of the Interstate Commerce Act, as amended to date, makes it necessary for a railroad company to secure the permission of the Interstate Commerce Commission before issuing capital stock or bonds or assuming obligations as lessor, or guarantor of the securities, of other companies, the only exception being that a railroad company may, without Commission action, issue notes maturing in two years or less of a total amount "not more than 5 per centum of the par value of the securities of the carrier then outstanding." When a railroad company petitions the Commission for approval of a proposed increase in capitalization or funded indebtedness, or for approval of a proposed assumption of a liability of another company, the Commission must make an investigation and decide whether the proposed security issue or assumption is for a lawful object that is compatible with the public interest, and is one that the carrier needs to make and ought to make. The Commission may approve or disapprove a petition in whole or in part, and "may grant it with such modifications and upon such terms and conditions [as to kinds of securities and prices at which they are to be offered for sale] as the Commission may deem necessary or appropriate."

In general, it is the duty and task of the Commission to determine and prescribe the requirements to be met by railroad companies in issuing securities, and also to take regulatory action regarding particular issues. It is not the purpose of the statute to deprive carriers of the opportunity, nor to relieve them of the necessity, of exercising their judgment in their financial operations; the purpose is to provide such government regulation as will prevent practices that are harmful to the public in general and are unjust to the investors who purchase securities. The aim of the government is the necessary and appropriate regulation of private management. The Commission has placed the administration of the provisions of Section 20a in charge of its Bureau of Finance which is under the oversight of Division 4 of the Commission.

The statute can define in only very general terms what action by the regulated carriers will be in the public interest. The Commission has very properly held that the property acquired by the issue of securities shall be held for use in serving the public. It is clearly in the public

interest that the Commission consider whether or to what extent the securities issued should be bonds that increase the carrier's funded debt and fixed charges, or whether the carrier can, and should be required to obtain needed funds by the sale of stock. If the issue of securities is authorized, the Commission will, as has been stated, fix the minimum price at which the securities are to be offered for sale, and, if the sale is to be underwritten by a banking house or syndicate, the compensation paid by the carrier for underwriting will be, and should be, subject to the Commission's approval. The Commission's policy is to require, when practicable, that provision be made for amortization of future increases in the funded debt of carriers.

The Commission has important financial responsibilities in connection with the Administration of Section 77 of the United States Bankruptcy Act of March 3, 1933, as amended by acts approved August 27, 1935, and June 26, 1936. Under these statutes the financial plan for the reorganization of an insolvent railroad is worked out for the court by the Commission after hearings have been held, and, if and when the plan thus recommended by the Commission is adopted by the Court, the Commission has the responsibility of authorizing "the issue of any security, assumption of obligations, transfer of property, or consolidation or merger of properties, to the extent contemplated by the plan consistent with the purposes of the Interstate Commerce Act."

Another regulatory power over railroad finances was vested in the Commission by the Act of January, 1932, which provides that loans by the Reconstruction Finance Corporation are to be made after approval by the Commission. The loans to railroads authorized by the Government and approved by the Commission up to October 31, 1939, under the terms of the Act of 1932, amounted to $851,411,961. The repayments made by the borrowing railroads, and the sale to the public by the Government of securities it received in making loans had, by October 31, 1939, reduced the railroad indebtedness to the Government to $455,433,951. The business recession that started early in the autumn of 1937, has made necessary some additional government loans to needy carriers and the extension of the period of some loans previously made. It is fortunate that the Government's policy of aiding the railroads by public loans has been carried out and is being administered jointly by the Reconstruction Finance Corporation and the Interstate Commerce Commission.

GOVERNMENT REGULATION OF RAILROAD CONSOLIDATION BY NON-RAILROAD HOLDING COMPANIES BY THE ACT OF 1933

The Transportation Act of 1920 gave the Commission control over the purchase, or acquisition of control, by one railroad of another railroad, also over the consolidation by merger of two or more railroads; but the Commission had jurisdiction only over the carriers subject to the Interstate Commerce Act. Thus a holding company not subject to that Act could purchase a controlling interest in two or more railroads and in effect unify them, without obtaining permission from the Commission. By the Emergency Railroad Transportation Act of 1933, the Interstate Commerce Act was so amended as to give the Commission authority over the acquisition of control of railroads by a non-railroad holding company. That amendatory act provided, also, that "Whenever a corporation which is not a carrier is authorized . . . to acquire control of any carrier or of two or more carriers, such corporation thereafter shall" be subject to regulation by the Interstate Commerce Commission as regards accounts to be kept and reports to be made. Moreover, the non-railroad holding company becomes subject to the provisions of Section 20a of the Interstate Commerce Act giving the Commission authority over the issue of securities and the assumption of liabilities by carriers.

The statute of 1933 provides that if the Commission finds the control that a holding company has acquired over one or more railroads is interfering with the enforcement of, or is accomplishing the evasion of, the provisions of the Interstate Commerce Act regarding the Commission's control over railroad consolidations and railroad finances, the holding company may be required to vest in a trustee selected by the Commission the power to vote its stock. This applies to holding companies that acquired control of railroad companies before the passage of the Act of 1933.

The power given the Commission, by the Act of 1933, over the consolidation and financial control of railroads by holding companies was needed. A holding company not subject to the Interstate Commerce Act and commission regulation was able to bring not only one but several railroad companies under control of a single financial organiztion. The stock of such a holding company might be owned by a rail-

road company and be made the means of enabling the owning railroad company to control other railroads without securing the permission of the Commission. The holding companies might also be, as were the Van Ess and Allegheny and allied companies, subject to the domination of a few individuals who used the companies not only to bring several railroads under their control, but also to further speculative financial operations. The Act of 1933 gave the Commission more effective control over the future consolidation of railroads, and also much more authority to regulate railroad finances generally.

REGULATION OF RAILROAD OPERATIONS

The Interstate Commerce Commission has jurisdiction over several phases of railroad management and operation: 1) The Bureaus of Locomotive Inspection and of Safety, by enforcing the several statutes as to safety appliances and signals, determine what equipment may be used. 2) The authority is given the Commission to establish through or joint routes by rail and water carriers, to require the interchange of traffic by rail and water lines, and to make physical connection of their terminals when practicable. 3) Through its Bureau of Service the Commission exercises authority over the carriers' rules governing car service and car distribution, and prescribes and enforces regulations as to the transportation of livestock and the shipment of explosives. 4) This bureau also has the duty of giving effect to the general statutory requirements that each carrier shall provide services that are as adequate and efficient as can reasonably be required of the carrier. 5) The Bureau of Accounts and the Bureau of Statistics enforce statutory provisions that impose important administrative requirements upon the carriers. 6) The Bureau of Inquiry has the duty of ferreting out and punishing shippers and carriers whose practices concerning the shipment and transportation of freight are not in accordance with legal requirements. First and last, the Commission has rather wide, possibly unnecessarily wide, authority over the equipment, facilities, operating practices, and administrative duties of the railroad carriers.

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CHAPTER 17

Federal Regulation of Railroad Rates and Charges

THE LEGAL BASIS OF GOVERNMENT REGULATION OF RAILROADS IN THE UNITED STATES

The regulation of railroads by the United States government began with the Interstate Commerce Act of 1887. However, it was not long before the carriers questioned the authority of the Commission, under the Act of 1887, to prescribe rates, and in 1897 the Supreme Court definitely decided[1] that "Congress has not conferred upon the Interstate Commerce Commission the legislative power of prescribing rates." The Hepburn Act of 1906 gave the Commission power to prescribe maximum rates to be charged in place of rates that, upon complaint of interested parties and investigation by the Commission, had been found to be unreasonable. The authority thus conferred was very limited in scope. The Commission could not act upon its own motion to determine whether rates were unjust and should be changed. The rates and other charges filed by the carriers went into effect, and could be changed only upon complaint. Moreover, such rates as the Commission could prescribe—and this was true until 1920—were only the maximum, and not the actual rates that could be charged.

By the Mann-Elkins Act of 1910 the Commission could suspend and investigate proposed rates and thus decide in advance what rates should go into effect, and what modifications should be required of the rates as proposed. The statute also gave the Commission authority to act upon its own motion in investigating rates and rate structures and to require the carriers to make such changes therein as were found to be desirable. The power to suspend, and thus to nullify or modify, proposed rates and the authority to make investigations, reach findings, and issue orders upon its own motion, made it possible for the Commission not only to modify existing railroad rate systems and to correct abuses, but also to act constructively in the development of such rate-

[1] Interstate Commerce Commission v. Alabama Midland Railways Co., 168 U.S. 144, decided Nov. 8, 1897.

making policies and the establishment of such rate structures as the Commission found to be just and reasonable and in the public interest.

The rate-making provisions of the Transportation Act of 1920 supplemented those of the Mann-Elkins Act. The Interstate Commerce Commission was given power to fix the maximum, minimum or the actual rates to be charged by the carriers by rail. The Commission was also given definite legislative authority to change state-made rates on intrastate traffic when such rates were found to discriminate unreasonably against, and place an undue burden upon, interstate commerce. The Commission has employed freely its power to require changes in state-made rates and has thus fixed limits within which state control over intrastate railroad charges may be exercised.

The Transportation Act of 1920 contained a rule of rate making that was intended to make a fundamental change in the policy of government regulation of railroad charges. By this rule the Commission was given a mandate to establish or adjust railroad rates "so that carriers as a whole . . . will under honest, efficient and economical management . . . earn an aggregate annual net railway operating income equal, as nearly as may be, to a fair return upon the aggregate value of the railway property of such carriers held for and used in the service of transportation." This fair return was fixed by the statute at 5½ per cent per annum, plus ½ per cent for non-capitalized investment in additions or betterments, for the first two years. At the end of the two years a rate of 5¾ per cent was fixed by the Commission. The statutory rule of rate making was accompanied by a "recapture" clause which provided that, if an individual railroad company had in any year a net operating income of more than 6 per cent of the value of its property devoted to the service of the public, one half of the excess was to be turned over to the Commission for the creation of a fund from which loans might be made to carriers desiring funds for equipment and facilities. However, the hoped-for results of the 1920 rule of rate making were not realized. It was not long before the Commission, the law makers, and the public realized that, while government regulation can modify and in many ways change and adjust railroad charges, it is economic and industrial conditions and inter-carrier competition that mainly determine what the rates and fares and gross and net operating earnings of the railroads shall be. Moreover, the major share of operating expenses consists of wages and salaries paid employees, which expenses are not under the

control of the Interstate Commerce Commission, but which are determined by the factors that control labor policies and by legislation concerning railroad employees and their retirement and pensions.

The Emergency Railroad Transportation Act of 1933 repealed the 1920 rule of rate making and the accompanying recapture clause; and in their place the following general rule of rate making was substituted:

> In the exercise of its power to prescribe just and reasonable rates the Commission shall give due consideration, among other factors, to the effect of rates on the movement of traffic; to the need, in the public interest, of adequate and efficient railway transportation service at the lowest cost consistent with the furnishing of such service; and to the need of revenues sufficient to enable the carriers, under honest, economical and efficient management, to provide such service.

This rule of rate making is a good summary of the policy and purposes of government regulation of railroad charges. The Commission in prescribing rates is to take into consideration traffic conditions, i.e., what charges can properly be made under prevailing business conditions. The needs of the carriers are to be taken into account, and the rates prescribed are to be those that will enable the carriers to provide the public with adequate transportation and with such efficiency and economy as are made possible by improvements in facilities that will keep them abreast of traffic and service requirements. That is the general constructive aim of government regulation.

FACTORS, OTHER THAN GOVERNMENT REGULATION, THAT CONTROL RAILROAD RATES AND CHARGES

A railroad freight rate or a passenger fare is a charge for a service. Freight and passenger tariffs are schedules of prices, and transportation prices like other prices are subject to the control of well-known economic factors. The carrier in fixing a rate or fare will necessarily consider what the service to be rendered will cost. The carrier will hardly be able to determine how much of his total operating expenses is to be allocated to a particular freight shipment or passenger journey, but he will endeavor to keep his charges severally and in the aggregate high enough to yield operating revenues to meet three demands thereon, i.e., operating expenses, fixed or interest charges, and a fair return

upon the investment made by the holders of stock. The first factor considered in fixing a particular rate or a charge for a particular kind of service is the out-of-pocket expense that will be incurred in performing the service. That expense fixes the minimum below which charges must not go, and above which they should, if possible, be fixed at a level that will adequately cover operating and capital costs. (There is also a more detailed discussion of "rate factors" in Chapter 11.)

The upper limit of railroad charges for particular services and for services in general is fixed by the value of the service to shippers and travelers. Purchasers of transportation will not pay more than the services desired are worth to them, and the value that a shipper or passenger will place upon transportation by a railroad will depend not only upon what gain can be derived therefrom, but also upon what must be paid to secure a like or satisfactory service from a competitive carrier by highway, waterway, or possibly by airway. Competition of carriers as well as value created by the service rendered determines the "value of the service" to the patron served and thus fixes the upper limit of rates and fares.

The actual point at which a railroad charge will be fixed between the lower level of cost of service to the carrier and the value of the service to shippers or passengers will be determined by a number of factors of which government regulation is one, but only one. For the transportation of freight the rates charged are affected by the value of the commodities. Upon articles of high value per weight and bulk relatively high rates can be charged without burdening the shippers, while upon coal, iron ore, lumber, grain, cement and other commodities that are of low value per weight and bulk and are transported as bulk cargo the charge per hundred pounds or per ton can be low, and must be kept low enough to permit a free flow of traffic. The allocation of commodities among classes in the classification of freight is determined partly by costs of service but even more by the value of the commodities and their ability to stand freight rate levies. The grouping of commodities with reference to their values when classifying freight and fixing rates is not unfair to shippers and is not an improper practice on the part of the carriers. It is not from commodities that are in the higher classes and that pay the higher rates that the railroads derive most of their net operating revenues; it is the bulk freight moved in large volume at low rates that is most profitable. At the present time, some of the most

prosperous railroads in the United States are those whose traffic consists largely of coal or of ore.

Whether the value of the services to those who purchase railroad transportation or the cost to the carriers that perform the services should be the primary and controlling factor in the making of rates by carriers and in the government regulation of charges is a controversial question upon each side of which there are earnest and able advocates. The adverse business conditions and the intensity of competition among railroads and between railroads and other carriers that have prevailed since 1929 have made it difficult for many, indeed most, railroads and their competitors to maintain rates that will yield revenues that will cover operating and maintenance expenses and fixed charges. For the majority of the railroad companies profits have been lower or non-existent. The situation has naturally given an impetus, especially to the Interstate Commerce Commission which is charged with the duty of establishing railroad rates that will enable the carriers to provide the public with adequate and efficient services, to endeavor to measure more definitely than has yet been possible the costs of railroad services of different kinds with a view to basing railroad charges upon the ascertained costs of service and thus to placing railroad rates and revenues upon a more certain and more stable basis. The Commission, in 1937, began an investigation of cost-finding in railway, highway, waterway and pipe line transportation; and, in 1939, a Cost-finding Section was organized in its Bureau of Statistics. The purpose of the Commission is to improve carrier accounting and also so to develop cost accounting as to make it possible to make cost of service a more general and definite basis of railroad rates.

Reference has been made to the fact that railroad charges are not altogether determined by theoretical, price-controlling factors. Railroad rates must be such as will move the traffic, and move it on the railroads. When farmers and manufacturers are struggling along through a business depression the railroads are involved with them in their struggle. Railroad traffic decreases proportionately with the decline in productive activity, and railroad rates cannot be maintained at levels that are appropriate to, and justified by, conditions of business prosperity. Revenues fall farther than expenses can be reduced, and, unless railroad companies have had the foresight, and have been allowed by regulatory authorities, to accumulate an adequate surplus during years of pros-

perity, the carriers will become financially unstable and may become unable to serve the public adequately and efficiently.

One phase of government regulation of railroads that is apt to be overlooked or unduly minimized by the public is that legislation regarding wages, working conditions, retirement and pensions of employees has increased and made more inflexible the expenses of railroad operation. This legislation may be an appropriate part of a general policy and program of greater social security; but the fact must not be forgotten that, as railroad expenses are raised and made less flexible, railroad revenues, which result from the rates and fares that are regulated by the government must be maintained on a proportionately higher level. The railroad labor legislation here referred to will be discussed in the following chapter. Although the Interstate Commerce Commission may endeavor to establish rates that will yield revenues equal to the legitimate requirements of the carriers, the Commission cannot control the economic, financial, and business conditions that determine the number of men that can be employed and the amount that can justifiably be spent in providing employment. Social security is not made greater by attempting the impossible.

SOME PROBLEMS OF GOVERNMENT REGULATION OF RAILROAD CHARGES

In addition to deciding whether it will be beneficial to the railroad carriers and in the interest of the public to make the cost of service a larger or, if possible, the major determinative factor in the adjustment of railroad charges and in the future development of railroad rate structures, there are other problems to which attention is being, or will be, given. Some of these problems, briefly stated, are the following:

1. The adjustment of rate levels at the rival commercial and industrial cities on the north Atlantic seaboard, from Boston to Norfolk inclusive, applying to traffic to and from the interior of the country. Indeed the competitive demands of Portland, Albany and Montreal require consideration. The so-called "North Atlantic Seaboard Differentials" have for many decades been a source of contention among the rival Eastern Trunk Line Railroads, and among the competitive industrial and trade centers. In 1931 the Commission put into effect the present class rate scales in force in Trunk Line Territory. These distance

rate scales apply to traffic to and from all points with such modifications as are deemed necessary to meet particular situations. While these class rate scales have taken the place of the rates previously in effect on domestic traffic they have not greatly changed the former differential adjustment of railroad rates on export and import traffic as among the north Atlantic seaboard cities.

2. Competition similar in nature to that among the north Atlantic seaboard cities exists between the north Atlantic and south Atlantic ports of the United States and especially between the north Atlantic ports and those on the Gulf of Mexico. There is likewise active competition between the Pacific ports of the United States and those of the Atlantic-Gulf seaboard for traffic between the eastern and central parts of the United States and trans-Pacific countries, and for a good portion of the traffic between the western third of the United States and trans-Atlantic countries and the countries on the eastern seaboard of South America. The cities on the south Atlantic seaboard of the United States, and especially the Gulf ports, with the support of the railroads serving them, compete actively with the north Atlantic ports and the Eastern Trunk Lines for export and import trade and traffic. Rates via the south Atlantic and Gulf ports are enough lower than those via the north Atlantic gateways to allow the more southerly ports and their carriers to engage successfully in the export and import trade and traffic. The railroad rates to and from the Pacific ports of the United States on exports and imports are so adjusted as to enable the trade of the interior section of the United States with trans-Pacific countries to move on through rail and ocean rates that are practically the same via the Pacific or via the Atlantic-Gulf gateways.

3. Another perennial rate problem confronting the Interstate Commerce Commission is the enforcement of Section 4 of the Interstate Commerce Act which prohibits the railroads from charging more for a shorter than for a longer haul over the same route and in the same direction. The Commission may, however, upon the petition of a carrier, allow a lower rate to be charged for the longer haul, if the Commission finds the lower rate to be in the public interest. Many such exemptions from observance of the long-and-short-haul section are found to be desirable, as well as necessary, in the establishment of general rate structures over a large section of the country. The equitable adjustment of inter-carrier and of industrial competition requires this to be done.

4. A problem that is now receiving public attention and one to which the Interstate Commerce Commission must needs give special consideration is that of establishing and maintaining by cooperation of the interested carriers and by appropriate regulatory action by the Commission an equitable adjustment of rates of railroad, highway and water carriers. A beginning has been made by the Commission in standardizing the rates of interstate motor common and contract carriers as provided for by the Motor Carrier Act of 1935.

5. As a result of the evolution of railroad freight rates in the United States, and of their regulation and standardization by the Government, class and commodity rate structures have been developed in and for each of nine rate territories. Is this to be considered the ultimate goal, or should the evolution of railroad rate standardization proceed until rate territories are eliminated and the same rate structures are applied throughout the country? There is little present prospect of the early adoption of uniform rate structures for the entire country, but it is interesting to note that the conclusion reached as a result of a comprehensive investigation of the problems made for the Coordinator of Transportation by J. R. Turney and the collaborators in the Section of Transportation Service, was that territorial rate structures were no longer needed and that "a uniform price [freight rate] system applying throughout the country is worthy of the most careful consideration." [2]

GOVERNMENT REGULATION OF RAILROAD PASSENGER FARES

Prior to the World War most railroads had a standard fare of three cents a mile with special reductions for commutation and excursion tickets. The majority of the states had regulated intrastate fares, usually by action of the state railroad commission, but thirteen states had fixed fares by legislation, two cents per mile being the most common maximum. During war time government operation, the standard day coach fare, both intrastate and interstate, was three cents per mile, with a surcharge of a half a cent a mile for Pullman car passengers. The prevailing suburban fares were increased 10 per cent.

[2] Freight Traffic Report (May, 1935), Vol. I, pp. 68-69. Section of Transportation Service, Federal Coordinator of Transportation.

When the railroads, on the 1st of March, 1920, after 26 months of government operation, were returned to their owners, prices, wages, and operating costs were on the high post-war level, and it was necessary for the Interstate Commerce Commission to increase both freight rates and passenger fares. The standard fare was increased 20 per cent, from 3 to 3.6 cents per mile, and was applied alike to day coach and Pullman fares, but the Pullman berth and chair-car charges were increased by a surcharge of 50 per cent, which surcharge accrued to the railroads and not to the Pullman Company. The Commission ordered the intrastate fares to be made the same as those that had been prescribed for interstate travel, and this order was carried out by all the state commissions except those in the thirteen states in which maximum fares had been fixed by statute. The power of the Interstate Commerce Commission to require changes in intrastate fares fixed by statute was contested in the Federal courts, and the authority of the Interstate Commerce Commission was upheld.[3]

The post-war system of passenger fares and charges remained in effect generally until 1933, by which time, as has been stated in Chapter 12, there had been such a great decrease in railroad passenger traffic and revenues that the railroads, in the South and the West, decided to make drastic reductions in fares with the hope of regaining enough traffic to cause an increase in revenues. The Eastern Trunk Lines, however, maintained their fares upon the post-war level until 1936, when the Interstate Commerce Commission prescribed for the country as a whole maximum day-coach fares of 2 cents per mile, and maximum Pullman fares of 3 cents, the Pullman surcharges being abolished. This action of the Commission was taken following its investigation of "Passenger Fares and Surcharges" which it began in June 1934.

In its decision of the case, rendered February 28, 1936, the Commission, some members dissenting, adopted the recommendations contained in the Examiner's report; and, by an order effective June 1, 1936, the Commission established for the United States as a whole standard maximum passenger charges of "2 cents per passenger-mile, one way and round trip, in coaches, and 3 cents per passenger-mile, one way

[3] Railroad Commission of Wisconsin et al v. Chicago, Burlington and Quincy R'd. Co., and State of New York v. U. S., 257 U.S. 371 and 385. Both cases decided Feb. 27, 1922.

and round trip, in standard Pullman cars, without prejudice to the maintenance of lower fares in coaches or in Pullman cars." The extra fares being charged for special superior train services were held not to be unreasonable; and the Pullman surcharge was abolished.

The decrease in fares, made in part by voluntary action of the carriers and in part by order of the Commission, was followed by a substantial but only temporary increase in railroad passenger traffic and revenues. The Eastern Trunk Line Railroads were not convinced that the standard day-coach fare in their territory should be lower than 2.5 cents per mile; and in November, 1937, they asked to be allowed to raise the standard day-coach fare to 2.5 cents per mile. This petition was first denied by the Commission, but later, in July 1938, was granted for a trial period of eighteen months. The coach fare is now 2 cents per mile. The eastern carriers, after trying out the increased fares decided, in 1939, to make some reductions, and apparently succeeded in checking the decline in traffic and revenue.

One of the purposes of the Motor Carrier Act, as stated in its introductory section, is to prevent "unfair or destructive competitive practices" and "to improve the relations between, and coordinate transportation by, and regulation of motor carriers and other carriers." As the Commission accomplishes the difficult task of regulating and standardizing (so far as that is found to be practicable and desirable) the fares of interstate bus companies, it can make an equitable adjustment of the passenger charges of rail and motor carriers.

While the government, through regulation can be helpful, it is the railroad authorities themselves that must solve the difficult problems connected with rebuilding their passenger traffic. By individual and joint action the carriers are striving to reduce the costs of services while they are at the same time seeking so to improve the services as to make travel by rail increasingly attractive. The improvements now being made in equipment and the increase in speed and in comfort of travel would not have been thought possible even a few years ago; but in one respect it would seem that more might be done than has been done to reduce expenses and increase efficiency. Greater cooperation among the carriers in arranging their passenger services—making them more complementary and less competitive—in making more joint use of terminal facilities, and in placing the advertising, soliciting and selling of passenger transportation in joint agencies would contribute to greater

economy and efficiency of service. What the public needs, and what it will be to the advantage of the carriers to provide, is a coordinated, country-wide passenger service by cooperating railroad, motor and other carriers.

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CHAPTER 18

Government Regulation of Railroad Labor Relations

As regards wages paid employees and rules and regulations concerning working conditions, retirement, pensioning, and unemployment insurance of employees, the railroads are not subject to the Interstate Commerce Commission, but are under the jurisdiction of three boards, the National Mediation Board, the National Railroad Adjustment Board, and the Railroad Retirement Board. The first two of the boards were established by, and derive their power from, the Railway Labor Act of 1926, as amended by the Railway Labor Act, approved June 21, 1934; while the third board was created by the Railroad Retirement Acts approved August 29, 1935, June 24, 1937, and June 25, 1938.

THE RAILWAY LABOR ACT OF 1934

To carry out the purposes of the Act of 1934 and for its general administration, a National Mediation Board is provided consisting of three men appointed by the President with the advice and consent of the Senate. As its name indicates, the Board may, upon its own motion or by invitation of one or both of the parties in dispute, seek by mediation to bring about the settlement of a controversy. If settlement by conference is found to be impossible the Board will endeavor to get the parties to agree to arbitration, the machinery for which is provided by the Act. If the parties concerned will not submit their controversy to arbitration and a strike is threatened the Mediation Board is directed by the statute to bring the matter to the attention of the President of the United States who may appoint a special board to investigate, and to report upon, the dispute; and "after the creation of such a board and for thirty days after such board has made its report to the President, no changes except by agreement shall be made by the parties to the controversy in the conditions out of which the dispute arose." Thus a strike is made unlawful for the period required by the board for making its investigation and report, and for thirty days after the report has

been submitted to the President. While the decision reached by the President's special board is not binding upon the parties in dispute and cannot be enforced by proceedings in the courts, public opinion, as experience has shown, is effective in bringing the disputants to adopt and carry out the finding of the special board. There has been no railroad strike for many years.

The Mediation Board is concerned with the general administration of the Acts of 1926 and 1934, and with the mediation and arbitration of important controversies, which are usually those affecting the wages of employees. For the settlement of most disputes between railroad laborers and employers, and of disputes as to the interpretation of agreements that have been made as to rates of pay, rules or working conditions, the statute of 1934 has provided a National Railroad Adjustment Board consisting of 36 members, one-half of them being representatives of the employees selected by the national railway labor organizations, and one-half of representatives of the employers selected by their Association or Associations.

The statute of 1934, assures to the employees "the right to organize and bargain collectively through representatives of their own choosing." The statute also provides that in case of a dispute between employees and employers "arising out of grievances or out of the interpretation or application of agreements concerning rates of pay, rules or working conditions," either party may demand that there be a conference of representatives of the parties. Thus each party to a controversy can bring a grievance before the appropriate division of the National Railroad Adjustment Board. The decision reached and award made by a majority of the division of the Adjustment Board is binding upon the carriers and may be enforced by bringing suit in a United States District Court. If the decision and award of the Board are in favor of the carrier and against the petitioning employees the carrier cannot bring action in the courts to enjoin the employees to carry out the action of the Board. In this regard the statute is manifestly one-sided and not impartial.

The 36 members of the National Railroad Adjustment Board are allotted to four divisions each acting independently. The first division, composed of five members selected by the carriers and five designated by the national labor organizations of the employees, has jurisdiction over disputes involving engineers, firemen, conductors, train-

men and yardmen. The second division, also having ten members selected in the same manner, deals with disputes affecting machinists, electrical workers, car men, power house and shop laborers. The third division, also of like membership and composition, has to do with controversies involving station, tower, and telegraph employees, maintenance of way, clerical, and station employees, signal men, porters, and sleeping-car and dining-car conductors and employees. The fourth division, having six members—three from each side—is given jurisdiction over employees of carriers by water and over such employees as are not under the jurisdiction of the other three divisions.

One purpose of the Railway Labor Act of 1934 was to strengthen the national railroad labor organizations and to minimize the role of organizations composed of the employees of a single railroad company as the agencies through which railway employees negotiate with their employers not only as to wages but also as to working conditions. This purpose of the Act has been made so effective that at the present time railroad wages and hours of labor and working conditions are almost completely under the unilateral control of the national railway labor unions. The general level of railway wages has been maintained with only a temporary variation, during a long period of business depression. Indeed, increases made in 1937 have raised the level above that of 1929. While this has been fortunate for those employed, it has unquestionably forced the railroad companies to reduce their forces to a minimum and to postpone much work that needed to be done. Inasmuch as labor costs comprise more than 60 per cent of the operating expenses of a railroad, when largely decreased revenues compel a reduction in operating expenses there must be a reduction in the number of men employed, and the number of men laid off must be greater if the scale of wages paid in prosperous times is maintained and increased. The Railway Labor Act of 1934 has increased the difficulties of the railroads during a most trying period, and it is at least doubtful whether the statute has been of benefit to railway labor as a whole.

LABOR PROVISIONS OF THE EMERGENCY RAILROAD TRANSPORTATION ACT OF 1933-1936

It was the major purpose of the Emergency Railroad Transportation Act of June 16, 1933, to facilitate and require greater cooperation

among railroad carriers, and, during the three years that the emergency provisions of that act were in force, there was a Coordinator of Transportation who was supposed to have been given authority to make the statute effective. The Act of 1933 did not accomplish the purpose it was intended to achieve. The ineffectiveness of the statute was due in part to a limitation placed upon action by coordination that was contained in Section 7 of the law, which provided that no "action taken pursuant to the authority" of the statute should reduce the number of railway employees below the number in service in May, 1933, nor place any employee "in worse position with respect to his compensation for such employment." The statute also provided that the annual reduction in payrolls, "by reason of death, normal retirements, or resignation," was not to exceed five per cent. As the Coordinator could not require carriers to reduce duplication of services or to make joint use of terminals without depriving employees, at least temporarily, of their positions, such orders were not made. Section 7 of the Act of 1933, however, led to negotiations, during the spring of 1936, that brought about the agreement of May 21, 1936, between representatives of the Association of American Railroads and the Railway Labor Executives Association providing compensation to railroad employees displaced or reduced in rank or pay by consolidations of railroad services or facilities to effect economies. By this agreement, which is for a five-year period ending June 16, 1941, the employees that may be affected are to be given 90 days' notice of a proposed coordination of facilities; and an employee that is displaced is entitled to a "coordination allowance" of 60 per cent of the wages he has been receiving, the duration of the allowance period to depend upon length of previous service. This unemployment compensation is to be paid for six months to those who have been in service from one year to two years, the period of payment increasing by graduation up to 60 months for those who have been in service 15 years or more. An employee who is displaced also has the option of receiving his full salary for periods ranging from 3 months to 12 months depending upon the length of his previous service. When the coordination of railroad facilities requires employees to change their place of residence, they are to be compensated for the cost of making the change.

By the Railroad Retirement Act of 1937 all employees are eligible to retirement annuities at 65 years of age; and those 60 years of age

may retire if they have completed 30 years of service or have become permanently disabled. After the date of the passage of the Act, individuals without regard to age may receive annuities if they become permanently disabled and have completed 30 years of service. "The annuity shall be computed by multiplying an individual's years of service by the following percentages of his monthly compensation; 2 per centum of the first $50.00; 1½ per centum of the next $100; and 1 per centum of the next $150." Wages or salaries in excess of $300 per month are not to be included in the annuity computation. An important stipulation as to minimum annuities payable is contained in the following provision of the Act:

> If the individual was an employee when he attained age sixty-five and has completed 20 years of service, the minimum annuity payable to him shall be $40.00 per month: provided, however, that if the monthly compensation upon which his annuity is based is less than $50, his annuity shall be 80 per centum of such monthly compensation, except that if such 80 per centum is less than $20 the annuity shall be $20 or the same amount as the monthly compensation, whichever is less. In no case shall the value of the annuity be less than the value of the additional old-age benefit he would receive under Title II of the Social Security Act if his service as an employee after December 31, 1936, were included in the term 'unemployment' as defined therein.

If a person who has been retired shall thereafter render compensated service to an employer he shall not receive an annuity while he is so employed. Another interesting provision of the Act is that a person entitled to an annuity may have the amount payable to him during his life reduced and have the remaining actuarial value of his annuity paid to his widow during her life. The administration of the Act is vested in a Railroad Retirement Board of three members appointed by the President by and with the advice and consent of the Senate. Their term of office is five years, and salary $10,000 per annum. The main duty of the Board is to determine who are entitled to annuities, and from time to time to certify to the Secretary of the Treasury the names and addresses of individuals to whom payments are to be made. The Act creates in the Treasury Department a Retirement Account, and there is to be appropriated to the Account each fiscal year an amount sufficient "for the payment of all annuities, pensions and death benefits in accordance with the provisions of this Act." Although the Retirement Act does not so state, the funds required for these payments are derived from the proceeds of the Carriers Taxing Act.

THE CARRIERS TAXING ACT OF 1937

The obvious purpose of having a carriers taxing act separate from the Railroad Retirement Act is to avoid the constitutional restriction upon levying taxes for a specific purpose instead of for the general welfare. The Taxing Act imposes upon carriers and employees a levy that is paid into the United States Treasury, and it is the United States, not the carriers and their employees, that pays the annuities and pensions. That this is a legal fiction is manifest, but as both carriers and employees have agreed not to question the validity of the Act the legal fiction will be successful in avoiding legal obstacles to the development of a country-wide, comprehensive system of annuities and pensions for railroad employees.

The Carriers Taxing Act levies an "income tax" on employees and an "excise tax" upon employers. The income tax provision of the Act is that each employee shall pay a tax (in addition to other taxes) equal to the following percentage of his compensation that is not in excess of $300 per month: for the three years 1937, 1938 and 1939, 2¾ per centum. The percentage is increased ¼ of one per centum in each of the three succeeding trienniums up to the end of 1948. Thereafter the rate is to be 3¾ per centum per annum. The tax is to be collected by the employer who is to deduct the amount of the tax from the employee's wages or salary. The employers pay an excise tax equal to the amount levied upon employees, thus the Bureau of Revenue of the United States Treasury will, during the triennium 1937-1939, receive from the two taxes 5½ per cent of the amount of the carriers' payrolls, there being no levies on such portion of an employee's compensation as is in excess of $300 per month. After December 31, 1948, the Treasury will receive 7½ per cent of the annual payrolls.

For many years prior to the enactment by Congress of the Railroad Retirement Act and the Carriers Taxing Act, a large number of railroad companies provided for pensioning disabled and aged employees. By the Railroad Retirement Act of 1937, the obligations of the railroads under company pension systems are transferred to the Government, it being provided by the statute that each individual that was "on the pension or gratuity roll of an employer by reason of his employment" should receive "a pension at the same rate as the pension or

gratuity granted to him by the employer," with the limitation that no pension thus paid shall exceed $120 a month.

Another interesting provision of the two Acts is that they include among employees "any officer or official representative of a railway labor organization" . . . who before or after the enactment date [of the Retirement Act] was in the service of the employer . . . and who is duly authorized and designated to represent employees in accordance with the Railway Labor Act." The composition and functions of the National Railroad Adjustment Board created by the Railway Labor Act of 1934 have been set forth in the preceding discussion.

A Railroad Labor Unemployment Insurance Act was adopted by Congress in June 1938. This Act, which contains seventeen sections, removes railroad employees from coverage by the unemployment insurance acts of the states and from coverage by Title IX of the United States Social Security Act. In lieu of the protection thus afforded, railroad employees are made eligible for unemployment insurance payable to them by the Railroad Retirement Board from funds obtained by a tax upon the carriers of three per cent of the payrolls. After a short waiting period, the man out of employment may receive from $140 to $240 per year, depending upon his rate of wages when employed. The substitution of one Federal system of railroad unemployment insurance, is said to be to the advantage of the employees, while it does not add to the burden of railroads.

CONCLUDING STATEMENT

The present policy of the Federal Government regarding the fixing of the wages and working conditions of railway employees, the settlement of railway labor controversies, and the retirement and pensioning of disabled and aged railroad employees has been developed over a period of fifty years, beginning with the Arbitration Act of 1888. During this half century all branches of railroad labor have become organized in national brotherhoods, orders or unions, and practically all dealings of employees with employers, as regards wages, working conditions, unemployment compensation, retirement annuities and pensions, are through officials or representatives of their national organizations. One definite purpose of recent legislation, especially the Railway Labor Act of 1934, has been to strengthen the national railroad labor

organizations, as against their employers, and the purpose has been accomplished. If a railroad company violates a provision of the Railway Labor Act, it may be prosecuted and penalized by action in the courts; but no provision has been made for compelling the labor organizations to be obedient unto the statute. The organizations are not required to incorporate and are not required to assume the obligations of bodies corporate. The present policy of the government is most satisfactory to the railroad labor organizations, and they are opposed to any change in the policy.

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Carriers Taxing Act of June 29, 1937. Public—No. 174—75th Congress.

Railroad Labor Unemployment Insurance Act of June 25, 1938.

These statutes may also be found in The Freight Traffic Red Book (1940 edition), pp. 576-606.

CHAPTER 19

Court Review of Railroad Regulation

The Fifth Amendment to the Constitution of the United States provides that "No person shall . . . be deprived of life, liberty or property, without due process of law; nor shall private property be taken for public use, without just compensation." This same protection of the rights of persons, individual and corporate, as against action by the states, is afforded by the Fourteenth Amendment to the Federal Constitution which reads "Nor shall any state deprive any person of life, liberty or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws."

Property rights are rights in equity. Thus state or Federal legislation regulating the rates and income of railroad and other carrier companies or making requirements as to expenditures from income—i.e., legislation affecting property values and rights—may raise questions in equity to which only the courts can give final answer. Under the common law, equity rights are determinable by the courts, but such common law rights are made more definite by the above-quoted provisions of the United States Constitution.

It is the Federal Courts, and ultimately the United States Supreme Court, that determine the constitutional validity of all laws, state and Federal. Court review reaches to the constitutionality of state and Federal legislation for regulation of intrastate and interstate carriers, and to both the constitutionality and the legality of the decisions and orders of the regulatory Commissions. The courts have been careful to avoid substituting judicial for statutory and administrative regulation of car riers. The purpose and results of court review as it has developed step by step have been to define the constitutional scope of the regulatory power of the states and to protect the equity rights which those who are regulated by the state and Federal governments possess under the United States Constitution.

The power of the states' legislatures to regulate intrastate railroad rates was established by the United States Supreme Court in the

"Granger" cases and in subsequent cases and decisions referred to in Chapter 15.

COURT REVIEW OF FEDERAL REGULATION OF RAILROADS

In the discussion of the regulation of railroads by the states, in Chapter 15, reference was made to important decisions of the United States Supreme Court upholding the power of the Federal Government to require the states to make such changes in intrastate rates as the Interstate Commerce Commission may find to be necessary to prevent those rates from placing an undue burden upon, or from unreasonably discriminating against, interstate commerce. The Interstate Commerce Commission has authority to maintain an equitable adjustment between intrastate railroad rates and the level of interstate rates that the Commission has found to be reasonable.

Congress has not fixed interstate railroad rates by statute, but has vested in the Interstate Commerce Commission authority to determine what rates are just and reasonable and may be charged by the carriers. Thus the questions that have come before the United States courts in their review of Federal regulation of the railroads have not involved the constitutionality of the Congressional legislation embodied in the Interstate Commerce Act, but have been questions concerning the constitutional validity and the statutory legality of the actions taken by the Interstate Commerce Commission. The courts have, however, been called upon to pass upon the constitutionality of an important act of Congress concerning railroad employment and railroad labor, the Adamson Law of 1916.

To prevent a threatened country-wide railroad strike and the consequent general paralysis of business, Congress passed the Adamson Act of September 1, 1916, establishing a standard eight-hour day for railroad labor. The Act also provided that the wages that were being paid September 1, 1916, should not be lowered by the carriers for a period, not exceeding nine months, during which a commission to be appointed by the President was to investigate, and report upon, the question of extra pay for overtime. Did Congress have the power under the Commerce Clause of the Constitution to fix hours of labor and wages of railroad employees? The carriers brought suit in a Federal court to have

the law declared invalid; and it was by a close decision, five judges for and four dissenting, that the Supreme Court decided that Congress had acted within its authority under the Constitution.[1] Thus was established the standard eight-hour day in the railroad service.

The Railroad Retirement Act passed by Congress in 1934 was declared unconstitutional by the Supreme Court in a decision rendered May 6, 1935.[2] In order to avoid the constitutional difficulties that invalidated the Act of 1934, Congress, August 29, 1935, enacted two laws, one the Railroad Retirement Act providing for the retirement of employees with pensions, and another, the Railroad Employees' Excise and Income Tax Act. However, the Federal Court of the District of Columbia issued, June 26, 1936, an injunction against the enforcement of the tax levies, the Court holding that the two statutes "so dovetail into one another as to create a complete system substantially the same as that created by the Railroad Retirement Act of 1934, held unconstitutional by the Supreme Court." This second defeat of railroad pension legislation was followed by conferences between representatives of the carriers and their employees that resulted in the establishment by Congress in 1937 of the present railroad retirement and pensioning system that is described in Chapter 18.

In two respects, the Supreme Court has wisely placed limitations upon court review that have been of special assistance to the Interstate Commerce Commission in its enforcement of the Interstate Commerce Act. In a decision [3] rendered in 1910, the Supreme Court stated that, in deciding whether an order of the Commission should be suspended, it would consider "all relevant questions of constitutional power or right" and "all pertinent questions as to whether the administrative order is within the scope of delegated authority." The Court also stated that "Power to make the order and not the mere expediency or wisdom of having made it, is the question." By this ruling the Supreme Court has made the Commission, not the courts, the final authority as to facts that arise in deciding whether the Interstate Commerce Act has been violated. The court will not consider "whether, on like testimony, it would have made a similar ruling" as to the facts.

By another ruling the Supreme Court has strengthened the fact-

[1] Wilson v. New, 243 U.S. 332, decided March 19, 1917.

[2] Railroad Retirement Board v. Alton Railroad Co., 295 U.S. 330-392.

[3] Interstate Commerce Commission v. Illinois Central Railroad Co., 215 U.S. 452.

finding function of the Commission. The Interstate Commerce Act, Section 9, contains the provision that a person claiming to be damaged by a common carrier subject to the Act may either make complaint to the Commission or bring suit in a United States district or circuit court, but may not pursue both remedies. The Supreme Court, however, as early as 1907, ruled that all questions over which Congress had given the Commission jurisdiction must first be decided by the Commission. Shippers alleging violation of the Interstate Commerce Act must first bring their complaints before the Commission, for the reason, as the Supreme Court has stated,[4] "if the power existed in both courts and the Commission to originally hear complaints on this subject, there might be a divergence between the action of the Commission and the decision of a court . . . and thus a conflict would arise that would render the enforcement of the act impossible."

In the half century and more since the original Interstate Commerce Act became a law, the Federal courts have reviewed many decisions of the Interstate Commerce Commission. The significance of court review and its relation to the effective regulation of railroads and other carriers may be illustrated by referring to four decisions of the Supreme Court, two of which greatly weakened the authority of the Commission and were followed by legislation increasing the power of the Commission. The other two decisions that will be cited upheld and broadened the Commission's regulatory authority.

The Act of 1887 prohibited carriers from charging unreasonable rates, and gave the Commission, upon complaint of shippers, authority to decide whether the rates charged by the carriers were reasonable. For several years it was the practice of the Commission, when rates were found to be unreasonable or unjust, to name the rates that would be reasonable and to order the carriers to put such rates in effect; but, in 1896 and 1897, the Federal Courts declined to uphold orders of the Commission prescribing railroad rates.[5] Thus it was that for several years before the adoption by Congress of the Hepburn Act of 1906, the Commission was without power to prescribe and adjust railroad rates. Indeed, it was not until the enactment of the Mann-Elkins Act in 1910 that the Commission was given authority to act constructively upon its

[4] Texas and Pacific Railway Co. v. Abilene Cotton Oil Co., 204 U.S. 426.

[5] Cincinnati, New Orleans and Texas Pacific Railway Co. v. Interstate Commerce Commission, 162 U.S. 184. This is often referred to as the Social Circle Case.

own initiative in the regulation of railroad rates and the development of rate structures.

The decision of the Supreme Court in the Alabama Midland Case in 1897, placed another limitation upon the Commission's regulatory authority. The fourth section of the Interstate Commerce Act of 1887 prohibited a railroad, unless permitted to do so by the Commission, to charge more for a shorter haul to an intermediate point than for a longer haul, "under substantially similar circumstances and conditions," to a more distant point over the same line and in the same direction. The Commission decided that interrailway competition at one place and not at another did not create such dissimilar circumstances as to permit the carriers to ignore the requirements of the long-and-short-haul section of the Act. The interpretation of the section by the Commission was overruled by the Supreme Court in deciding the Alabama Midland Case, above referred to. This decision of the court made the important long-and-short-haul section of the Interstate Commerce Act a dead letter until 1910, when the Mann-Elkins Act eliminated from the section the phrase "under substantially similar circumstances and conditions," and also made the observance of the section mandatory upon the carriers, until they received from the Commission, authorization to charge less for a longer than for a shorter intermediate haul.

Two of the many cases in which the Supreme Court has upheld the jurisdiction and strengthened the authority of the Commission have been referred to in discussing state and Federal regulation of railroads, but their importance may justify another brief reference to them. In the Shreveport case [6] decided in 1914, the Supreme Court upheld an order of the Interstate Commerce Commission requiring interstate railroad carriers so to change their rates as to correct an unfair adjustment as between interstate and intrastate rates. The carriers carried out the order by raising the Texas intrastate rates to the level of interstate rates that had previously been held by the Commission to be reasonable. In upholding the carriers, as the Court did, in the action they had taken in obeying the Commission's order, the decision made it possible for Federal authority to change rates fixed by the States. The Transportation Act of 1920, definitely gave the Commission legislative authority to change intrastate railroad rates that impose an unjust burden upon interstate commerce. As has been explained, Wisconsin and other states

[6] Houston, East and West Texas Railway Co. v. U. S. 234 U.S. 342.

contested the validity of this provision of the Act of 1920, but, in the Wisconsin and New York rate cases the Supreme Court, in 1922, held that it was within the power of the Federal Government to prevent the states from unduly burdening interstate commerce, either by legislative or administrative action, and that the Interstate Commerce Commission could be authorized to determine what intrastate railroad rates may impose such undue burden.[7]

The present comprehensive government regulation of railroads and other carriers subject to the Interstate Commerce Act has resulted not only from legislation and administrative action, but also from the decisions of the courts in defining the powers of the states and the Federal Government. From legislation, commission action, and court decisions there has evolved a clearly defined and definite code of government regulation of transportation, such a code as would have been impossible without the participation of the courts in its development.

The Federal Courts, under the guidance of the Supreme Court, wisely limit the exercise of their judicial power of review of decisions and orders of the Interstate Commerce Commission to strictly judicial questions. The courts do not pass judgment on the Commission's findings as to facts; and shippers or others claiming damages for alleged violations of the Interstate Commerce Act must first take their complaints to the Commission and obtain its decision as to the facts. The courts are open to appeal by complainants that are not satisfied with the Commission's findings as to questions of law. By adhering to this policy the courts have added to the scope and efficiency of the regulatory authority of the Commission.

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Sharfman, I. L., The Interstate Commerce Commission (1931), Part II, pp. 384-452. This includes a full discussion of the "Commission and the Courts" and numerous quotations from decisions of the courts.

[7] Railroad Commission of Wisconsin v. Chicago, Burlington and Quincy Railroad Co., 257 U.S. 563, and State of New York v. U. S., 257 U.S. 591.

CHAPTER 20

Government and Private Ownership and Operation of Railroads

Each country in deciding upon its policy as to railroad transportation must choose government ownership and operation or government regulation of the corporations that the government has chartered and authorized to construct, own and operate railroads. The Government must perform the service or regulate private enterprise. Railroad transportation being a service upon which the public is vitally dependent—an essential public utility—it becomes the duty of the government in each country to arrange for the performance of the service as adequately and efficiently as the economic, financial, social and political conditions of the country will permit. It is those conditions that must be considered in deciding which policy to adopt. For each country, government or private ownership and operation of railroads is a question of expediency, not one to be decided by any general principle of universal validity as to the theoretically proper scope of government or private enterprise.

ARGUMENTS FOR GOVERNMENT OWNERSHIP AND OPERATION OF RAILROADS IN THE UNITED STATES

In a country like Great Britain or the United States where, at least until very recently, the purpose of government has been, not to socialize economic effort, but to encourage private initiative and enterprise, the question of substituting government for private ownership of railroads is a highly controversial question. In a discussion such as the present the affirmative and negative arguments should be fairly presented, before a conclusion is reached as to the policy that should prevail.

The three major arguments regularly advanced in support of the theoretical superiority of government, over private, ownership and operation of railroads are: (1) lower capital costs because the government can secure funds at lower interest rates than private corporations

can, (2) lower operating costs resulting from the coordination of all railroad facilities, the elimination of unnecessary duplication of facilities and services, the cutting down of unnecessary investment in equipment, the reduction in empty-car mileage, the avoidance of the expenses due to competition of rival railroad carriers, and the reduction in the number of salaried officials and in the costs of intercorporate accounting and other interline expenses that would follow from the substitution of one general managerial organization in place of the many private railroad corporations, and (3) the possibility of so adjusting the rates and services of the railroads as to enable the government to accomplish desired economic and social aims.

The champions of government ownership find in the railroad situation, that has prevailed in the United States for a number of years, as a result of the prolonged business depression accompanied by rapid increase in motor transportation, a reason for the nationalization of the railroads.

As was pointed out by Joseph B. Eastman, when Coordinator of Transportation, the success of government ownership and operation of railroads in the United States would depend upon "whether other ills would take the place of those abated." [1] Among such ills is the possible "political interference with management." The necessity of preventing such interference is recognized by Mr. Eastman, but he believes it would be possible to adopt measures that would divorce a government-owned corporation from political influence or control. Among other measures would be one making it "a penal offense for the trustees [of the government corporation] or any of their subordinates, to appoint, remove, or retain officers or employees at the solicitation of any officer of the government or political party organization, and for any such officer to solicit action or to interfere in any way with the disciplining of employees."

Another major "ill" that would need to be avoided would be a reduction in efficiency of management. Could all the railroads in the United States "be effectively and efficiently managed as a single unit"? Again the opinion of Mr. Eastman, who believes that government

[1] Senate Document No. 119, 73d Congress, 2d Session. The discussion of "Public Ownership and Operation" is on pages 13-21 of the Report, and a "Tentative Plan for Public Ownership and Operation of Railroad Systems in the United States" is presented on pages 82-84. The report was made in January 1934.

ownership and operation is the ultimate solution of the railway problem in the United States, may well be noted. In general, Mr. Eastman believes that in time as a result of experience the government would solve the problems of administrative efficiency by means of "a staff and line form of organization, under which general policies and planning will be laid down by a staff and the execution will be left to local officers with a large measure of autonomy and jurisdiction over comparatively small units or areas." This optimistic forecast is, however, followed by the statement:

> It is quite too much to say that the answer to this question [of administrative efficiency] has yet been found. If public ownership and operation were established overnight there would probably be a comparatively long period of trial and adjustment before the best form of organization could be devised and made effective. A machine working smoothly at the outset could not reasonably be expected.... It cannot yet be said with certainty that the answer would ultimately be found.

It is interesting to note that the Coordinator of Transportation, writing at the end of 1933, did not advocate the immediate nationalization of the railroads by the United States. One reason for this conclusion was that "There is no aggressive public sentiment in favor of public ownership and operation"; while another reason was that "perhaps the strongest objection to public ownership and operation may be found in the present economic condition of the nation. It is heavily burdened with debt, and the burden is increasing." Mr. Eastman believed that if the government were to issue its securities to purchase the railroads at such an appraisal as would doubtless be made there would be an increase in "the fixed charges which [railroad] operations must bear inconsistent even with the future earning capacity of the properties, having in mind especially the competition from other agencies of transportation which they now face and other changes in economic conditions." If the government were to take over the railroads under present conditions, "the immediate burden upon public finances might be great." In other words, the government had better wait until railroad earnings have increased, and until the government's finances have been cleared of present uncertainties and made capable of standing the strain of increased indebtedness and larger current liabilities that may result from the public ownership and operation of the railroads.

If the condition of the railroads in the United States at the end of 1933, the general business situation, and the status of the government's finances and indebtedness at that time did not make the nationalization of railroads advisable, it is quite certain that railroad nationalization would be unwise in 1940 or in the immediate future. Whether the United States should eventually adopt and carry out a policy of government ownership and operation of the railroads will depend upon the weight that may be given to the practical difficulties to be overcome in making a success of such governmental action.

ARGUMENTS AGAINST GOVERNMENT OWNERSHIP AND OPERATION OF RAILROADS IN THE UNITED STATES

Public ownership and operation of railroads can produce satisfactory operating and financial results only if government management is efficient and economical. The theoretical advantages and economies of railroad nationalization, as stated in the foregoing summary of the affirmative arguments, would favor government success—there would be complete coordination of all the railroads and their facilities, the pooling of equipment, the consequent reduction in empty-car mileage, the elimination of the costs of intercorporate competition in facilities and services, the substitution of one administrative organization and staff for the present large number of corporate organizations each having its staff of major and minor officials, and the funded capital required for the acquisition and future development of the railroads would presumably bear lower interest rates than must be paid upon private capital.

The measure of success attained by the government in securing these theoretical economies will, obviously, depend upon its ability to do two things: to manage with economy and efficiency a business enterprise of such size and complexity, and to keep the financial management, the operation, and the development of the publicly-owned railroads free of political control or interference. All advocates of railroad nationalization in the United States recognize the necessity of meeting the requirements of efficient and non-political administration.

The successful avoidance of political influence upon government-controlled activities in the United States is not very promising, when

one considers the forces that influence legislative action concerning inland waterway improvements and other public works, the granting of pensions, the regulation of laborer and employer relations, and other matters regarding which public policy is largely influenced by political-pressure groups. Undoubtedly, if the government took over the railroads an earnest effort would be made to divert the administrative organization from political, and executive, domination and to build up and maintain an efficient management with a staff and employee personnel selected by a "merit" system. However, the disregard of the merit system, both by Congress and the President, in the rapid enlargement of the public service during recent years is by no means encouraging.

Even if hampering political influence could be eliminated, it is by no means certain that the government of the United States could efficiently operate a railway system comprising the entire railway mileage in the country. Is it rational to expect that the government, which is not a business organization, could manage a huge business enterprise more efficiently than a business corporation could? To predict the economical and efficient administration, as a single system, of one-third of the railroad mileage of the world, by the democratically-controlled government of the United States requires much optimism.

In spite of the operating economies made possible by public ownership and operation of a unified system comprising all the railroads in the United States, would the government be able actually to reduce operating expenses? When, in 1929, the railroads were prosperous the wages paid employees amounted to 64.2 per cent of the total operating expenses, and in 1938 the percentage was 64.1 per cent. Both in periods of prosperity and in times when business depression compels drastic reductions in expenditures nearly two-thirds of total railroad operating expenses are for wages. The number of employees under government ownership in the United States would certainly be greater than under private ownership and it is hardly to be doubted that the hours of labor would tend to be less and the general schedule of wages would tend to be higher under government, than under private, management. Congress has been responsive to the influence exercised by organized labor, as evidenced by the railway labor act of 1934, and by the railroad retirement legislation of 1934, 1935 and 1937. This social legislation is here referred to not to pass judgment upon it, but to indicate that the

labor policy followed by the government in the operation of the railroads would tend to add substantially to labor costs, which under private management comprise nearly two-thirds of total operating expenses.

What would be the probable effects of government ownership and operation upon the gross revenues and the fixed charges of the railroads? The gross revenues are the product of volume of traffic and of the rates charged for service. Railroad traffic depends not only upon business conditions but also upon the vigor and effectiveness of traffic solicitation and promotion and the relation of the railroads to other agencies of transportation. Whether the Government, as the owner and operator of all the railroads, united into a single monopolistic system, would seek actively to obtain and build up traffic by railroad, as the competing private railroad companies now do, seems doubtful. The volume of traffic by rail under government ownership and operation would depend, in part, upon the policy followed by the Government in aiding and promoting traffic by highways, waterways, and airways. At present the governments, Federal and state, are giving liberal aid to non-railroad facilities and carriers. The tax-paying public is bearing a part of the costs of transportation by road, water, and air. The traffic and revenues of government operated railroads will quite certainly be affected by the policy of the Government concerning non-railroad transportation and carriers.

As regards the effect of government ownership upon the capital costs of the railroads emphasis is placed upon the lower interest rates paid by the Government. If it be assumed that the Government, with a non-railroad debt that will soon reach forty-five billion dollars and seems certain to rise to fifty billions, can take on an additional obligation of twenty billion dollars by the purchase of the railroads, and still be able to obtain capital at a low rate of interest, will the Government be able to operate the railroads in the United States at a profit, or even on a self-supporting basis? What demands upon net railway operating income will have to be met, if the government railroads are operated upon a self-supporting basis?

The annual interest or capital charges, at 3½ per cent upon government securities or stock of $20,000,000,000 (which is somewhat less than the official valuation that the Interstate Commerce Commission has given the investment in railroads) would be $700,000,000. The gross operating revenues of the government railroads would at least

have to meet operating and maintenance expenses and yield a net income of $700,000,000 to pay fixed charges; but that would not put the government enterprise upon a self-supporting basis. As is well known the private railroad companies spend large sums annually to keep abreast of the technical requirements, to make their facilities and services progressively better. New, and additional, capital must yearly flow into the business, either from net earnings or by additions to indebtedness and to the fixed charges thereon. During the 12 years from 1920 to 1932, the railroad companies in the United States invested $6,309,117,000 in new lines, extensions, and additions and betterments, less retirement allowances; and nearly 60 per cent of this large sum came from earnings, the funded debt of the railroads being increased by $1,375,000,000 and stock by $1,184,000,000. Presumably the government, as the owner of the railroads, ought to make additions and improvements mainly out of current earnings instead of adding to its indebtedness and fixed charges. If this policy were carried out, about $300,000,000 a year would need to be available from net earnings.

In 1939, the railroads in the United States paid, in taxes, $355,766,155, including $105,585,479 paid for retirement allowances and unemployment compensation. This was 8 per cent of their gross operating revenues. The larger share of the total went to the states and local governmental units. Is the corporation or organization through which the Government would function in operating the railroads to pay taxes equal in amount to those now paid by private corporations or is the tax burden to be borne by the public, mainly by increased levies by the state and local governments? If we mean by "government operation on a self-sustaining basis," that the Government is to assume the financial burdens now carried by the railroad corporations, the net operating income of the government railroad system should provide for the payment of not less than $300,000,000 per annum in taxes.

Should the Government's investment or capital obligation of $20,000,000,000 resulting from the purchase of the railroads remain a permanent obligation or should it be reduced year by year by a definite plan of amortization from net earnings? The private railway companies are at present being quite justly criticized for not having long since adopted the practice of amortizing their debts; and the Interstate Commerce Commission has announced that, when possible, it will make its approval of the issue of bonds by an applicant railroad company condi-

tioned upon provision being made for the amortization of the increased indebtedness. Presumably the Government should provide for the gradual reduction of the obligations incurred in purchasing the railroads, and to do this it would need to make an additional demand of ½ of 1 per cent of its original investment, or $100,000,000 per annum, upon its net revenues from railroad operation.

To meet these four demands upon net operating revenues—interest on investment, annual expenditures for improvements, taxes, and amortization of investment—would require not less than $1,400,000,000 per annum. To secure net operating revenues of that amount the gross operating revenues of the Government would need to be at least $5,000,000,000 per annum, and the "operating ratio"—the ratio of ordinary operating and maintenance expenses to gross operating expenses—would need to be kept down to about 70 per cent. The gross operating revenues of American railroads declined from $6,279,520,000 in 1929 to $3,095,403,000 in 1933, by 1937 they had risen to $4,166,000,000; but in 1939 they declined to $3,995,000,000. One would have to be an optimist of the first degree to forecast for the near future railroad gross operating revenues exceeding $5,000,000,000. In the relatively prosperous year (for the railroads) of 1930 their gross operating revenue was $5,281,000,000, since which time they have lost to the highways the larger share of their passenger traffic and a substantial volume of freight. With future gross operating revenues of $5,000,000,000, the railroads will have to be very efficiently managed to earn $1,400,000,000 above regular operating and maintenance expenses. The operating ratio will have to be kept below what it has been in recent years, the ratio for 1930 being 74.4 per cent, for 1936, 72.3 per cent and for 1937, 74.9 per cent, and for 1939, 73 per cent. Even in the banner year of 1929, the ratio was nearly 72 per cent.

GENERAL CONCLUSIONS

The people of the United States need a well managed railroad system, efficiently and economically operated and developed. If the country were small, and its railroad system were of corresponding size, if the government were one in which administration was emphasized and could function without pressure from political, regional, or other interests, government ownership and operation of the railroads might be

successful and satisfactory. In the absence of those conditions, and in view of the demonstrated efficiency of private enterprise in the United States, it seems wise to adhere to the present policy of private ownership and operation of the railroads. Government regulation should be continued and be modified from time to time, as it has been in the past, to adapt it wisely to changing conditions.

The ownership and operation of the railroads, and the participation in other business activities, should be avoided by the Government of the United States. Private enterprise and initiative are highly developed, and it should be the rôle of the Government to encourage such enterprise, with such public regulation thereof as is necessary to prescribe and enforce equitable and appropriate rules to be observed in the conduct of business affairs. The acquisition and management of the railroads would quite certainly add to the debt and tax burden to be borne by the people of the United States, a burden that would not be offset by better and more economical railroad transportation services.

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PART III

AIR TRANSPORTATION

CHAPTER 21

The Development of Air Navigation and Transportation

Lighter-Than-Air Craft

The modern period of flying began in the Eighteenth Century with the balloon ascensions of the Montgolfier Brothers in France in 1763; and the inventions of the balloon net, which distributed the weight of the basket to the surface bag; the safety valve; and the rip cord, to permit descent, by the French physicist Charles. An attempt to apply steam power to flying in 1812 by Sir John Cayley in England was unsuccessful because of his inability to get a light steam engine of sufficient power.

During the Civil War in America, Captain, later Count, von Zeppelin, a young Prussian army officer, made observation flights in an anchored balloon for the Union Armies to observe enemy position and control artillery fire. Von Zeppelin after his return to Germany worked to perfect a lighter-than-air ship of sufficient lifting power to accommodate steering apparatus and propelling machinery, and shaped to lessen wind resistance so that the balloon might be made self-propelling and directable. Santos Dumont, a Brazilian sportsman, made a number of spectacular flights in the crude dirigibles of the early years of the Twentieth Century. Von Zeppelin flew across the Alps and made other flights in dirigibles to prove the practicability of lighter-than-air craft. Progress in aerostatics to 1914 was slow and much of it offset by failures of the dirigibles to ride out storms and demonstrate adequate lifting power, as well as by danger of fire and by mechanical difficulties.

Von Zeppelin and others interested in lighter-than-air craft during the years just preceding the World War had been experimenting with lighter metals for construction, fabrics for the gas bags, fuels, internal combustion engines to reduce the weight of the dirigibles, to increase their lifting capacity and to make them safer and most airworthy. Just before the War, Zeppelin had built a successful ship as a result of a gift of six million marks made by popular subscription in Germany to finance his experiments.

During the World War extensive use was made of dirigible aircraft in reconnaissance work, in patrol service, and in air raiding by the German navy. These craft were enlarged and improved Zeppelin types, which used hydrogen for lifting gas. Several spectacular long-distance flights were made in these craft.

Lighter-than-air craft are of several distinct types. The non-rigid lighter-than-air craft or balloons have no rigid structural members but are shaped by the internal pressure of the gas used to support them. Semi-rigid aircraft usually have one rigid structural member from which the gondola or control car and engines are suspended, and one or several non-rigid gas bags or balloonettes which support the craft. The third type of lighter-than-air craft is the dirigible or rigid type which is shaped by structural members. The craft is supported by a number of gas cells into which part of the interior of the structural frame-work is divided. Control rooms, living quarters, engines and fuel spaces are built into modern dirigible types.

Heavier-Than-Air Craft

Years of experiments with scale models, gliders or motor-less rigid airplanes, helicopters or air-screws, ornithopters or flapping wing heavier-than-air craft, preceded the first flight of an airplane in 1903. Inspired particularly by the work of several American glider experimenters and the experiments of those working with small model power-driven fixed-wing airplanes, the brothers Orville and Wilbur Wright constructed gliders and later an engine-driven plane. The first plane did not prove successful because the weight of the engine in proportion to the horse-power developed was excessive. Their gliders, or engine-less airplanes, demonstrated the practicability of their system of maintaining equilibrium in the air in 1902. They and others immediately set out to develop a motor of sufficient power and speed and of light weight to propel the planes. Experimenters during this period were handicapped by lack of data on aerodynamics. Existing marine engine designs had to be adapted in the efforts to develop a new type of motor. Data on air pressure and resistance developed by scientists, including Samuel P. Langley, were of great service in these experiments.

The first motor built by the Wright brothers developed 16 horse power for a few seconds but the power dropped so rapidly that it was capable of developing only 12 horse power at the end of a minute. It

weighed about 107 pounds, developing one horsepower for each 14 pounds.

With this meager equipment and a monorail take-off, a flight of 12 seconds' duration was made by Orville Wright at Kill Devil Hill, North Carolina, December 17, 1903. An unsuccessful attempt, which kept the plane in the air only 2½ seconds and ended in a slight accident, was made on December 14, by Wilbur Wright.

These flights, however slight the actual time in the air, were of great significance, although they were not considered significant at the time. The telegram announcing the flight of the Wright Brothers was not published by the newspapers to which it was sent because it was not considered worth printing. This was the first time in aviation history in which a flying machine carrying a pilot raised itself into the air by its own power and had moved forward without reduction in speed to land without crashing at a point as high as that from which it had started.

In the same year, an "airdrome," a type of fixed wing heavier-than-air craft constructed by Dr. Samuel P. Langley, was so badly damaged in an unsuccessful attempt to tow it behind a boat on the water to the take-off position that efforts to fly it were abandoned. Later, in 1912, the same airdrome after repairs had been made was successfully flown by Glenn A. Curtiss.

Developments in the field of heavier-than-air craft during the decade following the first successful flights centered around the attempts to perfect lighter, speedier, and more powerful propelling machinery. Hiram Maxim in England worked extensively with steam power. Samuel Langley experimented with internal-combustion gas engines. Glenn H. Curtiss developed several very efficient engines for airplanes and won an international speed race at Rheims, France, in 1909, with an engine developing 50 horse power which weighed 250 pounds. In the same year, Henri Farman, who in 1908, made the first airplane flight with a passenger, flew 3 hours and 4 minutes in a plane with a 34-horse power Gnome motor weighing 132 pounds. Louis Bleriot flew across the English Channel in a monoplane equipped with a 25-horse power Anzani motor in 1909. Germany, France, and England offered prizes for flights and improved engines, and the history of aviation during this period is a record for numerous short flights. A number of types of light engines with higher horse-power ratings were developed. Included in

this list are the Mercedes, Benz, and E. N. V. engines, the latter developing as much as 80 horse power.[1]

The next outstanding period in the development of heavier-than-air craft commenced with the World War.

The needs of the armies and navies for airplanes stimulated activity in the development in the Allied countries as well as in those of the Central Powers. Many and varied improvements were made in body and wing design, in the power and weight of engines, and in the technique of flying. One of the outstanding contributions of the United States during the World War was the development of the Liberty motor,—a 12-cylinder, V-shaped, water-cooled motor of 850 pounds weight, delivering 420 horse-power,—two pounds for each horse power developed. This motor was extensively used in French and British as well as in American airplanes during and for some years after the War.

The significance of the use of air craft in the World War is a matter of controversy of national and international proportions. Proponents of aviation are apt to ascribe to the air services most of the significant developments during the four years of hostilities, while opponents of aviation development are prone to discount the importance of aircraft in military service. We are more concerned here with the contribution made by the development of airplanes and aviation technique during the World War to the promotion of commercial air transport than with the significance of the part played by air craft in warfare. It can scarcely be denied that the forced development of aviation during this period accelerated post-war commercial air transportation.

The Allies and Central Powers used airplanes extensively in scouting, map-making, bombing, and individual and fleet combat and these uses of a new military weapon attracted widespread interest throughout the world. Perhaps the most important result of the use of aircraft in the War was the great stimulus given to aircraft engineering and the stirring of the imagination of people everywhere of the possibilities in commercial air transportation opened up by the feats achieved by flyers of all of the belligerent nations in warfare. The stimulus accounts for the rapid strides in air transport taken since the signing of the Armistice in nearly every leading nation of the world.

Post-war developments have again brought air transportation to the

[1] Horsfall, J. E., "The First Flight," Annals, American Academy of Political and Social Science, May 1927.

front rank in public interest. Successes of outstanding importance have been accompanied by disasters which have kept public interest at a high pitch.

Types of Heavier-Than-Air Craft

Heavier-than-air craft include a number of different types, themselves heavier than the air displaced, which depend upon the aerodynamic properties of the craft to keep them aloft.

One type of heavier-than-air craft includes airplanes with fixed or rigid wings which are supported by the downward pressure of the wings or plane surfaces upon the air and the upward lift created by the partial vacuum above the plane created by the rapid forward movement of the plane through the air.

Helicopters depend upon the upward lift of the revolving air screw.

Ornithopters are supported by the flapping or beating of the movable wings upon the air.

Autogyros are airplanes the ability of which to climb, descend at steep angles, and hover without forward movement is facilitated by rotary vanes above the craft.

The greatest progress in heavier-than-air craft development has been made with airplanes. Many radically different types have been developed in the past quarter century for a variety of military, naval, coast guard, sport, commercial transport, industrial and scientific services.

Military planes include the specialized types used in combat, pursuit, scouting or reconnaissance, bombing, patrol and photography. In these types special characteristics of speed, maneuverability, or carrying capacity are emphasized sometimes at the risk of other qualities.

Sport planes are designed for pleasure flying or cruising, racing, aerobatics, and similar purposes.

Commercial transport airplanes include the large planes used in long-distance national and international services in the transportation of passengers, mail and express traffic. Some of these planes are equipped with berths for use in night time sleeper services. Smaller commercial planes are used in shorter route services and in cross-country, aerial taxi-plane, and special charter services.

Special types of airplanes are used for commercial photography, forest patrol and fire fighting, crop and orchard dusting and spraying, aerial surveying, and advertising.

Planes used in scientific service include those constructed with hermetically sealed cabins, and supercharged engines for high-altitude or so-called "stratosphere" flying; exploration; mapping; and other special scientific purposes.

Post War Developments in Heavier-Than-Air Craft

During the period from the close of the World War to 1927 there ensued a period of experimentation and development in aviation of greater importance in the improvement of aviation technique than in the development of commercial air transportation. The important advances in this period included the construction of larger planes; the building of larger and more efficient airplane motors; the increase in speed of airplanes; the reduction in the weight of engines per horsepower delivered; the use of twin, triple and multimotored planes, the reduction of engine fuel consumption; lower oil consumption; the development of improvements in aerodynamic design of planes; and the compilation of meteorological data of inestimable value to aviation. All of these improvements tended to make longer airplane flights possible.

Development during this period took three distinct paths. The first of these paths was the use of airplanes in "barnstorming" and stunt flying. Many ex-military aviators with adapted military planes, many of them obsolete or poorly suited to the services in which they were used, entered this field. From among these "gypsy" flyers, stunt flyers, wing-walkers and other performers came some of the pilots who were later to be leading commercial transport pilots or pioneers in long-distance flying. On the other hand, the inferior planes and faulty technique of some of these pilots resulted in many serious and fatal crashes, which did much to undermine public confidence in the safety of air transportation.

The second path was that of long distance, non-stop trans-continental and trans-oceanic flying. In 1919 three United States Navy planes, the NC1, 3, and 4, left Far Rockaway, New York, for Plymouth, England, by way of Newfoundland, the Azores and Lisbon, Portugal. Of the three only the NC4 completed the flight. The other two craft were disabled at the Azores. The NC4 was the first plane to cross the Atlantic Ocean. In the same year, John Alcock and A. W. Brown, two British flyers, made the first non-stop trans-Atlantic flight from Newfoundland to Ireland, a distance of 1960 miles in a little over 16 hours, and won by this exploit a prize of $50,000 offered by the London "Daily Mail."

In 1922, a hydroplane flight was made from Portugal to Brazil by Sacdura and Coutinho. A United States Army plane, the T2, was flown in a non-stop transcontinental flight of 2520 miles from Mineola, Long Island, to San Diego, California, in a little less than 27 hours, in 1923, by Lieutenants Kelly and Macready.

In May 1924, a party of United States Army flyers started from Santa Monica, California, and made a round-the-world flight via Seattle, Washington; Prince Rupert, British Columbia; Sitka, Alaska; the Aleutian Islands; Japan; China; French Indo-China; Siam; Burma; India; Syria; Constantinople, Turkey; Bucharest, Roumania; Belgrade, Servia; Budapest, Hungary; Vienna, Austria; Paris, France; Croyden and Brough, England; Iceland; Greenland; Newfoundland; to Boston and then across the United States to the starting point in 175 days, making 75 flights in an actual flying time of 371 hours and 11 minutes covering more than 27,300 miles. In 1925, Commander Rogers of the United States Navy technically completed a flight from San Francisco to Hawaii although one of the planes fell 400 miles from Hawaii and the party was 9 days adrift before being rescued.

The flight of Commander, now Rear Admiral, R. E. Byrd and Floyd Bennett over the North Pole in May 1926; and the intercontinental flights of Sir Alan Cobham from England to Australia and return, a distance of 28,000 miles, and of Commander de Pinedo from Rome to Japan and back, and from Italy to Africa, South America and North America in 1927, stimulated interest and enthusiasm in Europe and in the United States. The spectacular and daring non-stop, one-man flight of 3610 miles made by Charles A. Lindbergh, from New York to Paris, in May, 1927; the record-breaking non-stop long-distance flight of 3905 miles by Clarence Chamberlain and Charles Levine from New York to Berlin which ended with the descent of the plane at Eisleben, Germany, 110 miles short of its goal, in June 1927; the trans-Atlantic flight of Byrd, Balchen, Acosta, and Noville from New York to Paris which ended with the plunging of the plane into the sea off the coast of France in June 1927; and the successful flight of Lieutenant A. J. Hegenberger and L. J. Maitland of the United States Army from California to Hawaii in July of the same year were all of great significance and were important mileposts in the development of transportation.

The year 1927 was of great significance in the history of aviation.

The spectacular long-distance flights demonstrated that trans-oceanic flying was practicable, although the failure of some of the expeditions to reach their exact objectives and the disastrous failure of others indicated that trans-oceanic passenger transportation was not yet feasible. The expeditions attracted great popular attention to air transportation. This attention was not altogether a benefit to aviation because the successful flights caused the public to expect too much and to be disappointed when more rapid developments did not take place in trans-oceanic flying. Furthermore, a wave of speculative enthusiasm in aviation securities, sound and unsound, was dampened by the stock market collapse of 1929 and by the failure of some imprudently promoted aviation companies to produce planes or operate commercial transport services. It took the aviation and air transportation industry a number of years to recover its equilibrium after the financial excesses and unwarranted enthusiasm of this period. Meanwhile, each year witnessed the breaking of speed records, altitude records, transcontinental, trans-oceanic, intercontinental and round-the-world flights. The first solo round-the-world flight was made in July, 1933, when Wiley Post flew over a course which circumnavigated the world in 7 days, 18 hours and 9½ minutes. The route covered 15,596 miles. In July, 1938, Howard Hughes and a four man crew circumnavigated the world by air in 3 days, 19 hours, 8 minutes, and 8 seconds to set the most recent world's record. The flight of 14,540 miles was made from Floyd Bennett Field, New York, to the same field crossing the Atlantic Ocean, the continents of Europe and Asia, returning to the United States via Alaska to the field from which the start was made. Associated with Hughes in this carefully planned and accurately executed flight were Edward Lund, engineer; Thomas Thorlow and Harry M. Connor, navigators; and Richard Stoddard, radio operator.

The third pathway of development in the decade following the World War was the development of commercial transportation. Progress in this phase of aviation was promoted by the establishment of the air mail service by the United States Post Office in 1918; by the construction and maintenance of airways and facilities for night flying and air navigation by the United States Government; by the building of larger and safer planes by the airplane manufacturing companies; and by the organization of substantial air transport operating companies.

The development of commercial air transport services—mail, passenger and express—are discussed in other chapters. The commercial air transport companies, together with the individuals and companies engaged in industrial services such as aerial survey and advertising, crop and orchard dusting and spraying, fire patrol, timber cruising, prospecting, and various other types of miscellaneous commercial services form the substantial basis upon which air transportation is building.

The Airway System of the United States

An airway may be defined as an air route connecting air traffic centers or airports, supplied with intermediate landing fields at suitable intervals, equipped with the necessary aids to air navigation, and provided with communication facilities for the transmission of information necessary to the proper operation of the aircraft using the airway. Airways are built over terrain best suited for emergency landings. They are "air highways" or "channels of air navigation," whether over land or water. Aircraft are dependent upon the earth, not only for landing and taking-off, but also for guidance and safety while in flight, and upon airports and emergency landing fields for havens of refuge in case emergency landings are necessary. Airways, properly lighted and equipped with weather information facilities, communication service and other facilities for air navigation, are absolutely necessary for the use of public carrier aircraft engaged in the carrying of passengers, freight and the mails, as well as by privately owned and operated aircraft.

Airways are provided by the United States government for the use of military, commercial and private aircraft. Over these aerial highways aircraft carry passengers, United States mail, express and freight traffic; and private and government planes move from air center to air center guided by the lighting facilities, radio beacons and other direction-controlling devices, and assisted by the weather and other communication services furnished by the United States government and private agencies organized for this purpose.

The Air Commerce Act of 1926 empowered the Secretary of Commerce to designate and establish civil airways and to establish, operate and maintain along these airways all necessary air navigation facilities excepting airports. The airways thus established are open to all who wish to use them. The facilities are provided at the expense of the United States government.

The airways constructed and maintained by the United States are equipped with revolving beacons, placed at intervals of 10 to 15 miles along the airways with visibility range of from 25 to 40 miles, depending upon atmospheric conditions, so that their visibility ranges overlap. The beacons are identified by route designations and numbers, and in revolving the beacons make and break an electric circuit flashing their respective code signals. The electric beacons are equipped also with photronic cell control which automatically turns the current off and on as the solar light rises above or falls below the amount of light necessary for safe air navigation without the aid of beacons—15 foot candles of light.

The United States Weather Bureau has several hundred regular stations throughout this country reporting twice daily on weather conditions in their respective localities. At a number of stations pilot-balloon service has been established for upper-air soundings to ascertain direction and velocity of winds aloft. In addition this Bureau has set up several hundred special airways weather-reporting stations, and stations at 200 mile intervals along either side of the transcontinental airways. Reports from all these sources are sent out at frequent intervals by means of an automatic-telegraphic-typewriter system to the radio communication stations. These stations broadcast this information hourly to aircraft, airports and operators.

The greatest recent aid to air navigation is the radio beacon which serves to guide pilots over the airways through good or poor visibility and in daylight or dark. The radio range beacon transmitter consists of two directional loop antennae pointing in opposite directions at right angles to the course. From one of these loops an N signal (— . dash-dot in Morse Code) is broadcast and from the other loop an A signal (. — dot dash). Any aircraft equipped with a radio beacon receiver can pick up those signals. There are two types of receivers, one aural, the other visual. The aural type utilizes the ordinary earphones, the pilot hearing one long dash when the plane is on the course. When on one side of the course the N signal becomes louder, when on the opposite side the A is louder. The pilot, being familiar with the station signals, knows which way to turn to get back on the course. The visual type receiver substitutes for the head phones a device with two vibrating reeds. When the beacon signals are received, the two reeds vibrate vertically,

and, since they are tuned to the two modulating frequencies used at the transmitting station, they indicate the quality of signals received. When vibrating the reeds appear to be two white lines which are of equal length if the plane is on the course. A deviation from the course will cause one reed to vibrate more than the other and the corresponding line appears to lengthen. The longer line indicates the side of the course from which the plane has deviated.

A similar type of radio aid is the marker beacon. This consists of a low-power automatic transmitter with an effective range of from three to five miles. Each beacon transmits a characteristic aural signal which the pilot can identify and thus determine his approximate position. Both range and marker beacons are equipped with radio telephone attachments, the former using it at 15 minute intervals to identify the beacon and give weather reports and other information of value, while the latter uses it only in case of emergency.

Airway Markings

The airways are marked with uniform gothic letter markings, showing the meridian or true north, pointers indicating the name, the distance and the direction to the nearest airport. Uniform lighting is used for night illumination. Charts of all airways have been made by the Coast Geodetic Survey of the Department of Commerce, the Hydrographic Office of the Navy, and of the Army. Sectional maps are being prepared for the entire United States.

Intermediate Landing Fields

Under the provisions of the Air Commerce Act of 1926, the Secretary of Commerce was authorized to establish and maintain along airways all necessary air navigation facilities excepting airports. Regular commercial airports established on an air route may afford the necessary landing facilities, but they cannot be maintained by the government. Therefore, where landing fields and airports are non-existent, and where safety demands the establishment of landing facilities, the Federal Government has established and maintains intermediate landing fields. These are carefully selected fields, with an average area of about 47 acres, located on or near the air routes at intervals of from 30 to 50 miles. When necessary they are graded, smoothed, drained and prop-

erly lighted and marked. They are provided with two or more runways averaging 3000 feet long and 600 feet wide usually placed at right angles to one another.

Intermediate fields are marked by standard markers, with runway markers and field boundary markers.

The lighting equipment includes a revolving beacon, where feasible; white boundary lights, green range lights at opposite ends of the principal runways; red lights showing the heights of all dangerous obstructions near the field. There is also an illuminated wind direction indicator, and in some cases a battery of flood lights is provided.

Airway Traffic Regulations

The operation of all types of aircraft—airplanes, airships, and balloons—within the territorial jurisdiction of the United States must conform to the regulations promulgated by the United States Government. Federal regulation applies to all aircraft whether engaged in commerce or in non-commercial activities, and to interstate and international air navigation. The regulations are enforced upon all planes whether licensed or unlicensed, and apply whether or not the aircraft are operated upon a civil airway of the United States. The Air Commerce Regulations of the Department of Commerce contained the full code of regulations governing the navigation of the craft, the altitudes of flight, signalling, and the identification markings required of all aircraft operated within the United States. Detailed regulations governing the phases of the operation of aircraft include rules of the road, giving way regulations, altitude of flight, landing and taking-off maneuvers, aircraft lights, air navigation signals, license and identification markings, aerobatics, and related matters. Penalties of suspension or revocation of licenses and fines are provided for violation of the regulations.

Airports

An airport is defined as any locality, either of water or land, which is adapted for landing and taking-off of aircraft and which provides facilities for shelter, supply and repair of aircraft, or a place used regularly for receiving or discharging passengers or cargo by air.

Airports can be divided into three kinds: The "terminal airports" are the terminal facilities and filling-stations for aircraft. The "intermediate

landing fields" are the areas provided for safe landing and take-off along the air routes placed there to promote the safety of air commerce. "Auxiliary landing fields" are those marked and used for emergency landings along or adjacent to airways.

Terminal airports can be subdivided into a number of types according to ownership and administration. The first group of this classification includes the private and commercial airports which are owned and operated as private or business ventures by individuals, companies, clubs, or associations. As of March 1, 1939, there were 439 commercial airports and 95 private air fields in the United States. A total of 534 privately owned and operated airports.

The second type of airport according to ownership and administration, is the municipal airport. Ports of this type are built and operated by cities, towns, counties or other local governmental units. There were 790 municipal airports in operation in this country in 1939.

A third group of airports, classified according to administration, is a miscellaneous group, including principally the military ports owned and administered by the United States Army, Navy, Marine Corps, National Guard, and Reserve. In 1939, 60 airports of this type were operated by the United States Army and 26 by the Navy, Marine Corps, and Coast Guard, also 26 miscellaneous Federal government airports; and 48 state airports.

The steady increase in the number of intermediate landing fields until 1931 reflects the increasing activity of the Federal Government in constructing landing fields at more or less regular intervals along the regular airways as aids to aerial navigation. Since 1931, with longer distance service and higher altitude flying fewer landing fields are needed. Auxiliary fields suffice. Auxiliary fields are designated and marked as needed to supplement landing field facilities. The present policy of the United States Government is to establish landing fields equipped with lighting facilities at intervals along the airways and locate auxiliary fields between the landing fields.

One of the very significant developments in the field of air transportation has been the progress made in night flying. The development of night operation requires, among other things, lighting facilities at airports and landing fields. At present virtually all landing fields and most of the principal airports are lighted. The airports and landing

fields of all types equipped with night lighting equipment are shown below: [2]

Municipal airports	296
Commercial airports	88
Intermediate landing fields	265
Army airdromes	30
Navy air stations	12
State airports and landing fields	9
Auxiliary landing fields	13
Private airports and landing fields	8
Total	721

The Selection of Airport Sites

The problem of selection of sites for airports is a very perplexing one for the companies or municipalities who undertake the construction of air terminal facilities. Consideration must be given to: the size of the field, the shape of the field, the approaches of the port from the air, the location of the port with respect to the sources of traffic, meteorological conditions, and the cost of acquiring the site and of putting it into suitable condition for use as an airport.

The selection of an airport site should be definitely linked with city planning. Proximity and convenience of access to the business center and accessibility to the public are factors of primary importance. Due consideration should be given to local transportation and communication facilities. The area adjacent to an airport must be considered in the light of probable or possible commercial, industrial or residential development.

The site should be as free as possible from fog and ground mist. The soil should be capable of supporting reasonably heavy loads under all weather conditions, with as little artificial drainage as possible.

Should an extensive artificial drainage system seem necessary for best results, the cost of the system ought to be ascertained. The shape of the site may be quite as important as the size. The character and the height of the neighboring buildings may be such as to destroy the value of an otherwise adequate piece of land. Electric power and an abundant

[2] As of March, 1939, "Air Commerce Bulletin," United States Department of Commerce, Bureau of Air Commerce, Vol. 10, No. 9, March 15, 1939, p. 241.

water supply are essential; if they are not already available at the suggested location, the cost of procuring them must be taken into account. The land itself should be available at a reasonable price.

Rating scales which take into consideration the following important criteria have been used by some communities selecting airport sites: the adequacy of the area, possibility of expansion, freedom from obstructions, meteorological conditions, accessibility, topography, soil characteristics, drainage, surface, location with respect to electrical supply and communication lines, water mains and service, ease of identification from the air, and location with respect to lanes of air traffic.[3]

The airport should afford an adequate landing area sufficiently smooth to permit an automobile to be driven over it at a speed of at least 35 miles per hour, without serious discomfort to the passengers. It should be adequately marked so that it can be identified from the air. The port should be located on a good highway leading to the nearest city or town, and transportation facilities should be provided by steam-railroad, electric railway, or motor transportation lines to provide for the movement of passengers, mail or goods between the airport and the adjacent center of population. Each port should be provided with one or more wind-direction indicators, placed so that they can be seen from the air; service facilities to supply fuel, water and oil; and telephone communication facilities.

In addition to these basic requirements, the facilities of the airports vary with the location and size of the ports, the size of the communities served by the ports, the purposes for which they are built, the number of air transport lines using the ports, and miscellaneous considerations. The larger and more complete airports as well as many smaller ones have the following facilities: landing and take-off runways, identification markings, administration buildings, including field management office and traffic control office; passenger station facilities, including ticket and baggage service facilities and waiting rooms; restaurant and hotel facilities, recreation facilities of various sorts, hangars, service facilities for gasoline, oil and water; shops for minor or sometimes major repairs and overhauling; parking space for automobiles; warehouse facilities for goods storage and handling; fire fighting facilities; manufacturing facilities, in a few cases; facilities for handling mail, where necessary;

[3] "Airport Design and Construction," U. S. Department of Commerce, Aeronautics Branch, Aeronautics Bulletin No. 2, July, 1931.

facilities for meteorological services, and night lighting equipment, if the ports are used for night flying.

Only larger and fairly complete airports boast over a substantial percentage of these facilities. Smaller ports have need for or can afford but a few of these items of equipment.

Seaplane Airport Facilities

Airports for seaplanes require substantially the general equipment and facilities provided at airports for airplanes, in addition to the specialized facilities required for planes constructed to land upon and take-off from water. Seaplane airports should be located upon or directly connected with a body of water having a minimum depth of at least 6 feet at all times. The water should be sufficiently calm for operations in all ordinary weather. The body of water should be sufficiently large to permit landing and taking-off of seaplanes and flying boats without hazard, and free of drift materials. A canal or other stream should be provided if the port is connected with the body of water and not located directly upon it to allow the taxiing of the seaplanes without difficulty. The equipment and facilities required for an adequate seaplane airport include the following: a hangar, a wind-direction indicator, the marking of obstructions, repair service and equipment, facilities for removing planes from the water, a boat for towing, tender and rescue service, a radio receiving set and loud speaker, weather instruments, first-aid equipment, a register for recording landing and departing planes, mooring facilities, fire-fighting equipment, personnel to administer the port, sleeping quarters, waiting and rest room facilities, restaurant facilities, and location upon a good highway leading to the nearest community in order to afford ready access to the airports.

An unobstructed climb should be permitted to the planes after taking-off. Roofs, shoals, sand-bars, and other obstructions to navigation within the landing areas should be avoided unless the marking and lighting of the obstructions is such as to eliminate all hazard to seaplane operation. The day and night markings are required to conform to local and Federal harbor or river regulations.

Airship Landing and Mooring Facilities

Efficient airplane service depends upon three factors: the airplane, the airways with their beacons and intermediate landing fields, and the

terminal airports.[4] Airship service, on the other hand, is not so dependent upon intermediate landings fields, and fixed routes and beacons are also of secondary importance. The principal prerequisities for airship service are the airships and the terminal facilities. The only equipment necessary at traffic stops or ports of call is a mooring mast. The terminal or home location of the airship transport enterprise must also have a hangar sufficiently large to house the ship during storage and overhaul and repair periods. Commercial airship transport companies need not furnish hangar facilities at every port of call or at both terminals because such facilities would be prohibitive on account of the expense. Hangar facilities should, however, be available at least at one terminal.

The least expensive land equipment for handling dirigibles is the mooring mast. Airships in recent years have proven their ability to outride storms safely on outside mooring masts. The important factor in mooring airships at mooring masts is to keep the airships parallel to the wind.

Provision must be made with all outside mooring masts for permitting the ship to move horizontally through the entire 360 degrees. The vertical range involves a different problem. The ship must be kept as nearly horizontal as possible at all times. This is accomplished by the use of the ship's elevators, by moving the ballast, and by dragging devices.

A stub mast has been used by the Navy Department at Lakehurst, New Jersey. The mast is mounted on tractor treads and may be hauled about the field. After the ship is fastened to the stub mast, it is then easily and safely "walked" into its hangar. The U. S. Navy has also a "floating mast" on the *U. S. Patoka.*

Airship Terminal Equipment

In addition to mooring masts, main airport terminals should be equipped with sheds sufficiently large to house the airships. Repairing and reconditioning can be more easily done in the hangars or docks than when the airships are riding at outdoor mooring masts although repairs under the latter conditions have been made on several occasions. The equipment at the terminals should provide for refabrication of injured or torn parts, materials and machinery for repair and construction

[4] Black, Archibald, Civil Airports and Airways (1929), Chapter XII.

of the framework, and adequate supplies of both fuel and lifting gas, including a purification plant for the cleaning of the helium.

Perhaps the most difficult part of airship operation is the launching and docking of the ship. It is essential, therefore, that the airship hangars or docks should cause the least practicable interference with the normal wind currents, in order that the manipulation of the ship in and out of the hangar may not be complicated by cross currents created by the building itself or by the open doors.

Terminal hangars should be constructed of fire-proof materials. Elaborate sky lighting systems prove expensive in such large buildings. Shops and offices must be partitioned and heated separately, since heating the whole building would be both expensive as well as unnecessary.

Other terminal facilities for airships include: facilities for night-operating, handling or docking rails, wind screens to reduce the danger of the airships striking the sides of sheds or hangars, inflation facilities, and facilities for free-balloon operation and servicing.

Airport Management

Airports may be owned and operated in a number of different ways: (1) by the municipal, state or federal governments; (2) by a committee of a public body; (3) by private companies or individuals for the use of their own planes; (4) by private companies or individuals as a public port as a commercial venture; or (5) by several air transport lines as a joint terminal project.

Most of the airports of the United States as has been pointed out previously are either municipally owned and operated public ports, or privately owned public ports, open to the use of individuals, transport lines and others upon payment of fees. Airports are expensive ventures and the municipalities or private individuals or companies which own and operate airports depend for income upon: (1) the landing fee assessed upon planes using the airports; (2) the rental of storage space in hangars or for field storage; (3) the sale of oil and gasoline; (4) repairing and servicing planes; (5) restaurant or hotel facilities; (6) hopping, taxi or sight-seeing airplane services; (7) rental of manufacturing facilities or equipment; (8) the operation of air schools; (9) flying meets; (10) automobile parking; and rentals of various types of public concessions such as lunch, refreshment or amusement stands. Many of these revenue producing activities may either be operated

directly by the airport management or through concessionaires. The income from whatever sources obtained must be used to defray: (1) interest upon the cost of acquiring and improving the airport site; (2) interest upon the cost of equipment and facilities installed; (3) rentals; (4) salaries and wages of personnel; (5) light, heat, and power; (6) telephone and telegraph services; (7) cost of gas and oil; (8) insurance upon property; (9) taxes; (10) supplies; (11) depreciation; and (12) incidentals and miscellaneous expenses.

Few airports thus far in the history of air transportation have been successful ventures financially. This is not an economic waste if sound foundations are being laid for the future development of the air transportation industry, of which airports are important parts. Care should be exercised to insure each city at least one good airport without unnecessary and uneconomical duplication of airport facilities. One good airport can thrive in a community that can not support several second-rate ports.

The functions of airport management include also the enforcement of Federal and State laws and municipal ordinances at the airports, including the air commerce regulations and traffic rules, local regulations governing fire protection and building ordinances, and local field rules. The managements of airports must install and maintain an adequate system of airport records and an accounting system to insure the uniformity of all records at the airports. They must receive, furnish and disseminate weather information service received from observations taken at the airports; from the daily map service from "First-order" weather bureau stations of the United States Department of Agriculture; from other airports, from weather control stations on the civil airways, and from upper air stations of the Weather Bureau.

The airport management must maintain the register of airway and departing planes, required by the Civil Aeronautics Authority Regulations.

Bulletin boards must be provided in conspicuous places upon which must be posted weather information notices, warnings, rules and regulations and other matters of importance or interest.

Files of aeronautical maps and other data must be provided for sale and for reference file.

Communication and transportation facilities must be provided for the public using the airports.

Arrangements must be made for the control of air traffic at and adjacent to the ports.

The airport manager's officers must promote new business and develop existing business and arrange for the accommodation of the public through supplying information, sale of tickets, planning itineraries, checking baggage, and other services of like sorts. Contracts must be negotiated with tenants, lines and concessionaires, and revenues collected, accounted for and disbursed.

The airport sites and facilities must be managed, maintained and improved. Charges must be fixed for landing fees, rentals of storage spaces, services and repairs, use of field lights, sale of gasoline, oil and supplies, concessions, and for sale of seats at exhibitions, while other sources of revenue must be arranged in such a way as to meet the requirements without unjustly burdening the transport lines or others operating planes to or from the ports, the operators of the concessions or the public.

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CHAPTER 22

Air Mail Service and Charges

THE AIR MAIL of the United States is and has been since its establishment in 1918 one of the outstanding achievements in air transportation as well as one of the most important contributing factors in the development of air transportation in the United States.

The Army-Post Office Service, 1918

The first air mail route in this country was established by the Post Office Department in conjunction with the War Department between Washington and New York City, May 15, 1918. Planes, pilots, and other personnel were furnished by the War Department and the operation and maintenance of the planes were undertaken by the War Department, while the Post Office Department attended to the handling of the mail to and from the airports.

The Post-Office Department Service, 1918-1925

This arrangement was continued in force until August 12, 1918, when the Post Office Department took over the entire air mail service including personnel and equipment and the complete operation and maintenance of the service. This stage of the air mail history was the period in which the Post Office Department experimented with equipment, weather, night flying, flying and ground service arrangements, routes, postage rates, and other unknown quantities in regular route flying on a comparatively large scale and with considerable regularity. A number of planes were obtained through transfer from the Navy and War Departments. These were rebuilt and remodeled in order to adapt them for carrying mail. Safety and carrying capacity were the attributes sought in selecting and remodeling the craft. The first planes used for mail service when the War Department operated the service were army military planes. Later the Post Office Department acquired planes especially built for carrying mail. The steady increase in volume of mail traffic made necessary a type of plane carrying more than 500 pounds

of pay load. Competitive bids were received by the Post Office Department and planes which were faster and had twice the mail-carrying capacity of the earlier mail planes were purchased for the air mail service in 1926.

One of the outstanding contributions of the Post Office Department to aviation during this period of experimentation and development was the demonstration of the practicability of regular cross-country night flying over regular routes on definitely fixed schedules. Aircraft had of course been flown occasionally at night before the experiments by the mail service in 1923, especially by the United States Army aviators, but little regular scheduled route flying had been attempted.

Experiments were first conducted with the data compiled by the War Department. Beacon lights were set up on a route between Cheyenne, Wyoming, and Chicago; terminal fields were laid out and lighted, and emergency landing fields equipped with lights. Flyers made experimental night flights over various routes, and in August, 1923, a regular schedule of night flying was established between Chicago and Cheyenne. Flashing gas beacon lights at 15-mile intervals; emergency landing fields with rotating electric beacons, boundary markers, and telephone equipment; terminal fields with flood lights and boundary markers; planes equipped with luminous instruments, landing lights, and parachute flares; and efficient ground and flying organizations have made night flying a regularly scheduled service with a high ratio of actual flights to scheduled service.

Lighted airways have been constructed by gradual stages from 1923 to the present, eastward from Chicago to Cleveland and thence to New York, and westward from Cheyenne to Rock Springs, Wyoming, and later to Salt Lake City. The extension of the airways from Cleveland to New York and from Rock Springs to Salt Lake City was a great achievement in aviation engineering as it required the placing of beacon lights and emergency landing fields in sparsely populated mountainous country in places serviceable to the flyers and yet accessible from the ground.

Since the first experimental route between New York and Washington, inaugurated in May, 1918, and discontinued May 31, 1921, route after route has been added by the Post Office Department. The first part of a proposed transcontinental route was established May 15, 1919, between Chicago and Cleveland. The next leg from Cleveland to New York was put in service July 1 of the same year; the third, from

Chicago to Omaha, May 15, 1920; and the final stage between Omaha and San Francisco on September 8, 1920. No through transcontinental service was put in operation until July 1, 1924. A 32-hour schedule of transcontinental service was established at that time and has been maintained ever since. This route necessitated regularly scheduled night flights between Chicago and Salt Lake City.

Other Post Office Department routes were added from time to time and several were discontinued as the need or lack of need of the routes was demonstrated. The most important route perhaps is the regular overnight schedule between New York and Chicago. This service was established on a 5 nights a week schedule in 1925 and was made nightly in May, 1926. Contract routes were established through agreements between the Post Office Department and private companies to make direct connections with and to act as auxiliary services to the government-operated transcontinental or the New York-Chicago routes in the latter year.

The Post Office Department initially charged special rates for air mail service but it was forced on account of the failure to use the service to abandon this plan in 1919. From 1919 to 1924 selected first-class mail at regular postage rates was carried in the planes. Experiments were being made in service and much of the mail was not carried from the originating station to final station by air service. The transcontinental mails, for example, were carried by plane from Chicago to North Platte, Nebraska, and there placed on trains which left Chicago 24 hours earlier and carried in railroad mail service to the Pacific Coast. When the transcontinental all-air mail service was opened by the Post Office Department, July 1, 1924, special air mail rates were put in effect and since that time only mail matter addressed in care of air mail service with postage paid at air mail rates has been carried by planes. The present schedule of rates is discussed below.

The Contract Carrier Service

The third stage in the development of the service was ushered in by the Kelly Air Mail Act of 1925 which authorized the Postmaster General to enter into contracts with private persons for the carriage of the mails. Contracts were let for a number of feeder and auxiliary main lines during 1925 and 1926 and for the portions of the transcontinental route during 1927. The Postmaster General announced that the Gov-

ernment in transferring the service from government to private operation was placing the air mail service in the same relationship with the Post Office Department as the mail service performed by the railroads, electric railways, and steamship lines. This change in policy in the transportation of mail was designed to aid commercial air transportation by making available to the air transport companies the revenues for the transportation of mail. The Government announced that the transfer of the transcontinental air mail routes and the development of auxiliary feeder routes to private mail contractors was made in order to consummate the plans of the Post Office Department to demonstrate the feasibility of transcontinental scheduled service despite weather conditions and night flying and to transfer to commercial companies, as soon as these companies were strong enough, not only the physical assets of the Post Office Department but the technical data and experience gained through experimentation and operation.

Contracts are awarded to private aviation companies as a result of competitive bids for handling mails. The Kelly Act of 1925 provided for a distribution of the revenues on the basis of a count of postage revenue. The Act was amended in 1926 so as to base the compensation upon the basis of the weight of the mail carried.[1] The weight basis resulted in increasing slightly the amounts of compensation paid the contractors. The transportation of mail by air transport companies upon the basis of contracts awarded by the Government continued until 1934.

The Army Service, 1934

In February, 1934, all domestic air mail contracts were annulled by the Federal Government as a result of a governmental investigation in which charges were made that collusion and discrimination were practiced in the awarding of the contracts. The transportation of the air mail was assigned to the Army Air Corps from February 20 to May 16, 1934, when the carriage of the air mail was transferred to commercial air transportation companies. The air transport companies were required by the Government to be reorganized, and to be separated from air transport and airplane manufacturing companies, as conditions precedent to eligibility to receive air mail contracts.

[1] Air Mail Act of June 3, 1926.

The Contract Service 1934 to date

The Air Mail Act of 1934 provided for the transportation of air mail by air transport operators under temporary contracts. The Interstate Commerce Commission was given jurisdiction to fix from time to time the rates of compensation to be paid by the Government to the air mail operators for the transportation of air mail within the limits of compensation fixed by the Act.[2] The Commission was required by law to make an annual review of the rates of air mail pay, in order to assure itself that no company was receiving unreasonable profits. Each air mail contractor was required to submit for examination and audit by the commission, its books, accounts, contracts and business records, and to file with the Commission semi-annual reports of all free transportation issued by the company. The Commission was authorized and directed to investigate any alleged unfair practices and competitive services of companies transporting air mail which adversely affect the general transport business or earnings upon other air mail routes, and to order the practices or competition to be discontinued if unfair conditions are found to exist.[3] The Act provides, also, that after July 1, 1938, the aggregate cost of air mail transportation to the government may not exceed the anticipated revenue from air mail.[4] The Interstate Commerce Commission organized the Bureau of Air Mail to administer the regulation of air mail compensation under the direction of the Commission. This Bureau and all of its functions were transferred by the Civil Aeronautics Act, 1938, to the Civil Aeronautics Authority, as will be discussed in Chapter 25. The first air mail rate decision of the Civil Aeronautics Authority was handed down in May 1939. By this order the Mid-Continent Airlines, Inc., was awarded a rate of 38 cents per airplane mile for mail up to 300 pounds and 2.5 per cent of this amount additional for each additional 25 pounds of mail, for the direct airport-to-airport mileage.

[2] Act of Congress approved June 12, 1934, 48 Stat. 933; and amendment August 14, 1935, 49 Stat. 614.

[3] Air Mail Compensation Investigation, 206 I.C.C. 675.

[4] Air Mail Act, 1934, Section 6 (e).

The Development of Air Mail Traffic

The growth in volume of air mail traffic since the establishment of the domestic air mail service in 1918 has been steady and substantial. In 1918, the air mail route mileage amounted to 218 miles. In 1927 the route mileage totaled 8,865 miles, and by the end of 1938 it was 34,272 miles. In miles flown in mail service the operation has increased from 16,009 plane miles in 1918, to 5,779,863 plane miles in 1927; and to 46,112,904 plane miles in the fiscal year ending June 30, 1938. The volume of air mail traffic increased from 713,240 letters or 17,831 pounds of mail carried in 1918, to 1,065,498 pounds of mail transported in 1927. The pounds transported in 1918 are estimated. Approximately 40 letters are considered the equivalent of one pound. For the year ending December 31, 1938 the air mail traffic aggregated 14,845,719,671 pound-miles. The pound-mileage data, moreover, are much more significant since they reflect not only weight but mail transported. The income from air mail service paid by the United States Post Office Department to air mail operators has increased from slightly over $2,560,000 in 1927 to over $15,000,000 in 1938.

Domestic Air Mail Rates

The Post Office Department has experimented with rates of postage. During the first stage of the service special rates were charged for each route. Later selected mail was carried at regular postage rates. On July 1, 1924, with the establishment of the trans-continental route special airplane postage rates of 10 cents per ounce or fraction thereof were put in effect for transportation over the New York-Chicago overnight route and 8 cents per ounce or fraction of an ounce over each of the three transcontinental zones or legs, Chicago-New York, Chicago-Cheyenne, and Cheyenne-San Francisco. When the contract routes were inaugurated the zone rates were changed to 5 cents per ounce or fraction thereof for the transportation of the mail over each zone of the trans-continental or Chicago-New York overnight route plus 10 cents per ounce for transportation over the contract route. Thus the rate from Detroit to New York via contract route to Chicago and the overnight service, Chicago to New York, was 15 cents per ounce or fraction of an ounce.

In 1927 the air mail postage rate was put on a flat rate basis of 10

cents per ounce or fraction thereof without regard to distance, zone or route.[5] The rate was changed to 10 cents per ounce and then to 5 cents an ounce,[6] and still later to the basis of 5 cents for the first ounce and 10 cents for each succeeding ounce.[7] On July 6, 1932, as a result of the general increase in postage rates, the air mail rate was increased to 8 cents for the first ounce and 13 cents for each succeeding ounce. The present uniform rate of 6 cents per ounce or fraction thereof was established July 1, 1934. The flat rate basis has the advantages of simplicity and is designed to encourage the use of the mail service for important business and social communications.

Special airplane mail stamps are issued by the Post Office Department and special envelope markings have been approved. One recommended marking consists of three horizontal stripes across the envelope, the top stripe blue; the center white; and the lower one, red. Another approved envelope marking consists of two horizontal blue stripes and two vertical stripes with the words "Via Air Mail" between the horizontal stripes. These markings are not required. The payment of the air mail postage rates and the endorsement of the envelops with the words "Via Air Mail" in prominent places are necessary in order to insure air mail service.

Mail that is to be transported partly by railroad mail service must be paid at air mail rates, and the envelopes must be endorsed "Via Air Mail" to or from the point at which the mail is exchanged between the air and railroad routes.

Packages may be shipped by air mail providing they do not exceed 100 inches for both length and girth combined, and conform to the regulations of the Post Office Department governing parcel post service generally.

The postal services of insurance, registry, special delivery, and collection on delivery (C.O.D.) are available in connection with the air mail service upon payment of the same additional fees as in ordinary postal service.

[5] February 1, 1927.
[6] Act Approved May 17, 1928.
[7] Effective August 1, 1928.

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The United States—Foreign Air Mail Services

Mail from points in the United States to foreign points was first carried by airplanes under contractual arrangements with air transport companies between Seattle, Washington, and Victoria, British Columbia; and between Key West, Florida, and Habana, Cuba. These routes were established October 15, 1920. Another route was established from New Orleans to Pilottown, Louisiana, in order to overtake mail vessels which had left New Orleans for points abroad. A contract air mail route was established in Alaska, on February 1, 1934. This route was discontinued on June 30 of that year. The Key West-Habana route was discontinued in 1923 but was resumed in 1927, as a contract air mail route. The American terminus was moved to Miami, Florida. This route was the foundation upon which has been built the extensive foreign air mail service between the United States and the West Indies, and Central and South American countries. Routes have also been established between New York and Montreal, Canada; between Burlington, Vermont, and Montreal; between Pembina, North Dakota and Winnipeg, Canada; between Brownsville, Texas, and Mexico City, Mexico; between Baltimore, Maryland, and Hamilton, Bermuda; between Los Angeles, California, and Mexico City. Trans-Pacific service from San Francisco and Hong Kong via Manila, Honolulu, Midway, Wake and Guam, and experimental service between Hawaii and Australia have been instituted. The trans-Atlantic route between the United States and Great Britain and Europe was established in 1939. This route is by way of the Azores.

The twenty-five air mail services between the United States and foreign countries as of January 1, 1938 totalled 32,522 miles, operated by seven different companies. The United States—foreign air mail service has grown from 90,626 plane-miles operated in 1927 to 10,925,656 plane-miles operated in 1937. In 1938, 785,025 pounds of foreign air mail were carried. The compensation paid to air mail operators increased from $82,162 paid in 1927 to over $8,600,000 paid to the companies in 1938.

Air mail is now available between the United States and all countries of Central America, South America, the West Indies, Bermuda, Hawaii, and the Orient at a fraction of the time required to transport the mail by water and land routes.

The rates charged for foreign air mail service from the United States to foreign countries in North America, Central America, South America, and the West Indies are based upon the regular postal rates plus a fee for the air mail service. The rates range from 6 cents per ounce to Canada to 70 cents per half ounce to Japan and China.

The foreign air mail rates include dispatch by the United States domestic air mail service, where it is available, as well as the services of the international air mail carriers. Mail consigned to countries which have air mail services is handled also by the domestic air mail services in those countries.

The Advantages of Air Mail Service

The air mail service has contributed greatly to expediting the mail service between the larger cities of the United States and has saved whole business days in connection with mail service between a number of important cities. The service has been brought from an experiment to a demonstrated and proven institution of great and growing value. The contracts for mail service awarded to private operators permit the carriage of passengers and freight by these lines and the mail contracts materially supplement the earnings of these lines and encourage the development of commercial aviation.

The service is particularly valuable in the transportation of urgent business and social communications, in saving interest charges in the clearance of checks, interest-bearing securities, bills of lading, insurance policies, bills of exchange and drafts, and other financial documents. All mail requiring speed is logically being attracted to the air mail service.

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CHAPTER 23

Air Passenger Transportation

The transportation of passengers by air in regular scheduled passenger service in the United States dates from 1926, although a few passengers had been transported in sight-seeing, aerial taxi or other miscellaneous services prior to that time. In 1926, passenger services were inaugurated by the Western Air Express between Los Angeles, California, and Salt Lake City, Utah; and by the P. R. T. Air Service, between Philadelphia and Washington and Norfolk. Following the enactment of the Air Mail Act of 1926 which awarded contracts for the transportation of air mail to regular transport lines, and after the construction of airways as a result of the Air Commerce Act of 1926, regular passenger transport services were established by several commercial air transport lines.

Volume of Air Passenger Traffic

The growth in the volume of air passenger traffic has been one of the outstanding developments of the past decade. Despite the handicaps of business depression, the lack of adequate planes and facilities in the earlier years of the period, and the misfortune of occasional widely publicized accidents, the number of passengers transported and the number of miles of passenger service performed have increased from 5,782 passengers carried in 1926 to 1,176,858 passengers in 1938. The number of passenger miles of service performed has increased from 84,104,572 passenger miles in 1930, the first year in which these data were recorded, to 476,402,280 passenger-miles in 1937. In 1938, the 17 commercial air transport companies engaged in domestic passenger services between points in the United States operated over 31,000 miles of air passenger routes.

Between the United States and foreign countries and territorial possessions of the United States, 7 air transport operators were engaged in passenger services in 1938. These companies operated over approxi-

mately 32,500 miles of route. The development of passenger traffic by these companies has been spectacular. In 1927, the number of passengers carried between the United States and foreign countries was 18. In 1938, there were 192,684 passengers carried in United States foreign air services. In 1930, these lines performed 19,732,677 passenger miles of service; in 1938 the passenger miles had increased to 77,836,916.

United States Passenger Transport Companies

The air passenger transport companies in the United States may be divided into several more or less distinct groups; first, those engaged in domestic service; and second those engaged in foreign service. The domestic air passenger transport companies, in turn, may be sub-divided into the large transcontinental companies, the somewhat smaller sectional companies, and a third group of shorter lines operating in various parts of the country over short routes often supplemental to the larger lines.

Important transcontinental air lines include American Airlines, Inc.; Transcontinental and Western Air, Inc.; and the United Air Lines Transport Corporation. The larger sectional air lines which operate more than 1,000,000 plane miles of scheduled transport service include: Braniff Airways, Inc.; Chicago and Southern Air Lines, Inc.; Delta Air Corporation; Eastern Air Lines; Hanford Airlines, Inc.; Northwest Airways; Pennsylvania-Central Airlines Corp.; and Western Air Express.

A few representative short lines include: Atlantic and Gulf Coast Airline, Inc.; Boston and Maine Airways, Inc.; Continental Air Lines, Inc.; Wilmington-Cataline Airlines, Ltd.; and Wyoming Air Service, Inc.

The United States-foreign companies include Canadian Colonial Airways, Inc.; Pan-American Airways, Inc.; Pan-American-Grace Airways, Inc.; and the Seattle-Victoria Air Mail, Inc. Air lines engaged in operation between territorial possessions of the United States include Intercoastal Airways, Inc., in Alaska; the Inter-Island Airways, Ltd., in Hawaii; Marine Airways, Inc., in Alaska; and the Pacific Alaska Airways of the Pan American Airways, Inc.

The total revenue plane-miles of service performed by these groups of air transport companies in 1938 were:

1.	Domestic air lines	69,668,827
2.	United States—foreign air lines and territorial air lines	11,389,300
	Total	81,058,127

In addition to the passengers carried by the regularly scheduled air transport carriers, passengers are carried in emergencies in chartered plane service, in "cross country" sight seeing or pleasure flying services performed for hire, and in irregular taxi-plane services upon call. These three latter types of air passenger services are classified as miscellaneous passenger services and the passengers so transported are not included in the statistical data above. These data relate only to the passengers carried in regular scheduled air transport services.

Sources of Air Passenger Traffic

The increase in air travel may be accounted for by the comprehensive policies of advertising, solicitation and promotion conducted by the air lines; by the improvement in planes and facilities for air travel; by the fare policies of the air lines; and by increased safety in air travel.

The efforts of the air lines in passenger traffic development have been focused upon a number of groups of potential air travelers including business executives, professional people, salesmen, tourists and pleasure seekers, social travelers, students, and those who require fast transportation in business or personal emergencies. In the past few years there has been a substantial increase in ordinary business and social travel by air.

Improvements in Air Travel

The improvement in airplanes has also contributed to the volume of air traffic through making air travel more comfortable and pleasant. The improvements consist of increased size of planes, improved individual adjustable seats, increased aisle space and space between seats, increased headroom, improved lighting, better heating and ventilation and air renovation, better arrangement of windows for vision, reduced engine noise and vibration, lavatory facilities, sleeper planes for night travel and improved facilities for serving meals aloft. The comfort and ease of travel by air is increased by arrangements for sale of tickets at down town ticket offices, the delivery of tickets, arrangements for space reservations,

baggage handling to and from and at the airports, transportation to and from airports by taxi or limousine service, and other conveniences. Stewards or stewardesses serve meals, check tickets and seating, provide magazines and newspapers for passengers, point out places of interest enroute, and generally look out for the comfort of the passengers. Some of the airlines employ graduate nurses as stewardesses.

Air transportation companies have altered their policies with respect to the rate of passenger fares in order to increase the volume of traffic. Generally speaking, the distances between the principal cities of the United States are shorter by airway than by railroad or highway, so that fares somewhat higher per mile by airway than by other routes are possible without placing the airways at a competitive disadvantage. The speed of air travel, and the serving of meals enroute without extra charge, must also be considered in comparing air passenger fares with those of other passenger transport agencies.

Air Passenger Fares

Between 1927 and 1929 the average rate of fare of air passenger carriers increased from 10.6 cents in 1927 to 11 cents in 1928, and 12 cents per passenger-mile in 1929. These rates were more than double the first class railroad rates including chair car or sleeping car service. Since 1930 there has been a steady downward trend in the average rates of fares for air travel from 8.3 cents per passenger-mile in that year to 5.6 cents in 1937. Between many cities served by railroads and air lines the air passenger fares are approximately the same as first class railroad fares. Extra charges for sleeping berths are made by the air lines which offer this service.

Airlines offer round-trip fares usually at rates 10 per cent less than twice the one-way fares. In some cases children under two years of age who do not occupy seats are carried free if accompanied by an adult passenger. Children between two and twelve years of age are sometimes carried at half fare although this policy is not uniform. Baggage weighing less than 35 pounds per passenger is usually carried without charge. Extra charges are made for excess baggage and the amount of baggage transported by plane is usually limited to 50 pounds. Several air lines offer transportation to individuals or companies using air transportation regularly at 15 per cent less than the standard fares. Combination rail-and-air, bus-and-air, steamship-and-air services are sometimes offered by

air lines in conjunction with these other agencies of passenger travel. The air line rates include guaranteed seat arrangements. Reservations may be cancelled and the purchase price is refunded if the reservations are cancelled within a reasonable time before departure. Special rates or fare concessions have been granted by some companies to students or others. These arrangements are usually contingent upon the use by the passenger holding this type of transportation to space available after full fare paying passengers have been accommodated.

Safety in Air Transportation

One of the most important factors in the development of air passenger transportation is safety and the corollary, the knowledge of the facts with respect to air safety. A sharp distinction must be made in safety as it relates to miscellaneous air transportation services, and the safety record of the commercial air transport lines.

Since 1928, the first year for which data are available, the record of the regular air transport lines, judged by the number of fatal accidents in proportion to the number of plane-miles operated, and the number of passenger fatalities in proportion to the number of passenger-miles of service operated, shows substantial but irregular improvement. In 1928, in domestic and foreign scheduled transport services, there were 12 fatal accidents, and 15 passenger fatalities; while in 1937 there were 6 fatal accidents, and 51 passenger fatalities. The ratio of the number of plane-miles operated per fatal accident in 1928 was approximately one fatal accident in about 900,000 plane-miles. This ratio has ranged irregularly in the six months periods into which these accidents data are compiled from less than 1,000,000 to over 13,000,000 plane-miles operated per fatal accident. The ratio of the number of passenger miles of service performed to each passenger fatality has fluctuated irregularly from one passenger fatality in a little over 2,300,000 passenger miles in the first six-month period of 1930,—the first period for which these data were kept,—to one passenger fatality in nearly 41,000,000 passenger miles of service in the first six months of 1935. In 1937 the record was from one passenger fatality in a little over 2,300,000 passenger miles to one passenger fatality for between 10 and 11 million passenger miles per passenger fatality, while in the last six months of 1938, the record of 34,390,026 passenger miles per passenger fatality was established.

The record in miscellaneous flying services is less favorable. The number of miles flown per fatal accident since 1928 has ranged erratically between one fatal accident per a little over 130,000 plane-miles operated in the first six months of 1928, to one fatal accident per nearly 700,000 plane-miles in the first half of 1936. The number of passenger miles of service rendered per passenger fatality has ranged from 133,000 passenger miles per passenger fatality in the first half of 1928 to one passenger fatality in over 1,000,000 passenger miles in the first six-month periods of 1936 and 1937. In the second half of 1937 the ratio was one passenger fatality per 850,000 passenger miles of service. The principal causes of accidents in scheduled and miscellaneous flying services as officially determined by thorough Federal governmental investigations and reports show wide variations in the causes in scheduled and miscellaneous services.

	Percentage of All Accidents, Last Half 1938	
Causes:	Scheduled air transport services:	Miscellaneous flying services:
Personnel, including pilots and other personnel	32.96%	51.10%
Material including power plant, structure, handling qualities and instruments	30.34%	27.08%
Miscellaneous, including weather, darkness and terrain	32.16%	21.15%
Undetermined and doubtful	4.54%	.67%

Improvements in planes and navigation facilities and the high standards of training and experience have decreased the dangers of travel in scheduled air services. The hazards of weather have not yet been satisfactorily overcome. In miscellaneous flying services the large number of planes, some of which fall below the standards maintained in scheduled services, and the inferior training and experience of some of the pilots engaged in miscellaneous services are reflected in the larger percentages of accidents due to personnel and material than in the scheduled commercial services.

Much emphasis has been laid upon safety by the United States Government, by the air lines and by those engaged in all types of flying services. Some of the outstanding developments in safety include the development of multimotored transport planes which can be navigated

with half or less of the motors functioning; de-icing equipment to free wings of ice; the development of instrument and gyro-pilot navigation; improved radio communication facilities and technique; increased airway navigation facilities, including radio beacons, improved lighting, and additional intermediate landing fields; improved meteorological service and weather reporting facilities; and the postponement of service in adverse weather.

The Advantages of Air Passenger Service

Travel by air has the obvious advantage of speed. Service by air is maintained between the important air traffic centers of the United States at speeds between 150 and 200 miles per hour, airport to airport. This increased speed brings many large cities, requiring all-day or all-night travel by other means of transportation within a few hours of each other by air travel, and cities separated by several days' travel within overnight reach. It is now possible to spend a whole business day in New York, Chicago, St. Louis, San Francisco and Dallas, in a single week by air travel. Air passenger service also has advantages of affording unique scenic opportunities, cleanliness, comfortable travel, and other advantages of luxurious service.

Experiments now being made with high-altitude flying offer additional opportunities for increased speed and further freedom from weather interference. The combined efforts of municipalities and air lines are being directed toward improving the speed and decreasing the cost of transportation between the airports and the centers of other larger cities. This problem is one which requires attention. The distances between airports and city-centers range from a few to a dozen miles and the time saved in air transportation is sometimes off-set, in part at least, by the time required to get to and from the airports. This is true particularly in cases where the cities between which air services are maintained are within a few hundred miles of each other.

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CHAPTER 24

Air Express Services and Charges

Goods have been transported by air occasionally since early in the history of air transportation. Until 1919 these shipments were incidental and irregular movements of goods urgently needed in emergencies. In 1919 the American Railway Express Company first undertook to transport goods by air as a commercial venture. A large plane was loaded at New York with 1100 pounds of express matter for transportation to Chicago. Unfavorable weather and fuel shortage forced landings to be made first at Pittsburgh and later near Cleveland. The wings of the plane were so badly damaged in the second landing that the plane was unable to continue, and the flight was abandoned.

From 1919 until 1927 freight was transported by air either by private carriers or by some of the air transport companies engaged also in the transportation of passengers. The volume of traffic transported by commercial air lines was not large, aggregating only 3,555 pounds in 1926, but by the end of this period the amount of traffic transported privately amounted to 1,729,535 pounds, and in 1927 to 2,217,621 pounds.

On September 1, 1927, the American Railway Express Company established a transcontinental air express service through contracts with commercial air transport companies, including, originally, Colonial Air Transport, National Air Transport, Boeing Air Transport, Western Air Express, and Northwest Airways. The American Railway Express Company transported the goods to and from the airports either by motor trucks or by the rail and motor services of the American Railway Express Company. From airport to airport the goods were transported by the airlines as agents of the express carrier.

Meanwhile from 1927 to 1932, the private transportation of freight by air was continued principally by Ford Motor Company. The amount of freight so transported ranged between a little over one and one-half to a little less than two and one-half million pounds between 1927 and 1931. In 1932, the volume of privately transported freight fell to

669,011 pounds. Since that year the amount has been so negligible that it is not recorded.

The air transportation companies other than those acting as agents of the American Railway Express Company either operated their own individual air express services or did not transport air express traffic.

In 1929 the Railway Express Agency, Inc., an express company owned jointly by the railroads of the United States, was organized to take over all of the assets and all of the business of the American Railway Express Company, including the air mail service. The service was extended and developed by the Railway Express Agency. In 1932 the volume of express traffic transported by the commercial airlines for the first time exceeded the volume of goods transported by private carriers—1,033,970 pounds being transported by the commercial air transport companies and less than 670,000 pounds being transported by private air services.

Since 1933 the volume of express traffic has grown steadily and rapidly from about one and one-half million pounds in 1933 to over seven million pounds in 1938. Over a million ton-miles of air express service were performed in 1935 and over two million ton-miles in 1938. In the years between 1929 and 1937 the express services of individual air lines and a joint air express service performed by the General Air Express Company have been discontinued and the Railway Express Agency now operates air express service over 31,084 miles of domestic airways in the United States. All of the commercial air transportation companies engaged in passenger service perform express services under contracts with the Railway Express Agency. The merger of the Southeastern Express Company into the Railway Express Agency in 1938 makes it possible for air express service to be offered to and from every community in the United States served by the express agency. About 30 per cent of the total volume of air express traffic moves part of the distance by railroad to or from the air interchange points. This traffic is shipped from or consigned to places not on the airlines.

Types of Goods Transported in Air Express Service

The articles shipped by air express service consist chiefly of goods of high intrinsic value and small size and weight, samples of goods of almost all kinds, style goods, and emergency shipments where speed in

transportation is so important that the rate is of little importance. The average weight of shipments by air express is between 6 and 7 pounds, and the average distance is 831 miles.

Among the many articles shipped by air express the following are typical: precious metals, currency, financial documents, jewelry, plans and specifications, rare perishable goods of all kinds, style wearing apparel, millinery, perfumes, furs, sporting goods, silks, satins, laces, tapestry, electrotypes, photographic negatives, especially those having news value, samples, and emergency shipments urgently needed in order to avoid lost time of machines and apparatus.

Certain types of articles are excluded from air express service because of the danger of transporting them or because of the extraordinary risk. Among the articles excluded from air express are explosives, inflammables, dangerous acids, livestock or animals, articles of extreme fragility, and articles valued at more than $25,000 each. Other articles are accepted for transportation by air only upon special arrangements, including packages of goods weighing more than 200 pounds; and packages exceeding 106 inches in length and girth combined, or 60 inches in length, or 19 inches in width, or 40 inches in length and over 4 inches in width.

Air Express Transportation Contract

Goods shipped via the air express service of the Railway Express Agency are transported under the uniform air express receipt executed as a contract between the Express Agency and the shipper of the goods. This shipping contract is a limited liability contract. The Express Agency agrees to carry the goods subject to terms and conditions limiting the liability of the carrier in consideration of the rates charged for the carriage of the goods. The charges are based upon the value of the articles which is agreed not to exceed $50.00 for any shipment of 100 pounds or less, and not to exceed 50¢ per pound of actual weight for any shipment exceeding 100 pounds in weight. The liability of the carrier is limited to these amounts. The agreed or released value is binding upon the shipper unless a greater value is specifically stated in the contract at the time the shipments are made. If a higher valuation is declared by the shipper and extra charges are paid to the carrier, it will assume greater liability. An additional charge of 10¢ is made for each $100.00 or fraction of $100.00 of extra valuation fixed by the agreed

or limited liability valuation, subject to the maximum valuation of $25,000 per shipment.

Unless caused by its own negligence or that of its agents the Express Agency is not liable for differences in the weight or quantities of the goods shipped caused by shrinkage, leakage, or evaporation, or for the loss of money, bullion, bonds, currency, coupons, jewelry, precious stones or other articles of extraordinary value, unless the articles are specifically enumerated in the express receipt. It is not liable, unless the loss, damage, or delay is caused in whole or in part by its own negligence or that of its agents, nor for loss, damage or delay caused by the act of default of the shipper or owner of the goods; by the nature, defect, or inherent vice of or in the property transported; by improper, insecure or insufficient packing, securing or addressing of the goods; by acts of God, the public enemies, authority of the law, quarantine, strikes, riots, perils of navigation, hazards or dangers incident to a state of war, or occurrences in customs warehouses; by the examination of the goods or partial delivery of collect on delivery shipments to consignees; or for delivery of the goods at stations where the company has no agent, after the goods have been left at such stations.

These restrictions or limitations upon the liability of the carrier parallel those imposed by the Express Agency in connection with goods carried in railway express service. The Express Agency in its air service, as in other branches of its service, requires that the packages containing fragile articles or articles composed wholly or partially of glass, be so packed as to insure safe transportation by express with the exercise of ordinary care. All packages containing fragile articles must be plainly marked in order to indicate the nature of the contents, and if the fragility is such as to make the goods liable to damage from shock, the goods are excluded.

Claims against the Express Agency for loss, damage or delay in connection with goods transported by air must be made in writing within six months after the delivery of the goods. In case of failure to make delivery, claim must be filed within six months and fifteen days after date of shipment. This regulation applies in all cases except where the loss, damage or injury for which claim is filed is due to delay or damage while the goods are being loaded or unloaded or to damage while in transit due to carelessness or negligence of the carrier. Suits at law for loss, damage or delay must be instituted within two years and one

day after the dates when written notices are given by the carrier to the claimants that the claims of the latter have been disallowed wholly or in part.

United States—Foreign Air Express Service

Air express service is maintained between the United States and foreign countries by all air transport companies operating between the United States and these countries, and by the joint service of the Railway Express Agency in connection with these lines, particularly with Pan American Airways. The volume of freight transported by the air transport companies engaged in foreign service has grown from 6,240 pounds transported in 1928, the first year in which there is record of such service, to 2,116,633 pounds in 1938. Twenty-five foreign air express routes were operated by 7 air transport companies in 1938. The daily average airplane miles scheduled in foreign air express service was 19,410 plane-miles. These services were maintained over 26,454 miles of air express routes.

If the goods carried by the Railway Express Agency are consigned to places in foreign countries, the shipments are subject to all the terms and conditions of the shipping contracts of the ocean carriers accepted by the Express Agency to handle the shipments. These regulations apply, of course, to the portions of the ocean routes and to transportation lines abroad. The transportation and delivery of the goods by ocean and foreign carriers is subject to the laws and regulations of the foreign carriers and governments. The Express Agency is not responsible for loss, damage or delay to shipments occurring outside the boundaries of the United States which are occasioned by the acts of the ocean or foreign carriers or of foreign governments.

A period of nine months after the date of delivery is allowed for filing claims in connection with shipments to points outside the United States, or nine months and fifteen days after date of shipment if the claims are for non-delivery.

Shipments destined to foreign places which are subject to customs duties, taxes or levies may be stopped in transit at foreign ports of entry, at the frontiers or at depositories. Here they may be held awaiting examination and the assessment and payment of charges or fees. When duties, taxes, fees or other charges are advanced for the accounts of the owners of the goods by the carriers, the owners are required to agree,

as a condition precedent to the acceptance of the goods for transportation, that such charges shall be a lien upon the goods.

These regulations applying to the transportation of export shipments are, of course, enforced when goods move partly by air express service, and partly by rail or ocean carriers in a through express export movement.

Air Express Collect on Delivery (C.O.D.) Service

Collect-on-delivery shipments are accepted for air express transportation subject to the same rules that govern C.O.D. shipments in rail express service. A charge for collecting and remitting the amount of C.O.D. bills is collected according to a table, which ranges from a charge of 18¢ for the collection and remittance of a $2.50 bill to $3.25 for a C.O.D. service in connection with the collection and remittance of a bill for $1000. Over $1000, the C.O.D. service fee is $3.25 per $1000.

The express company reserves the right to return collect-on-delivery (C.O.D.) shipments, at its option, to the consignors within thirty days if the amounts to be collected are not paid. Notices of non-delivery are given the consignors by mail and the carrier's obligation is discharged by the return of the goods.

Air Express Rates—Railway Express Agency

Air express rates are based upon the size and weight of the shipments, the valuation of the articles, and the distance transported. The charges for transportation of express matter by air are quoted in cents per pound or fraction of pounds commencing with an initial rate for shipments of ¾ of a pound. The rates are graded by ¼ pound increments in weight up to 5 pounds; by ½ pound gradations up to 10 pounds; and by 1 pound additions beyond 10 pounds. The rates are divided upward also by distance. Twenty-four scales of rates, numbered 1 to 24 inclusive, are provided to reflect the difference in distance. The air express rates are based upon the measurement of the package. The rates are based upon weight with the provision that the shipment may not measure more than 400 cubic inches to each pound. The standard rates are based also upon a limitation upon the liability of the express carrier to not over $50.00 for each shipment of 100 pounds or less, or 50¢ per pound of actual weight in cases of shipments weighing more than 100 pounds. The charges are computed separately for each pack-

age if the shipments consist of more than one package, if any package exceeds 400 cubic inches per pound. In cases where the packages do not exceed 400 cubic inches per pound, two or more packages from the same shipper to the same consignee may be charged for at the aggregate gross weight as if the shipments were one package.

Shipments of cubic measurement exceeding 400 cubic inches per pound are rated according to space at the rate provided for each pound or 400 cubic inches. Thus a shipment weighing five ounces which measures 20 inches by 10 inches by 4 inches would be rated at 2 times the pound rate. The cubic measurement 20 inches by 10 inches by 4 inches equals 800 cubic inches, which divided by 400 cubic inches equals 2. This quotient is used, then, as the poundage basis for rate quotation without regard to the actual weight, if the weight is less than the quotient obtained. Thus, measurement weight takes precedence over actual weight if the former is greater than the latter.

Shipments offered for transportation by the air express service of the Railway Express Agency are subject to minimum charges per package if the charges upon the basis of size and weight are less than the minimum rate. The minimum rate per package is based on the rate for a one pound package which is blanketed to all points at $1.00.

If shipments transported by the Railway Express Agency air express service are moved to or from the air terminals by railway express the normal railway express rates between the air ports and the points of origin or destination are added to the air express charges discussed above. Pick-up and delivery services are performed by the Express Agency in connection with the movement of the goods between the storedoors of shippers or consignees and the airports.

The air express tariffs are filed with and subject to regulation by the Civil Aeronautics Authority.

Contracts with Air Carriers

The Railway Express Agency's contracts with the air transport companies carrying the express traffic are standard contracts. They are filed under the provision of the Civil Aeronautics Act with the Civil Aeronautics Authority, and are subject to the approval of the Authority.[1] These contracts provide for the division of earnings, expenses and liabilities between the express company and the air carriers. The con-

[1] Civil Aeronautics Act, 1938, Sections 412 (a) and (b).

tracts between the Railway Express Agency and the air carriers are doubtless influenced to a greater or less extent by the uniform express contracts applicable between the railways and the Express Agency, as well as by the regulatory measures to which air express transportation may in the future be subjected. The charges for the transportation of goods by express in connection with railroad service in interstate commerce are regulated by the Interstate Commerce Commission, while the charges for interstate air express service are regulated, as has been stated, by the Civil Aeronautics Authority. The contracts between the Railway Express Agency and the railroads are subject to federal regulatory supervision.

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CHAPTER 25

Regulation of Air Transportation

Local Regulation

The high speed of air transportation and the long distance traversed by airplanes and airships in transport and other services are factors which tend to lessen the importance of local regulation. There are, however, several aspects of air transportation which are peculiarly within the regulatory sphere of municipalities, villages, boroughs, towns, townships, counties and other local units of government.

Acquisition of Airports

Among the most important functions of local governments in the field of air transportation is that of acquiring, constructing and operating airports. In some cases the local governments must obtain authority from the state governments to acquire the land upon which airports are to be located, to raise funds to purchase the land, by bond issue or otherwise, to condemn privately owned land for airports or landing fields by exercise of the power of eminent domain, to acquire air space to provide for unobstructed landing and taking-off of aircraft, to acquire easements in land for lights and markers, and similar authority. In some states, the local governmental units have no general right of condemnation so that special condemnation laws for airports must be enacted similar to the laws pertaining to other condemnation proceedings.

Construction and Operation of Airports

A second group of functions of local governments relate to the construction and operation of the airports. After the airport sites have been acquired, the land must be graded and drained, buildings must be erected, provision made for water supply, for sanitation and fire protection, electric light supply arranged, and other facilities must be provided. If the airport is to be operated by the local government as a

public enterprise equipment must be bought and a staff employed to manage the airport. If the ports are to be operated by lessees arrangements must be made for authority to lease the properties. In cases where the airports are publicly operated authority must be obtained to establish landing and other fees and charges in order to derive revenues with which to operate the projects. Deficits in operating revenues as compared with operating and other expenses must be met by funds raised by taxation, bond issues or otherwise.

Policing

The third group of functions of local governments which are significant to air transportation includes the policing and protection of the airports. Airports must be provided with police and fire protection; sanitary services and inspection including sewer and water supply; the operation of planes in landing, taking-off, and flight in the vicinity of the airports must be protected from encroachments of high buildings, factory smoke-stacks, towers, tanks, high-tension electric wires, smoke, gases, or other structures and hazards to air navigation. This sometimes involves the condemnation of the structures, the acquisition of land adjacent to the airports, or zoning ordinances which control the development and use of the areas surrounding the airports.

Regulation of Use of Airports

Local governments must regulate the manner in which the airports and approaches to the airports are used by aircraft, their operators, and the public. The Federal Government has recommended a uniform set of airport field rules for adoption by local governments so as to provide adequate and similar regulations in different airport cities. Many municipalities have passed ordinances embodying these uniform field rules in substance. The rules provide that the airports shall be open to use by licensed aircraft only. The aircraft must be operated by licensed pilots. Only pilots or others who comply with all regulations, including registration upon landing, may use the airports. Rules are provided for the regulation of the conduct of concessions within and adjacent to the airports. Charges are provided for services and supplies. The hours or conditions upon which the airports and facilities are open for service are set forth. The lighting of the ports is regulated. Regulations are provided for marking restricted areas on the fields. Rules governing the

providing of first aid kits, safety devices, reporting of accidents, and obtaining names of witnesses to accidents are also included.

Uniform regulations are provided for the landing and taking-off of planes and airships, the operation of aircraft engines, taxiing of planes, pilot regulations, parking and mooring rules are also contained in the field regulations. Since airplane and airship operation presents unusual fire hazards the uniform field regulation adopts in substance the rules of the National Board of Fire Underwriters governing smoking in the vicinity of planes, airships or hangars; the fueling of planes; the cleaning of aircraft motors; and the use of "dope," the preparation used upon the wing surfaces of planes.

Severe penalties are usually contained in the field rules for violation of the regulations.

Extraterritorial Jurisdiction of Local Governments

A difficult problem is sometimes raised when the airport site is wholly or partially outside the physical boundaries of the city or other community which is served by the port. In such cases it is necessary to obtain state authorization for the acquisition of land, the operation of the airport, the protection of the airport from encroachment, the policing of the airport, and the regulation of its use. A uniform airport enabling act recommended by the Federal Government makes provision for state authorization of such action by the local units of government in connection with airports or landing fields whether they are within or without the geographical limits of the local political subdivisions.

State Regulation of Air Navigation and Transportation

The pioneer state in the regulation of air navigation was Connecticut. The first law was enacted in 1911. In the same year a recommendation was made advocating state regulation of air transportation to the Committee on Jurisprudence and Law Reform of the American Bar Association, but the Committee did not recommend the adoption of the resolution on the ground that the subject had not yet become a matter of general interest. In 1920 Special Aviation Committees were established by both the American Bar Association and the National Conference of Commissioners on Uniform State Laws. Both of these Committees and Associations have sought to promote uniform state legislation for aviation.

In 1921, the report of the Special Aviation Committee of the American Bar Association commented upon the backwardness of the development of commercial aviation in the United States and stated that this lack of progress was generally felt to be the fault of the law. The Committee stated its conclusion that the law respecting aeronautics was the one fundamental problem of the commercial development of aviation at that time.

From 1922 onward, the trend in the development of aviation legislation was in the direction of state laws to regulate and aid intrastate aviation and a Federal act to regulate and aid interstate commerce by air. In 1926 the Federal Air Commerce Act was enacted by Congress. The recognition by Congress of the dual functions of the Federal and state governments in regulating air navigation, intrastate and interstate, is evidenced by the Air Commerce Act and by the report of the United States Senate which accompanied the Senate Bill (The Bingham Bill, 1926) which stated in part; "intrastate flying is left to the states. It is hoped that the states will adopt uniform laws and regulations corresponding with the provisions of this bill and rules and regulations that will be promulgated under it." [1]

Aviation Regulatory Bodies

Thirty-four states of the United States have some form of regulatory body with jurisdiction over aviation and air transportation. Seventeen states have aviation or aeronautics commissions. In seventeen other states the public utility or public service commission, departments of public work, motor vehicles, or revenues, or the Secretary of State or Auditor General have jurisdiction over air navigation. Fourteen states have no regulatory or promotional bodies with jurisdiction over air transportation or aviation. In some states the intrastate services and rates of common carrier air transport companies are subject to regulation by the public utility or public service commissions, while the aid and regulation of aviation are entrusted to other administrative organizations.

The state laws regulating the licensing of aircraft and personnel fall into one of several well defined types. In a majority of states Federal licenses are required for all pilots and all aircraft engaged in aviation in the state. In a smaller number of states Federal licenses are required

[1] S. 41, 1926.

of pilots and planes engaged in commercial service. In a few states either Federal or state licenses are required or both Federal and state licenses are required. In only one state the law requires neither state nor Federal licenses.

A summary of these types of state licensing laws is shown below:[2]

TYPES OF LICENSE REGULATION:	NUMBER OF STATES:
1. *Federal licenses required:*	
a.—For all aircraft	33
b.—For all pilots	34
c.—For all commercial aircraft	6
d.—For all commercial pilots	4
e.—For common carriers only	1
2. *Federal or state licenses required:*	
a.—For all aircraft	4
b.—For all commercial aircraft	1
c.—For all pilots	6
3. *Federal and state licenses:*	
a.—For all aircraft	3
b.—For all pilots	2
4. *State licenses required:*	
a.—For all aircraft	3
b.—For all pilots	2
5. No license requirements:	1

Uniformity in State Aeronautical Regulation

The Federal Government, the National Association of State Aviation Officials, the National Conference of Commissioners on Uniform State Laws, and the American Bar Association through its Aviation Committee have contributed greatly to the promotion of uniformity in state aviation regulation. As results of the work of these organizations several drafts of recommended state aviation regulation have been prepared to assist state legislatures and to promote uniformity in aviation regulation among the states. Among these drafts of proposed uniform legislation are the Uniform State Air Licensing Act, for the licensing of aircraft and airmen; the Uniform State Aeronautical Regulatory Act, and the uniform Aeronautical Regulatory Act, both covering the qualifications and licensure of pilots, the construction, design and airworthiness

[2] Compiled from State Aeronautical Legislation Digest and Uniform State Laws, United States Department of Commerce, Bureau of Air Commerce, Aeronautics Bulletin No. 18 (1936), p. 85.

of aircraft, the jurisdiction of state aviation commissions, fees, and enforcement; the Uniform Airports Act, providing for the acquisition, operation and policing of airports.

All bodies interested in state regulation and law, and United States government officials are engaged in the drafting and adoption of a Uniform Aeronautical Code. It is proposed that the reconciliation of the Uniform State Aeronautical Regulatory Act and the Uniform Regulatory Act, mentioned above, shall constitute Part I of the Code. The Uniform Airports Act is recommended as Part II and that a revised draft of the Uniform State Law for Aeronautics constitute Part III of the Code.

One of the most important requisites of state aeronautical legislation is that it supplement but not conflict with Federal regulation. Although minor variations in regulation among the states are not intolerable, major variations are to be deplored. The goal toward which state regulation should be directed is harmony with Federal regulation and substantial uniformity in all states with respect to the following important aspects of air navigation and transportation: The licensing of aircraft and the licensing of pilots and mechanics should be through the acceptance and requirement of Federal licenses of all aircraft and airmen by the state authorities. Air traffic rules and regulations governing the use of airways should be the same as Federal regulations with only such minor variations as are indispensable to meet local needs. Airport enabling legislation and the rules governing the use of airports should be adequate and substantially uniform. Air marking regulations for airways, airports and approaches should be the subjects of comprehensive and uniform legislation in harmony with Federal regulations upon the same subjects. Adequate, comprehensive and uniform state regulation is necessary, governing the liability of air carriers for passengers and goods transported, public liability and property damage risks, employers' liability and workmen's compensation, insurance coverage and bonds to assure compliance with the provisions of the state laws and orders of the regulatory bodies. There is need for state legislation upon aviation gasoline and other taxes. Finally there is need for comprehensive and constructive regulation of the services, rates and fares of air transportation companies engaged in the transportation of persons or property for hire.

Federal Regulation of Air Transportation

The regulation of air transportation by the Federal Government is based primarily upon the Commerce Clause of the Constitution which empowers Congress to regulate commerce among the states, with foreign nations and with the Indian tribes.[3] Although intrastate commerce is subject to the regulations of the states, it is not an invasion of the authority of the states when the Federal Government in regulating interstate commerce so acts as incidentally to regulate state commerce, if interstate and intrastate commerce are inextricably commingled. The power of the Federal Government over Interstate Commerce is supreme and plenary.[4] The Supreme Court has also held that the power of Congress to regulate commerce among the states is not confined to the regulation of instrumentalities which were used in interstate commerce at the time of the adoption of the Federal Constitution but to all instrumentalities used in interstate commerce, several of which are of recent development.[5]

Federal legislation upon air transportation in this country may be traced primarily to the efforts of the aircraft industry, the work of the Committee on the Law of Aeronautics of the American Bar Association and the appointment by Congress of a number of different aircraft investigating committees and boards after the entrance of the United States into the World War. One important bill introduced in Congress, the Civil Aeronautics Bill of 1923, failed to be reported out of Committee. Two of these investigating committees are of special importance, for their reports were the immediate forerunners of the Air Commerce Act of 1926. The Select Committee of Inquiry into the Operations of the United States Air Services, the Lampert-Perkins Committee, was appointed in March, 1924, and the President's Aircraft Committee, of which Dwight P. Morrow was Chairman, was appointed in September 1925, to report upon the best means to be adopted to develop and apply aircraft to national defense. The scope of the inquiries of the Morrow Board was sufficiently broad to enable it to consider all phases of air transportation and to assist Congress in the development of a program of legislation to promote civil air transportation as well as to formulate

[3] U. S. Constitution, Article I, Section 8, Clause 3.
[4] C., M., and St. P. Ry. Co. v. P. U. Commission of Illinois, 242 U.S. 333.
[5] C. and W. C. Ry. Co. v. Varnville Furniture Co., 237 U.S. 597.

a program covering a period of 5 years' development for army and naval aviation.

The Bingham and Parker Bills introduced in the Senate and in the House of Representatives were identical and became law, The Air Commerce Act, on May 20, 1926. The object of the law was so to stabilize civil or commercial aviation as to attract adequate capital into the business and to provide it with the assistance and legal basis necessary to its development. It fixed the relationship of the Federal Government to the development of civil air transportation and provided for aid, encouragement, and regulation.[6]

The Air Commerce Act of 1926

Air commerce was defined in the Act as transportation in whole or in part by aircraft of persons or property for hire, the navigation of aircraft in furtherance of, or for the conduct of, a business.

Interstate or foreign air commerce was defined as air commerce between any state, territory, or possession, or the District of Columbia, and any place outside these limits, or between points within the same state, territory or possession, or the District of Columbia, but through the air space over any place outside thereof; or wholly within the air space over any territory within the United States or possessions or over the District of Columbia.

The Act made it the duty of the Secretary of Commerce to foster air commerce by encouraging the establishment of airports, civil airways, and other air navigation facilities; by making recommendations to the Secretary of Agriculture as to necessary meteorological service; by studying the possibilities for the development of air commerce and the aeronautical industry and trade in the United States and to collect and disseminate information relative to aeronautics; by cooperating with the Bureau of Standards and other agencies in the executive branch of the Government in carrying forward research and development work tending to create improved air navigation facilities.

The Secretary of Commerce was authorized to transfer funds available for carrying out these purposes to any agency for research and development work in cooperation with the Department of Commerce; to investigate and publish the cases of accidents in civil air navigation in the United States; and to exchange information pertaining to civil

[6] Senate Document Public No. 254, 69 Cong., approved May 20, 1926.

air navigation with foreign governments through existing governmental and international channels.

The Department of Commerce was authorized by the Act to provide for the registration of aircraft eligible for registration, if the owners request registration. No aircraft was eligible for registration unless it was a civil aircraft owned by a citizen of the United States, and not registered under the laws of any foreign country, or was a public aircraft.

The Department of Commerce was also authorized to provide for the rating of aircraft as to their airworthiness. As a basis for rating, full particulars of the design and of the calculations upon which the design was based and of the materials and methods used in the construction could be required. The Department was authorized to accept reports of properly qualified persons employed by the manufacturers or owners of aircraft, and reports of the periodic examination of aircraft in service by officers or employees of the Department of Commerce or by properly qualified private persons. Such examinations and reports by such equally qualified persons might be accepted in lieu of examination by the employees of the Department of Commerce. Aircraft could be rerated as to their airworthiness upon the basis of information obtained from time to time.

The Act authorized the Department of Commerce to examine periodically and rate airmen serving in connection with aircraft of the United States as to their qualifications for such service, and to provide for the examination and rating of air navigation facilities available for the use of aircraft as to their suitability for such use. The Department was given authority to establish air traffic rules for the navigation, protection, and identification of aircraft. Rules of this sort include regulations governing the safe altitude of flight and rules for the prevention of collisions between vessels and aircraft.

Regulations are authorized to be made by the Department of Commerce respecting the issuance, suspension, and revocation of the registration certificate of aircraft, and of airmen.

The airways under the jurisdiction and control of the Postmaster-General, together with all emergency landing fields and other air navigation facilities, except airports and terminal landing fields, used in connection with the air mail service were transferred to the jurisdiction and control of the Secretary of Commerce. Airports and terminal landing fields were transferred to the jurisdiction and control of the

municipalities concerned under arrangements subject to approval by the President.

The Secretary of Commerce was authorized to designate and establish civil airways and to establish, operate, and maintain all necessary air navigation facilities, excepting airports, along the airways. The Department of Commerce was authorized to chart airways and arrange for the publication of maps of the airways, utilizing the facilities and assistance of existing agencies of the Government so far as practicable. The Secretary of Commerce was directed not to grant exclusive right for the use of any civil airway, airport, emergency landing field, or other air navigation facility. Air navigation facilities owned or operated by the United States were made available for public use under conditions, and to the extent, deemed advisable by the heads of the government bodies controlling the facilities, at the fair market value prevailing locally.

The Weather Bureau, under the direction of the Secretary of Agriculture was directed to furnish weather reports, forecasts, warnings, and advices required to promote the safety and efficiency of air navigation, particularly upon civil airways, designated by the Secretary of Commerce as routes for air commerce, and to investigate atmospheric phenomena, and establish meteorological offices and stations.

The Secretary of War was granted authority to designate routes as military airways and regulate the use of military aircraft. The Secretary of Commerce was authorized to designate any military airway as a civil airway.

The United States has, to the exclusion of all foreign nations, complete sovereignty of the air space over the lands and waters of the United States, including the Canal Zone. Aircraft of the armed forces of any foreign nation might not be operated in the United States and Canal Zone except with the authorization of the Secretary of State. Foreign aircraft not of armed forces might be navigated in the United States but only if they were authorized by the Secretary of Commerce, who was empowered to grant such authority if the same privilege was accorded by the foreign nation to aircraft of the United States. No foreign aircraft were permitted, however, to engage in interstate or intrastate air commerce in the United States, which was reserved exclusively to domestic planes and ships.

The Secretary of the Treasury was authorized to designate ports of

entry for civil aircraft and for the entry of merchandise carried in aircraft and to use employees of the customs service for this purpose. Regulations of the Treasury Department provided for the application to air navigation of the laws and regulations relating to the administration of the customs and public health laws. The Secretary of Commerce was authorized to provide for the application to civil aircraft of the laws and regulations relating to the entry and clearance of vessels and the Secretary of Labor was authorized to designate any of the ports of entry for civil aircraft as ports of entry for aliens arriving by aircraft and to apply to civil air navigation the laws and regulations relating to the administration of the immigration laws. Penalities of fines and imprisonment were provided for violation of provisions of the Act.

The Act provided for the creation of an Assistant Secretary of Commerce for Aeronautics, to be appointed by the President by and with the advice and consent of the Senate, to aid the Secretary of Commerce in fostering air commerce.

The work of establishing and maintaining aids to air navigation was assigned to the Lighthouse Service, and an Airways Division of that branch of the service was created to attend to the establishment, maintenance, repair and operation facilities and other aids to aerial navigation. The Coast and Geodetic Survey Division was given jurisdiction of the mapping of airways, and a special Aeronautics Division was created in the Bureau of Standards to consolidate research in aeronautics in various government agencies.

The Aeronautic Branch of the Department of Commerce was organized to administer the Act. On July 1, 1934, the Aeronautics Branch was reorganized and became the Bureau of Air Commerce of the Department of Commerce. Under authority conferred by the Act an investigation was instituted by the Aeronautics Branch into suitable regulations to govern the operation of aircraft. A code of regulations was issued which went into effect December 31, 1926. These rules governed the licensing of aircrafts, the requirements as to their operation and the licensing of pilots and mechanics. The rules applied to planes and operators in interstate commerce who voluntarily applied for licenses to the Department of Commerce. Changes were made in these regulations and in the provision of the Act between 1926 and 1938.

General regulations governing the marking of aircraft, air traffic rules and penalities for violations were promulgated to apply to all operators

of licensed and unlicensed craft in intrastate and interstate air transportation and to private noncommercial, as well as to commercial, flying.

In drafting the rules to govern commercial air transportation in the United States the Department of Commerce had the benefit of the code of the International Air Navigation Convention as well as the testimony and drafts of reports of aircraft manufacturers, operators, pilots, engineers, and other individuals and organizations interested in the development of air transportation. The rules had the force of law, but they could be and were changed at the discretion of the Secretary of Commerce as experience demonstrated the need of changes.

Between 1926 and 1938 the Department of Commerce functioned as the Federal regulatory agency promoting and regulating aviation and air commerce within the limits set by the Air Commerce Act of 1926. The Air Mail Act of 1934 gave to the Interstate Commerce Commission the responsibility for regulating the basis of compensation of airlines for the transportation of the mail. This tended to divide regulatory responsibility. There was a growing public sentiment that the Federal regulation of air transportation was deficient because of failure of the Act to provide for the regulation of the services, rates and charges of transport air lines. To remedy these defects new legislation was proposed by the Lea Bill in the House of Representatives and the McCarran Bill in the Senate which were passed by Congress and became the Lea-McCarran Act of 1938.

The Civil Aeronautics Act of 1938

On June 23, 1938, the President approved the Lea-McCarran Act, the Civil Aeronautics Act of 1938. This Act created the present Federal air transport and navigation regulatory body—the Civil Aeronautics Authority. The Authority is composed of five members appointed by the President by and with the advice and consent of the Senate for terms of six years. The President shall annually designate the Chairman. In addition to the Authority, there were created by the same act an Administrator and an Air Safety Board, consisting of three members, whose terms of office are also six years. One of the members of the Safety Board is required by the Act to be at the time of appointment an active airline pilot with a record of not less than 3000 hours of experience in scheduled transportation. The members of the Civil Aeronautics Authority, the Administrator, and the Air Safety Board are required

to devote full time to their duties and to have no financial interest in any civil aeronautics enterprise.

The Authority was empowered to appoint a Secretary, a General Counsel, Bureau Directors, and other personnel. The personnel and property of the Bureau of Air Commerce of the Department of Commerce and of the Bureau of Air Mail of the Interstate Commerce Commission were transferred to the Civil Aeronautics Authority on August 23, 1938. The salary of the members of the Authority and of the Administrator is $12,000 per year, and that of members of the Air Safety Board $7,500.

The Civil Aeronautics Authority is directed by Congress in the statement of policy in the Civil Aeronautics Act to regulate air transportation in the public interest giving consideration specifically to certain objectives. First, the Authority is directed to encourage and develop an air transportation system adapted to the present and future needs of domestic and foreign commerce, the postal service, and national defense. Second, it is directed to regulate air transportation so as to preserve the inherent advantages of air transport, promote the highest degree of safety in the industry, to foster sound economic conditions in it, to improve relations among air transport companies, and to coordinate transportation by air carriers. Third, the Authority is charged with the duty of promoting adequate, economical and efficient transportation service by air carriers at reasonable charges. Unjust discriminations, undue preferences or advantages, and unfair or destructive competitive practices are specifically prohibited. Fourth, the Authority is so to regulate as to preserve competition to the extent necessary to assure the sound development of an air transportation system for commerce, the mail service and national defense. Fifth, the Authority is directed to regulate in such a manner as to promote the development of air commerce and to promote safety. Sixth, the Authority was given general responsibility for the encouragement and development of civil aeronautics.

A specific declaration in the Act recognizes the public right of freedom of any citizen of transit in air commerce through navigable airspace.

The Administrator is charged with responsibility for the designation and establishment of civil airways and airway facilities, the survey of airports and recommendation of Federal participation in the development of a national system of airports, the recommendation to the De-

partment of Agriculture of necessary meteorological services for the safe and efficient movement of air commerce, developmental work in the improvement of air transport facilities, and the collection and dissemination of information pertaining to civil aeronautics.

The regulation of air carriers is one of the most important groups of provisions of the Civil Aeronautics Act. Air lines are required to obtain certificates of public convenience and necessity as prerequisites to operation. Routes may not be abandoned by airlines without express approval of the authority. Air carriers are required to provide adequate facilities for the transportation of mail upon request of the Post Office Department. Foreign air carriers may not engage in transportation without a permit having been issued by the Authority.

All air carriers are required to publish tariffs of rates and charges for transportation of persons or goods and to file the tariffs with the Authority. The tariffs must be observed strictly, and rebating is prohibited. Changes may not be made in the tariffs upon less than thirty days' notice unless specifically permitted by the Authority. The divisions of joint rates and fares to which air carriers are parties must also be filed with the authority.

The Authority has complete jurisdiction over the awarding and termination of air mail contracts for domestic and foreign air mail services, the air mail schedules, maximum mail loads, and compensation for air mail services. Special arrangements for air mail service may be made in emergencies.

Air carriers are required to submit accounts, records and reports to the Authority. True copies of all contracts to which the air carriers are parties must also be filed. Officers and directors of air carriers must submit reports of their holdings of securities of air carriers and in any business related to any phase of aeronautics, or in any common carrier. The air lines must submit the names of persons owning five per cent or more of the capital of the companies.

In regulating the rates of air carriers the Authority is required to take into consideration among other factors: (1) the effect of the rates upon the movement of traffic; (2) the need in the public interest of adequate air transport service at the lowest rates consistent with such service; (3) the standards of air transport service prescribed by law; (4) the inherent advantages of transportation by aircraft; and (5) the need of each air carrier for revenue sufficient to enable such carrier

under honest, economical and efficient management to provide adequate and efficient air carrier service.

The authority has jurisdiction over the consolidating or merger of control of air carriers in connection with other air carriers, other aeronautical business or other carriers. Interlocking directorates and other communities of interest are forbidden except upon express approval of the Authority. Pooling arrangements to which all carriers are parties must be submitted to the Authority for approval; and may be approved by the Authority only if shown not to be adverse to the public interest or in violation of the Civil Aeronautics Act.

Provision is made for inquiry into the management of the business of all air carriers, and for the classification by the Authority of air carriers according to services performed.

The Act provides for the registration of aircraft, the issuance of certificates of nationality of aircraft, the registration of engines, propellers and aircraft appliances, the recording of ownership of aircraft, minimum safety standards, certification of airmen, and aircraft type, production and airworthiness certificates.

The Authority is empowered to issue air carrier operating certificates and to establish minimum safety standards for such operations. Standards of maintenance of equipment, inspection of equipment, the rating of air navigation facilities, and the rating of civilian air schools, repair stations, and other agencies, are among other duties of the Authority.

The Air Safety Board

The duties of the Air Safety Board include the making of regulations governing the notification and report of accidents involving aircraft. These rules and regulations are subject to approval by the Civil Aeronautics Authority. The Board also investigates all aircraft accidents and reports to the Authority the facts concerning the accidents and their probable causes. It makes recommendations to the Authority designated to prevent accidents. Reports and recommendations of the Board are made public. The Board assists the Authority in making studies and investigations pertaining to safety in air navigation and accident prevention.

Cooperation of Other Government Departments

The Secretary of State is directed to advise the Civil Aeronautics Authority with respect to negotiations with foreign governments with

respect to international air commerce. The Chief of the Weather Bureau of the Department of Agriculture is to provide meteorological services and weather reporting and forecasting services, and to cooperate with the air carriers in meteorological services. Certificates or permits authorizing air carriers to engage in overseas or foreign air transportation or between points in territories or possessions must be submitted to the President for approval. Copies of application for such certificates or permits must be submitted to the President before hearings are held and all decisions of the Authority upon such applications must be submitted to the President before publication.

Penalties for Violation of the Act and Procedure.

Fines are provided for the violation of the safety and postal provisions of the Act. Aircraft are subject to lien for the penalty in cases of civil violations. Penalties of fine or imprisonment or both are provided for criminal violations of the law including forgery of certificates, interference with air navigation, rebating, failure to file reports, falsification of records, unlawful divulging of information by Federal employees, refusal to testify in obedience to subpoena or order of the Authority or Board.

The procedure of the Authority prescribed by the Act is substantially similar to that followed by the Interstate Commerce Commission in the regulation of carriers subject to its jurisdiction, including a similar rule of rate making as used by the Interstate Commerce Commission in the determination of railroad and motor carrier rates. The District Courts of the United States have jurisdiction to enforce obedience to the orders of the Authority or to prevent violations of the Act by mandamus or injunction. The orders of the Authority are subject to review by the Circuit Courts of Appeals.

Regulation of Air Navigation Abroad and International Control

European nations almost without exception have laws governing air transportation and aiding air commerce through subsidies. The most important European nations have adopted the International Convention for Air Navigation formulated at the Paris Conference in 1919. The first informal international conference on air navigation was held in Paris in 1889. Subsequent conferences were held at intervals of a few years. Nothing definite was accomplished by those conventions partly

because of the refusal of nations to agree upon the national sovereignty of air spaces above countries. A convention of delegates of sixteen of the Allied Powers was called by the Premier of France in 1919 to draw up an international code for air transportation. A commission was appointed consisting of two delegates each of the United States, Great Britain, France, Italy, and Japan and one delegate each of Belgium, Portugal, Greece, Roumania, Servia, Brazil, and Cuba. This commission became the Aeronautical Commission which was the adviser regarding aeronautic matters to the Supreme Council of the Peace Conference at Versailles.

The International Convention for Air Navigation drafted by this body provides that the high contracting parties recognize that every power has complete and exclusive sovereignty over the air space over its territory including the territory of the mother country, and of its colonies and the territorial waters adjacent to the country or its colonies (Article I). The right of innocent passage in times of peace over the national air space except prohibited areas is granted by each of the contracting states to the aircraft of the other states subscribing to the convention.

The Convention defines the nationality of aircraft and provides for the international registry of craft licensed under national laws and requires the display of identification insignia on the craft. Aircraft crews and wireless certificates are required to be validated by each nation and certificates of airworthiness of the craft and competency of the crews are required of all crews and craft operated in international flights. Standard medical requirements for flyers are recognized as being desirable and necessary.

The right is reserved by each contracting nation to establish reservations and restrictions in favor of its own national aircraft in connection with the carriage of passengers or goods for hire between points within its own territory (Article 16).

International airways may be established subject to the consent of the nations over which the routes lie. Non-stop flights may be made over or through the territory of any contracting nation along certain designated routes without the possibility of the detention of the craft en route. Provisions are made for the landing and departure of craft of one nation in the territories of other contracting states. Every craft internationally registered is required to be provided when under way

with a certificate of registry, a certificate of airworthiness, a log book, and a list of cargo and passengers carried.

Each state over which flights are made has jurisdiction with regard to breaches of its laws for the public safety, its military and its fiscal laws. Equal facilities are to be given to all craft in the use of airdromes and assistance in distress.

Aircraft are forbidden to carry arms, munitions, or explosives in international commerce. The use of photographic apparatus carried by the craft of one contracting nation over the territories of other contracting countries is regulated and military aircraft are forbidden to fly over the territories of other nations.

The United States has not ratified the International Convention on Air Navigation. The Convention was connected with the League of Nations and decisions of the Commission are communicated to the League of Nations. The refusal of the United States to enter the League has served as a barrier to the ratification of the Convention, although it is possible to adhere to these regulations without joining the League just as the United States has adhered to the Permanent Court of International Justice, which also has some connection with the League of Nations.

Since the United States did not adopt this code, separate treaties must be entered into with all nations over the boundaries of which fliers of the United States navigate or over which air line services are conducted. Special permission must now be obtained for each flight over foreign soil or territorial waters, for American aviators have no right to fly over the boundary lines of other nations. Permission of this sort had to be obtained by the State Department from each nation when the Round-the-World Flyers made their voyage of 20,000 miles in 1924 and per-

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"Airlines of the World" on the facing page is not the most recent map of trans-oceanic air routes to be obtained, but the authors found it to be the clearest for reproduction. The most important additional trans-oceanic routes are the trans-Atlantic air route and the route from Hawaii to New Zealand. However, if the reader wishes to trace these air routes, they are as follows:

1. The trans-Atlantic route connects the United States with western Europe via Bermuda, the Azores, and Lisbon, Portugal.

2. The air route in the south Pacific starts at the Hawaiian Islands, goes by way of Kingman Reef and Pago Pago in the Samoan Islands, and ends at Auckland, New Zealand.

The misspelling of the name of the city of Amarillo, Texas, in the original map should also be noted.

mission has had to be obtained separately for each overseas flight since that time. Flyers of the United States are put at a disadvantage also if, after permission is granted to fly over foreign nations, damage results from accidents to persons or property in the nations granting the permits. They are not given the benefit of special international consideration enjoyed by aviators under the protection of the International Aeronautical Agreement.

The operators of air transportation services of the nations signatory of the agreement are given greater freedom of action. Boundary lines are in a measure obliterated and the international operations are given legal standing. As international air services are developed further by American air transportation companies the failure of the United States to become a member of this Convention will prove a burden of importance.

There are two other international air conventions of importance. One of these is the Ibero-American Convention of 1926 participated in by Spain and the Latin American countries, except Haiti. This Convention was adopted at Madrid in 1926. The Pan-American, or Habana, Convention was drafted at Habana in 1928 at the Sixth Pan-American Conference, and adopted with minor variations by the twenty nations, members of the Pan-American Union.

The Ibero-American and the Habana Convention differ only slightly from the Paris Convention. It is unfortunate that so far efforts to bring all nations into one international air convention have failed due to differences of opinion with respect to relative representation and voting strength. There is little difference of opinion upon subjects of major importance concerning the subject matter of regulation.

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PART IV

PIPE LINE TRANSPORTATION

CHAPTER 26

Petroleum Pipe Line Transportation

There are more than 115,000 miles of pipe lines in the United States, built to move petroleum from oil wells to concentration centers, to transport crude oil from oil fields to ports or refining centers; or to transport refined petroleum produced from the refineries to distribution or reshipment points throughout the United States. Pipe lines are sometimes owned and operated by oil companies to transport only the crude or refined petroleum products of the industries which own and operate them. Other pipe lines are engaged in common carrier services in interstate or intrastate commerce.

Types of Pipe Lines

Pipe lines may be divided first into gathering lines, and trunk lines. Gathering lines are pipe lines used to bring the crude petroleum from wells or from well storage tanks to tank farm concentration or storage points. Here the oil is taken from the gathering lines and held before being placed in the trunk pipe lines for transportation to ports or refineries. At the first of the year 1939 there were approximately 40,000 miles of gathering lines engaged in interstate common carrier services subject to the jurisdiction of the Interstate Commerce Commission, in addition to about 12,000 miles of gathering lines privately operated or engaged in intrastate commerce. Many of the gathering lines are constructed so that they can be taken up and relaid in new locations if the field becomes exhausted.

Trunk pipe lines are those 8 inches or over in diameter, used to transport crude oil from the concentration centers to which the oil is transported by the gathering lines to ports where the oil is transshipped by water, or to refining centers, or to junction points where storage tanks are located. Here the oil is run into tanks to be subsequently transported by other trunk pipe lines to destination.

Trunk pipe lines are also used to transport refined petroleum products to interior take-off or distribution points, or to transshipping points

where the products are loaded into tank steamers or barges, or into railroad tank cars for rail movement to destination. About 54,460 miles of a total trunk line mileage of 62,278 miles are operated by interstate pipe line carriers.

Pipe lines may also be classified into those which operate between points in the same state and are engaged exclusively in intrastate commerce, and those which operate across state boundary lines in interstate commerce. The trunk lines and gathering lines are engaged in interstate common carrier services, and when transporting crude or refined petroleum for others than the refining or producing industries which own and operate the pipe lines, are subject to the jurisdiction of the Interstate Commerce Commission.

The Interstate Commerce Act as amended by the Hepburn Act of 1906, applies to any corporation or person, engaged in the transportation of oil or any commodity, excepting water and except natural or artificial gas, who is considered and held out to be a common carrier by means of pipe line or partly by pipe line and partly by pipe line and partly by railroad, or partly by pipe line and partly by water from one state, territory or the District of Columbia to another state, territory, or the District of Columbia or to any foreign country.[1]

Location of Pipe Lines

Pipe lines for the transportation of crude petroleum extend from the Mid-Continent and Gulf Coast Districts to the Gulf ports, or to the refining centers or pipe line junction points in the Upper Mississippi Valley. Another group of pipe lines extend across the Eastern-Central states from these junctions and from the Appalachian, Lima-Indiana, and Illinois fields to the refineries and ports along the Atlantic seaboard. A third group of pipe lines extend from the fields of the California District to the refineries and ports on the Pacific Seaboard. Another group of pipe lines connects the scattered fields in the Rocky Mountain District with nearby refineries. The gasoline pipe lines fall into two groups: one group extending from the refineries in the Mid-Continent field to the centers of consumption or reshipment centers on the Great Lakes or Upper Mississippi Valley; and a second group extending from the Atlantic Seaboard refining centers to consuming and distribution points in the Mid-West.

[1] Interstate Commerce Act, Part I, Section 1 (1).

Centers of Petroleum Production

Three states of the United States;—Texas, California and Oklahoma, produce nearly 80% of the crude oil extracted in the United States. The most important producing districts are: (1) The Mid-Continent District which produces about 65% of the total; (2) the California District, about 18%; (3) the Gulf Coast District, about 9%; (4) the Appalachian District, a little over 3%; (5) the Rocky Mountain District, nearly 2%; (6) the Lima-Indiana District, a little over 1%; and (7) the Illinois-Indiana District, about ½ of 1%.

Petroleum Refining Centers

The principal refining centers of the United States, those having a daily refining capacity of 100,000 barrels or over are located at: (1) the Baton Rouge, Louisiana, District; (2) the Chicago, Illinois, Port District; (3) the Houston, Texas, Port District; (4) the Los Angeles, California, Basin District; (5) the New York, Newark Bay, New Jersey, District; (6) the Philadelphia, Pennsylvania, Port District; (7) the Port Arthur-Beaumont—Texas City, Texas District; and (8) the San Francisco, California, Bay District.

Minor refining centers with a daily capacity of between 10,000 and 100,000 barrels per day are located in more than 50 other cities and towns in the United States.

Pipe Line Construction

In constructing pipe lines, the terrain to be traversed must first be surveyed, after the terminal points have been located. The routes must then be selected with reference to the location of rivers, mountains, highways, railroads, and other obstacles to be overcome. Tank farms, pumping stations, and other facilities must be located. Rights of way must then be acquired by purchase, lease, or acquisition of easement, either by voluntary sale, or by condemnation proceedings, if the pipe lines are common carriers and are endowed with the power of eminent domain.

The route must next be cleared of trees and brush. The trenches must then be dug and bridges must be constructed across waterways and underpasses must be built under railroads and highways. The stringing gangs next distribute the pipe in sections along the route, and the pipe

laying gangs place the pipe in position and connect it. Ditching gangs follow this operation and cover the pipe line. As a rule, the pipes are laid below plow-depth in order to avoid the danger of disturbing the lines in plowing.

After the tank storage facilities are constructed at the terminals and take-off points, and the pumping stations are built at the terminals and at intervals along the routes in order to maintain pressure in the lines, the pipe lines are ready to be filled with oil, and operated. Approximately 30,000 barrels of oil can be transported through an 8 inch diameter trunk pipe line in 24 hours. The pumps are designed, as a rule, to operate at 700 to 900 pounds pressure per square inch, and the pipe will withstand internal pressure up to 2000 pounds per square inch. The oil moves through the pipe lines at a speed of one to five miles per hour depending upon the need for the oil. In times when extra storage capacity is needed, the petroleum may be allowed to remain in the pipe lines without being moved. When needed deliveries may be commenced at once.

Common Carrier Status of Pipe Lines

Petroleum pipe lines are regulated as common carriers if they hold themselves out to transport for the public for hire. They are regulated by the Federal Government, if they are engaged in interstate commerce, and by many of the state governments if they are engaged in intrastate commerce.

The status of interstate petroleum pipe lines as common carriers was first determined by the Interstate Commerce Commission in 1912 in the so-called Pipe Line Cases.[2] In these cases, the Interstate Commerce Commission construed the Hepburn Amendment to the Interstate Commerce Act of 1906 as having the effect of placing all pipe line companies transporting petroleum under the jurisdiction of the Interstate Commerce Commission even the pipe lines which required producers to sell their oil to the pipe lines or refining companies controlling the pipe lines before it was transported, and the pipe lines owned and operated by separate corporations in each state through which they operated. The Commission ordered all interstate petroleum pipe lines to file tariffs of rates and charges as required by the Interstate Commerce Act.[3]

[2] In the Matter of Pipe Lines, 24 I.C.C. 1, 1912.
[3] Interstate Commerce Act, Section 6.

The decision of the Interstate Commerce Commission was attacked in the Federal Courts, and the United States Supreme Court held that the Interstate Commerce Act as amended by the Hepburn Act applied to all interstate petroleum pipe lines; that these companies were in substance common carriers, despite the fact that they required the petroleum to be sold to them by independent oil producers prior to the transportation of the oil; and that the creation of separate state corporations did not divest the transportation service of its real interstate character.[4]

A pipe line which was used solely to transport oil from wells owned by the same company to the company's refinery in another state was a plant facility and not subject to the amended Interstate Commerce Act.[5] The Transportation Act, 1920, further amended the provisions of the Interstate Commerce Act, by interpreting the term common carrier to include all petroleum pipe lines by eliminating reference to pipe lines "which shall be considered and held to be common carriers within the meaning of the Act." As the law now stands the provisions of the Interstate Commerce Act apply to "common carriers engaged in . . . the transportation of oil or other commodity, except water and except natural or artificial gas, by pipe lines; or partly by pipe line and partly by railroad or by water.[6]

The status of petroleum pipe lines as common carriers holding out to serve the public for hire in a number of states is defined by state statutes.

Interstate and Intrastate Pipe Line Transportation

Whether pipe lines are interstate or intrastate in character is sometimes a close question. The United States Supreme Court has held that the transportation of petroleum by tank steamers of the selling company from ports in one state to ports in another is interstate commerce, but that the movement of the oil from these ports to various bulk distribution stations of the buying company after delivery at the ports from the tank steamers to the storage tanks of the buyer could not be considered interstate commerce, despite the fact that there was a continual supply of petroleum moving from the ports to the destinations within the same state. The Supreme Court held that there was a bona fide interruption

[4] Pipe Lines Cases, 234 U.S. 548, 1914.
[5] United States v. Uncle Sam Oil Co., 234 U.S. 548, 1914.
[6] Interstate Commerce Act, Section 1 (1), (b).

of the movement of the petroleum at the ports when the oil was discharged from the steamers to the storage tanks, so that the subsequent movements from the ports to the interior points were intrastate movements to which the intrastate transportation rates should be applied.[7]

Publication of Rates and Tariffs

Petroleum pipe lines engaged in common carrier services are required to publish, post and file either with the Interstate Commerce Commission or with the respective state regulatory commissions tariffs of their rates and charges. The great majority of pipe lines serve only a few points of origin and a limited number of destinations. Hence, the tables of pipe line rates contained in typical tariffs are relatively simple tabulations. Gathering line charges may be published either in separate tariffs, or, as is often the case, in the same tariffs with trunk line rates. Charges are also published for special and terminal services such as storage, demurrage, loading or pumping into tank cars or vessels, transfer, or blending-in-transit. Rates are published upon the basis of the unit of the U. S. standard barrel at 60° temperature, Fahrenheit. Only merchantable oil of ascertained grade is accepted for transportation unless special arrangements are made. The pipe lines agree to deliver at destination a similar quantity of like grade of oil as received from the shipper, subject to shrinkage or evaporation of 1 per cent of the quantity tendered for transportation. The minimum quantity of oil received for transportation, usually from several thousand barrels or more, is fixed by the minimum tender requirements of the pipe line carriers' tariffs. The movements of the crude or refined oils are covered by pipage contracts which fix the liability of the carriers for the safe transportation of the oil and the requirements governing the rights and duties of shippers and carriers. Pipage contracts in pipe line transportation correspond to bill of lading contracts used in railroad, water, highway, express and air transportation.

The overwhelming majority of pipe line tariffs are individual publications, compiled and published by the traffic departments of the pipe line companies. The tariffs in some cases are local tariffs publishing rates and charges between points on the lines of the respective pipe lines issuing the tariffs. In some cases, the tariffs name joint rates applicable via the lines of connecting pipe line carriers.

[7] Atlantic Coast Line R. Co. v. Standard Oil Co. of Ky., 275 U.S. 257, 1927.

The Cost of Operation of Pipe Lines

The cost of transporting crude petroleum by pipe line considering all of the interstate crude petroleum lines was found in a study made for the Federal Coordinator of Transportation to be between 2.2 mills per ton-mile and about 4.3 mills per ton-mile. Great variations were found in the costs of individual crude oil pipe lines due to differences among the companies with respect to: topography, types of crude oil transported, efficiency of pumping equipment, sizes and types of pipe, volume of traffic and load-factor—the ratio between the capacity of the line and the volume of traffic actually transported; corporate policy with respect to charging off depreciation of the pipe lines; and differences in policy with respect to the treatment of tax accruals.

The average costs of transporting refined petroleum products, including gasoline, fuel oil and kerosene, were found by the same study to be about 5.5 mills per ton-mile, with great variations in the costs among individual companies due to the same causes as those concerning the crude oil pipe line companies.

The relatively low costs of transportation of crude and refined petroleum by pipe line are due to a number of factors.

The movement is or maybe continuous. Pipe line operation is to a large degree automatic, requiring little labor. Maintenance costs are usually low per unit of oil transported. Pipe lines are free from the problems of two-direction traffic. Traffic is usually handled in large units. There are no problems of moving different types of traffic at different speeds, since the oil is moved as a mass at uniform speed through the pipes. There is no empty equipment movement. The pipe lines may be used for storage in times of dull business, thus reducing the costs of providing storage facilities. Leakage and fire losses have been reduced by improvements in pipe, and by improvements of patrolling technique. Generally speaking, the costs of transporting crude and refined petroleum were found by the studies of the Section of Transportation Service of the Federal Coordinator of Transportation to be generally lower by pipe line than by railroad. The costs were found also to be lower by water carriers—tank steamers—than by pipe line.

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CHAPTER 27

Pipe Line Transportation of Natural Gas

Approximately 179,000 miles of natural gas main and distribution pipe lines connect the major centers of production of natural gas and the consuming centers where it is used for domestic or industrial purposes. Some of these lines are over 1,000 miles in length and connect producing areas in the mid-Continent field with consuming markets in the Middle West and Middle Atlantic States. At the points of production the main gas pipe lines are connected with producing wells and at the consuming centers they are connected with the distribution lines leading to residences or industrial establishments which use this natural fuel.

The principal natural gas producing areas include the Appalachian fields; the Mid-Continent fields; the Rocky Mountain fields; and the Pacific Coast fields.

The natural gas lines transport over a billion M.C.F. (thousand cubic feet) or over a trillion cubic feet of gas to consumers located in 33 states. In 1938, the sales of natural gas aggregated 1,213,352,000 M.C.F. to a monthly average of 7,231,000 customers. It is estimated that natural gas serves over 33,000,000 persons or about one-fourth of the population of the United States. The revenue from the sale of natural gas at points of consumption was valued in 1936 at $416,580,000, an average of 22 cents per thousand cubic feet. (M.C.F.).[1]

There has been little expansion of natural gas pipe lines into new consuming markets in recent years principally because of the apprehension of extreme regulation. There are, however, sections of the United States which appear to be close to development as very large natural gas markets. In many cases the natural gas pipe lines have been constructed into or close to large consuming markets but connections have not been made with local distribution facilities. The most im-

[1] Minerals Year Book, 75th Congress, 2nd Session, House Document No. 411 (1938), pp. 910-911; and Annual Statistics of the Natural Gas Industry, Statistical Bulletin No. 37, American Gas Association, New York (1939).

portant potential markets appear to be the industrial cities of North and South Carolina; the cities in the East North Central States of Illinois, Wisconsin, Indiana, Michigan, and Ohio; the Middle Atlantic States cities in New York, Pennsylvania and New Jersey; and the cities in all the New England states.

The Uses of Natural Gas

Natural gas is used in domestic, commercial, industrial and miscellaneous services. The domestic services include residential, apartment house and hotel heating and cooking. The commercial uses include heating, cooking and other services in restaurants and other commercial establishments. Industrial services include the use of natural gas for heating in factories and other industries, the conversion into gasoline, the toughening of rubber, the manufacture of carbon black, and the generation of electrical energy.

Although the largest group of consumers is the domestic group, the largest amount of natural gas is consumed by industrial consumers including those who use natural gas for electrical generation.

The relatively smaller revenue from industrial than from domestic consumers is due to the relatively lower unit rates at which gas is sold to industries which use very large quantities of natural gas.

Transportation of Natural Gas

The transportation of natural gas is related directly to and is a part of the production, distribution and consumption of this fuel. Pipe lines connect the gas wells, with the smaller local lines which distribute the gas to the homes or places of business of consumers. The expansion of the natural gas in the wells causes it to rise to the surface and to force its way into the gathering lines which have been constructed to carry the gas from the wells to the main trunk pipe lines.

The pipe line companies must obtain rights of way from the owners of the land over which the lines are to be constructed. Preliminary surveys of the proposed routes are made by means of inspection from the land or by airplane. Agents of the pipe line make agreements with the land owners for permission to construct the pipe lines. Natural gas pipe line transportation companies are classed in many states by statute as public utilities and as such are endowed with the right of eminent domain, giving them the power to acquire privately owned land for

public utility service upon condemnation of the land at fair compensation to be determined in court proceedings. In other states they do not have this status nor do they have the power of eminent domain.

The pipe line rights of way are cleared and the sections of the pipe are laid along the ground. Trenches for the pipes are then dug, usually with trenching machines. The pipes are coupled or welded together, with due allowance for expansion and contraction from heat and cold. The pipes are coated and painted to protect them against corrosion. They are placed in the trenches, and the trenches are refilled. Compressor stations are located at intervals along the lines to maintain adequate pressure, usually from approximately 100 pounds per square inch to from 350 to 600 pounds per square inch. The pressure is reduced when the gas reaches the distribution lines in the communities where the gas is to be distributed. A pressure of about 20 pounds per square inch is used in industrial distribution and a very low pressure, sometimes only a few ounces per square inch, is used in the domestic distribution of natural gas.

The cost of transporting natural gas tends to limit the distance the gas can be transported economically. Improvements in trenching and in pipe construction and welding, have greatly facilitated long-distance natural gas transportation in recent years. Lines exceeding 100 miles in length were rare until recent years, but at the present time there are a number of lines exceeding 500 miles in length, and several approximately 1000 miles in length.

The cost of pipe line construction and operation vary greatly with the length of the lines due to varying costs of surveys, right of way acquisition, clearing the rights of way, trenching, transporting the pipe, laying the pipe, filling the trenches, the construction of compressor and booster stations, and the construction of telephone communication systems which are indispensable to natural gas pipe line operation. These costs vary with the character of the terrain over which the line is laid, the character of the vegetation, the value of the land, the types of soil; the type, diameter and weight of pipe laid; the distance of the sites from the pipe mills and from the points to which the pipe is transported in large lots for transportation by trucks to the sites; and other variable factors.

Maintenance costs include the wages paid the inspectors who patrol the lines daily seeking to discover leaks, washouts or other conditions detrimental to the efficient operation of the line. Telephone lines paral-

lel the gas lines, and shelters are provided for use of the inspectors along the lines. Leaks and other pipe line trouble are reported by telephone by the inspectors, and the companies' maintenance forces are dispatched to the scene of the trouble to make the necessary repairs. The maintenance expenses of the pipe lines and of the telephone lines are important items in the cost of natural gas transportation. One company estimates that the cost of inspection and maintenance amounts to $750,000 per year. Maintenance costs are often insured against greater losses due to leaks in the lines. Each pipe leak costs $115 per day in the value of the gas lost, so that this company estimated its savings at $1,250,000 per year, against inspection and maintenance costs of $750,000.

The large investment in pipe line construction and the heavy maintenance expenses cause natural gas pipe lines to be very vulnerable to changes in the demand for gas. Slight reductions in industrial and domestic demand are reflected acutely in pipe line net earnings. Changes in industrial location or the exhaustion of wells are apt to render almost useless large investments in pipe lines. On the other hand increased demand, and new producing wells tend to reduce rapidly the units cost of transportation by pipe lines, provided markets can be found for the gas.

Natural Gas Rates

Unlike the transportation of petroleum by pipe line where the pipe lines derive their revenues from rates charged the owners of the petroleum, natural gas pipe lines derive their revenues from the sale of the natural gas to consumers or to distribution companies. The pipe line companies in some cases own producing wells but in other instances the gas is purchased at the wells from the producers. After transportation to destination it is sold to local distributing companies or communities or distributed by the pipe line company directly or through subsidiary companies.

Several bases of rates are used in selling natural gas to consumers: (1) the flat rate per month or per fixture or outlet regardless of the amount of fuel consumed; (2) the straight line meter rate basis, a uniform amount per M.C.F.; (3) the straight line meter rate with a minimum monthly charge; (4) the step rate basis where the rate per M.C.F. for the entire quantity of gas consumed decreases per unit as the amount of gas consumed increases; (5) the block rate basis where

the rate for each successive block or increment of gas used is paid for at the rate fixed for that quantity with the rate decreasing per M.C.F. as the quantity consumed increases, so that the total charge is made up by computing the number of M.C.F. consumed at each block rate; (6) the block rate with minimum charge per month; (7) and the so-called part rates which are made up of separate charges for service, demand, and amount of gas consumed.

Regardless of the basis of rates used several factors should be included in natural gas rates. A service charge or factor is needed to cover the costs of meter reading, inspection, accounting, billing and collection. An installation charge or factor is needed to cover the costs of bringing the service to consumers and of making necessary connections. A third charge or factor is the demand charge to cover the maximum demands of consumers independent of the total quantity of gas consumed in any small period of time. Finally, a commodity charge or factor is needed in order to cover the production, transportation and distribution of the gas actually consumed.

Natural Gas and Other Fuels

The use and development of natural gas as domestic and commercial fuel and as an industrial fuel and raw material has created problems of adjustment with the manufactured gas and solid fuel industries. If natural gas is sought to be introduced directly into communities in competition with manufactured gas, franchise arrangements must be made. In some cases manufactured and natural gas are mixed and distributed to consumers by the local gas utilities. Financial arrangements must also be worked out between manufactured and natural gas utilities in serving many communities.

Another problem is the competition between the pipe lines transporting natural gas and the mining companies producing and the railroads transporting coal to be used as fuels.

Natural gas when used as a domestic fuel competes also with oil, and competitive problems are set up between the natural gas and petroleum producers and pipe line companies.

The Regulation of Natural Gas Transportation

Natural gas pipe lines are not subject to direct Federal regulation. The Interstate Commerce Act provides specifically that the act does not

apply to the transportation of either natural gas or water by pipe line. Natural gas pipe lines engaged in the interstate transportation of natural gas are not included within the provisions of the Act and are not subject to the administrative jurisdiction of the Interstate Commerce Commission.

The Federal Government does exercise, however, some degree of control over the natural gas business. These regulations are concerned mostly with the production of gas, land leases and drilling operations.

The states of the United States exercise a considerable degree of control over the production, transportation and distribution of natural gas. The state laws vary considerably, but include generally the control of drilling, the spacing of wells, the prohibition of wastage and escape of natural gas, the regulation of production to curb over production, the regulation of unit or cooperative developments or agreements, the regulation of services and rates of companies engaged in distributing natural gas to consumers, and the regulation of the acceptance and transportation of natural gas by natural gas pipe line companies.

The importance of natural gas as a domestic, commercial and industrial fuel and raw material is so great that in the public interest as well as in the interests of those engaged in its production, transportation and consumption, comprehensive and constructive state and Federal regulation and cooperation among the companies are necessary to insure adequate standards of service, fair rates, the proper relationships among the companies, and the conservation of this valuable natural resource.

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PART V

WATER TRANSPORTATION

CHAPTER 28

The Place of the Water Carrier in the Transportation System

THE PLACE OF OCEAN CARRIERS IN THE TRANSPORTATION SYSTEM

Transportation by water in the United States may be subdivided into ocean, coastwise, intercoastal, Great Lakes and inland waterway transportation. Ocean carriers, during the past decade, have carried annually from less than fifty-four to over one hundred and thirteen million long tons (2240 lbs.) of cargo between the United States and the foreign countries in which trade is conducted by American exporters and importers. They serve all of the major ocean ports on each of the seaboards --North Atlantic, South Atlantic, Gulf and Pacific Coast. They carry not only bulk traffic, but a wide range of general cargo, for the commodities exported and imported include an amazing variety of finished and semi-finished manufactures, industrial raw and semi-raw materials, and crude and prepared foodstuffs. They have also transported from 1,200,000 to over 2,000,000 passengers annually, and, they provide the transportation services essential to the international mail service.

The European trades in which ocean services are offered are generally grouped as follows: (1) United Kingdom and Irish ports; (2) Continental ports including the Atlantic ports of Portugal, Spain, France, Belgium, Holland, Denmark and Germany; (3) Mediterranean ports of Europe and North Africa, including the ports of Italy, the Mediterranean ports of Spain and France, various Mediterranean island ports and North Coast African ports; (4) Adriatic, Black Sea and Levant ports; and (5) Scandinavian and Baltic ports. But there is much overlapping of ocean services in the European area as a whole. Many vessels, for example, serve both British and Continental Channel ports; not all Swedish Norwegian ports are always affiliated with the Baltic area, a dividing line at Stockholm being recognized in some conference agreements; German Baltic ports are at times included with other German ports; Adriatic, Black Sea and Levant ports are sometimes considered as within the Mediterranean trade area. The volume of trade between

the Pacific Coast ports of the United States and Europe as a whole, moreover, is so much lighter than that of the eastern seaboards that the operation of separate services to each of these European trade areas is less common. There are relatively more instances of services from the Pacific seaboard to base ports for transshipment to other European ports.

The principal overseas trades in other foreign areas are quite commonly grouped as follows: (6) The Far East, including the ports of Japan, Korea, Formosa, Siberia, Manchuria, China, Hong Kong, Indo-China and the Philippines, the Chinese mainland, however, being subdivided into North and South China in some conference agreements with a dividing line at Shanghai, Foochow or elsewhere; (7) India and the Persian Gulf; (8) the Dutch East Indies, Straits Settlements, Siam and Malay States; (9) Australasia, including the ports of Australia, New Zealand and the South Sea Islands; (10) West African ports and adjacent islands; (11) East and South African ports and adjacent islands; (12) East Coast South American ports; (13) West Coast South American ports; (14) the Caribbean and Gulf ports of the West Indies, Central America, Mexico, Canal Zone and the North Coast countries of South America; (15) Pacific ports of Central America, Canal Zone and Mexico; (16) The Provinces, Newfoundland and Miquelon, and (17) British Columbia ports. The last named is primarily important in the trade of the Pacific Coast ports of the United States, especially those of Puget Sound. Regular sailings to The Provinces, Newfoundland and Miquelon are scheduled only from certain North Atlantic and Eastern Canadian ports.

Ocean carriers operating in international commerce obtain their cargo partly within the port areas served by them and partly from inland communities scattered throughout the entire nation. Their inland export traffic is transported to the ocean ports mainly by the railroads, but substantial quantities are also carried by highway carriers and over all-water or rail and water routes served by coastwise, inland waterway and Great Lakes carriers. Some of the mineral oil transported to the seaboards by pipe lines is eventually exported in ocean vessels and a small volume of export and passenger traffic comes to the ports via air transportation. Much of their import traffic is similarly delivered at interior markets by domestic inland and coastwise carriers.

In the overseas trades ocean and domestic carriers are complementary.

The interchange of ocean freight between rail and ocean carriers in foreign trade is coordinated in part by means of through bills of lading; foreign freight traffic departments maintained by railroads; railroad-owned wharf, grain elevator, warehouse, coal terminal and freight handling facilities; agreements between rail and ocean carriers; switching, lighterage and trucking arrangements; special storage and demurrage rules, and in other ways. Joint rail-ocean rates are not in effect, but much export and import traffic moves from and to the interior on special railroad export and import rates. Although direct ownership or financial control of ocean carriers by American railroads is at present relatively unimportant and full coordination has not been obtained, workable arrangements for traffic interchange have been effected either directly or through agencies such as ocean freight forwarders, direct port representatives of inland exporters, trucking companies and terminal belt lines. Interchange of export and import traffic between ocean and other types of domestic water carriers have likewise been coordinated only in part, but workable arrangements and facilities for the transshipment of ocean freight between ocean, coastwise, Great Lakes and inland waterway carriers have been established, and the interchange of freight with highway carriers at ocean piers or wharves is relatively simple because of the free use of connecting streets by motor trucks.

As general principles governing foreign trade do not function automatically, adequate ocean shipping and inland transportation services are imperative. Because of the competitive character of much of this trade, ocean shipping services are not adequate unless they are at least on a par with those available to rival foreign trading countries. Their concentration at only a few major ports, moreover, would handicap the many export industries which are located within areas adjacent to some of the smaller ocean ports and at the numerous inland points which are affiliated with them geographically and by means of favorable inland transportation costs.

Ocean shipping in order to serve and promote international commerce fully must also be performed at freight rates which are both reasonable in themselves and reasonably comparable with the rates currently in effect to competitive foreign markets from rival exporting nations. Ocean freight rates are a cost factor in foreign trade. They influence delivery costs either by being included in the export price or by constituting a cost which the importer is required to pay in addition to

this price; or they affect the profits and costs of the exporter in case he engages in the practice of dumping exports abroad and decides to absorb ocean freight costs either wholly or in part.

THE PLACE OF COASTWISE CARRIERS IN THE TRANSPORTATION SYSTEM

About 150,000,000 short tons (2000 lbs.) of domestic traffic moves coastwise between the ocean ports of the United States during the course of a year. This total includes the intercoastal traffic moving between the eastern and western seaboards as well as coastwise shipments between ports on the same or neighboring seaboard.

Intercoastal traffic, which amounted to 6,395,000 long tons in 1938, has fluctuated widely throughout the period of Panama Canal operation. Over 70 per cent of it usually moves from the Pacific to the Atlantic and Gulf seaboards, and, of this eastbound traffic, petroleum and petroleum products (which have declined since 1927) and lumber products are of outstanding importance. But eastbound vessels also carry large quantities of canned goods, paper and pulp, dried fruits, metals, wool, chemicals, hides and skins, flour, sugar, and miscellaneous general cargo. The principal westbound items are iron and steel products, chemicals, paper, mineral oils, sulphur, canned goods, automobiles, tin plate, coal, machinery, metals, tobacco, soda, glassware, textiles and a wide range of other types of general cargo.

Coastwise shipping as defined by law also includes that of the carriers operating in the trade of the United States with Puerto Rico, Alaska and the Hawaiian Islands. Aside from the fact that this trade is legally coastwise and foreign vessels are therefore excluded, the carriers operate much as ocean carriers engaged in foreign-trade shipping do. Geographical location protects them from railroad competition and traffic is interchanged with railroads and other carriers serving the mainland.

Coastwise passenger and general cargo lines plying between the larger Atlantic and Gulf ports, and between the larger ports of the Pacific seaboard, carry both general cargo and bulk commodities. Bulk cargo, however, is the principal traffic on each of the seaboards. On the Atlantic and Gulf Coasts coal, lumber, shingles, railroad ties and other timber products, sand, stone and gravel, ashes, and crude oil are shipped in large quantities. Other commodities of importance include iron and steel

products, petroleum products, sugar, canned goods, phosphate rock, textiles, cotton, naval stores, metals, chemicals, sulphur, copper, rice, automobiles and machinery. The principal coastwise shipments along the Pacific seaboard are timber, lumber and lumber products, canned goods, grain and flour, iron and steel products, automobiles, machinery, sugar, cement, salt, copper, fertilizers, sand and gravel, coal, ores and concentrates.

In addition to this coastwise trade which moves between the ports of the seaboards, a large volume of local or intra-port traffic moves within the confines of port areas and between separate channels or areas of certain large ocean ports.

Aside from harbor, ferry and excursion traffic the coastwise passenger business is small in comparison with rail and highway passenger traffic. Some of the lines operating in the intercoastal trade, in the coastwise trade with non-contiguous territories and along the mainland seaboards, however, are regularly engaged in conducting a long or short distance passenger business.[1]

Coastwise transportation (aside from shipping to and from outlying territories) differs from trans-ocean shipping in that it is both competitive and complementary to railroad and other forms of inland transportation. The intercoastal carriers compete actively with the transcontinental railroads. Their traffic represents not only new business created by them, but traffic which formerly moved by rail. Some of the traffic carried along the Atlantic, Gulf and Pacific seaboards, likewise, is competitive, but the cost advantage of coastwise carriers in transporting certain bulk cargoes is so decisive that the railroads have largely ceased to compete for them and instead have entered into arrangements for their transportation over rail and water routes. The competitive character of coastwise transportation appears not only in the actual transporting of traffic which could move by rail, but in the effects which water competition has long had upon railroad freight rates.[2]

Coastwise and other domestic transportation services, however, are complementary to a very considerable degree. The coastwise carriers operating between the ports of the eastern seaboards carry much freight which moves inland partly by rail or highway. Freight is, for example, transported from interior Southern points to South Atlantic and Gulf

[1] See Chapter 38.
[2] See Chapter 11.

ports by rail, thence to be transported by water to North Atlantic ports for local delivery or for inland delivery by rail. Oil is moved to the Gulf seaboard by pipe-line and is then transported to eastern refineries in tank barges or steamers. Rail and ocean routes have been established via Baltimore, Virginia ports, and Savannah, between central western and western points and New England and other eastern points. The intercoastal steamship lines transport much traffic which comes to them by rail or highway from nearby or distant interior shipping points.

This interchange of traffic between coastwise carriers and railroads is variously facilitated by the issue of through bills of lading, the quoting of joint rail and water rates, the absorption of rail differentials by intercoastal carriers, or by means of other business arrangements, but not all of it is governed by formal interchange arrangements made by the carriers. Some of it is arranged by shippers or consignees who are interested in rail and water transportation.

THE PLACE OF GREAT LAKES CARRIERS IN THE TRANSPORTATION SYSTEM

Well over one hundred million short tons of domestic freight are transported annually on the Great Lakes during prosperous periods, and, in addition, from fifteen to twenty million short tons of export cargo are carried by Lake vessels. Ninety per cent and sometimes more of the domestic traffic consists of bulk commodities, including iron ore, coal, lumber, stone, sand and gravel, cement and oil. The remainder consists of package freight and miscellaneous commodities, and railroad cars loaded with a variety of freight are transported across Lakes Michigan, Erie and Ontario and across certain connecting waterways by car ferries. A number of lake vessels are operated in regular passenger services, some transport excursionists and the number of short distance ferry passengers is substantial although smaller than in the past because of bridge and vehicular tunnel competition at Detroit.

The services of the Great Lakes and connecting channels may be subdivided into (a) long distance domestic inter-lake services, which are of major importance for both bulk and package cargo; (b) intra-lake domestic services between ports on each of the lakes; (c) domestic services between lake ports and the ports of the New York State Barge Canal and coastwise ports as far south as Philadelphia; (d) foreign trade

services between American and Canadian lake ports; (e) foreign trade services between lake ports and Canadian ports of the St. Lawrence River via the Welland Canal; and (f) foreign trade services between lake ports and various United Kingdom and Continental ports via the Welland Canal.

As is the case with coastwise transportation, the Great Lakes services are competitive and are thus a freight rate factor in the transportation system as a whole, while they are also complementary to rail, highway and inland waterway transportation. Much Lake freight is transported over lake and rail routes through terminals where highly specialized facilities are provided for the interchange of bulk cargoes. Some package freight is also transported via lake and rail routes but some of the package freight terminals are not adequately provided with direct rail connections. Some through traffic is handled on through bills of lading and some of it is governed by joint rail and lake rates. Much freight, especially bulk cargo, is shipped without formal through arrangements of this character but is nevertheless transported partly by rail and partly by water.

THE PLACE OF INLAND WATERWAYS IN THE TRANSPORTATION SYSTEM

It is difficult to estimate the net volume of freight traffic transported on the inland waterways, but when all navigable rivers, inland and coastwise canals and connecting channels, other than those of the Great Lakes, are included, it exceeds two hundred million short tons annually. Some of this traffic, however, may quite properly be regarded as coastwise traffic because it moves over portions of the inland route which has been created between various ports along the Atlantic seaboard by means of artificially constructed canals and waterways.

The traffic statistics of the Board of Engineers for Rivers and Harbors indicate that about 90 per cent of the entire freight traffic of the rivers of the United States consists of bulk freight and only about 10 per cent of package freight. The traffic of the Mississippi River System, including the Mississippi, Ohio, Monongahela, Tennessee, Illinois, Missouri and other tributaries consists chiefly of coal and coke, sand and gravel, ore, iron and steel mill products, sulphur, grain, sugar and petroleum products. An increasingly wide range of general cargo how-

ever is being carried, particularly by the modern barges operated by the Inland Waterways Corporation of the United States Government. The traffic of other rivers of the Atlantic, Gulf and Pacific seaboards varies, but bulk cargo predominates in nearly all instances. Inland waterway carriers, as is true of coastwise and Great Lakes transportation, compete with the railways and highways for a portion of their traffic. They offer both service and rate competition, but they also interchange freight with railway, highway, coastwise and Great Lakes carriers in many instances.

The operation of government barge line services by the Inland Waterways Corporation on the Mississippi, Missouri, Illinois and Warrior rivers, including other rivers and waterways connected with the Mississippi, has increased the amount of water competition confronting the railroads. In 1938 the Corporation reported traffic amounting to 3,100,727 short tons. It has encouraged coordination with railroads at many ports by means of physical connection, through routes and joint rates. The Interstate Commerce Commission, acting under the Denison Act of 1928, has required such through routes and joint rates as in its opinion are reasonably economical and not too circuitous. Much of this coordination with common carriers operating on the rivers has been opposed by the rail carriers because it deprives them of all-rail hauls and because joint river and rail rates are lower than those applicable to all-rail transportation.

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CHAPTER 29

Water Transportation Routes and Services

OCEAN ROUTES

As in the case of railroad lines, the routes navigated by ocean carriers are many in number and of different degrees of importance. There are the ocean trunk lines and auxiliary routes of first importance, mainline routes of the second rank and their feeders, direct routes of lesser importance, and the indirect routes requiring transfer from one vessel to another. Their location is determined mainly by the traffic importance of the areas between which trade is being carried on, by the sphericity of the earth, by the size of the land masses between the trading areas, by the location of fuel stations, and by the cost of coal or fuel oil. The routes followed by sailing vessels are also determined by the location and direction of ocean currents and prevailing winds.

Because of the spherical shape of the earth, the shortest distance between any two places is the arc of a great circle connecting the two points. This fact influences nearly all ocean routes, and particularly those across the North Atlantic and the North Pacific. For instance, Yokohama and San Francisco are in practically the same latitude—i.e., Yokohama lies directly west of San Francisco; but the short route between the two places, being the arc of a great circle, curves northward to the Aleutian Islands.

The steamer can usually take the short route, but the sailing vessel must shape its course with reference to the currents and prevailing winds, although by so doing the distance may be greatly increased. In sailing from New York to Rio Janeiro, for example, a vessel will steer southeastward with the westerly winds and currents to the vicinity of the Azores, or nearly across the Atlantic, where a longitude east of Cape St. Roque having been reached, the ship will turn toward the south, and, with the aid of the northeast trade winds north of the equator and of the southeast trades of southern latitude, will readily make the port of Rio Janeiro.

There are eight major ocean trunk-line routes, and from one to as

many as four of them may be utilized by a steamship line in scheduling its sailings. Tramp vessels may operate over every major route in their search for cargoes.

The North Atlantic Route

The ocean trunk line having the heaviest freight and passenger traffic is the one connecting the northeastern seaports of the United States with the entrance to the British Channel. Upon this North Atlantic trunk route more than one-sixth of the world's entire shipping is employed, it being the direct route between the principal commercial countries of the world. In order to conform as closely as possible to a great circle, it skirts the coast of North America northward to the Banks of Newfoundland, and then curves across the Atlantic. The branch lines which unite in this North Atlantic trunk route reach American ports from Canada to the Caribbean, and European ports from the Baltic to the Mediterranean. Vessels plying between Europe and Gulf and West Indian ports take a course but slightly south of this route, and pass comparatively close to the coast of the United States. The route from Great Britain to the Panama Canal via New York is only 323 miles longer than the most direct course; and vessels plying between the West Indies or Central America and northern European ports frequently call at Hampton Roads to replenish their coal supplies.

The North Atlantic route connects the eastern and Gulf ports of the United States and the eastern ports of Canada with the ports of Europe, Great Britain and Mediterranean Africa. Eastward there flows a vast quantity of farm products, raw materials, semi-finished manufactures and a substantial quantity of finished manufactures. The volume of westbound freight traffic has normally been smaller because the imports received from Europe and Great Britain have been less in tonnage as well as in value than the exports shipped from the United States and Canada. They consist more largely of manufactured products, but a wide range of commodities is included and the total imports received from Europe may probably increase in the future. The North Atlantic route, moreover, is the world's greatest ocean passenger route. No other route can at present provide the heavy operating returns that are essential to the profitable operation of the large fast passenger steamers that regularly ply between the large eastern ports of the United States and the ports of western Europe and Great Britain. The

heaviest international mail and express shipments are also made over this route.

The Suez Canal Route

The ocean trunk route ranking next to the one across the North Atlantic is the route from the eastern United States and from western and southern Europe via the Mediterranean and the Suez Canal to India, the East Indies, China and Japan. Before the Suez Canal was opened in 1869, the ocean commerce of Europe and the United States with eastern countries was carried in sailing vessels around the Cape of Good Hope, and was small in comparison with the great volume of traffic now passing through the Suez Canal. As sailing vessels cannot navigate the Red Sea, only steamers use the Suez Canal route, and sailing vessels are seriously handicapped.

This ocean trunk line has an especially large number of branch lines or feeders both east and west of the canal. At Gibraltar the routes from the United States, Great Britain, and western European countries unite in a single route for Suez; in the Mediterranean this route is connected by branch routes with the ports of southern Europe; at Aden, although the main ocean track proceeds to Colombo, some vessels branch off southward to Zanzibar, Mauritius and Delagoa Bay, others turn northward to the Persian Gulf, and still others proceed northeastward to Bombay and Kurrachee. At Colombo the trunk route is again divided into branch routes extending northward to Calcutta and Burma, southward to Australia, and eastward to the East Indies, Singapore, Manila, and the ports of China and Japan. Vessels navigating this route pay tolls for passing through the Suez Canal.[1]

The Panama Canal Route

As the opening of the Suez Canal in November 1869 created a great ocean route, so the opening of the Panama Canal in August 1914 provided another that is destined to play an important role in the world's commerce. The Panama route is in a sense but an extension of the Caribbean route, much freight having formerly been transshipped between the Atlantic and Pacific by rail across the Isthmus at Panama and at Tehuantepec. The opening of the canal, however, made the Panama route a distinct ocean highway. It not only obtained the traffic which

[1] See Chapter 31.

was formerly transshipped by rail, but also a portion of the traffic which was shipped via the South American, South African, and Suez Canal routes. Moreover, it will to an increasing extent in the future stimulate the international commerce of the world and the intercoastal trade of the United States, and in that way create much new ocean traffic.

Traffic is routed via Panama chiefly because of the saving in distance which the canal makes possible.[2] This is greater for vessels to and from American ports than for those which enter or clear at the ports of Europe. The "twilight" or competitive zone as between the Panama and Suez Canals is reached far out in the Pacific Ocean. The line connecting points equally distant from New York via Panama and Suez runs near Hongkong and Manila, while the line connecting the points equally distant from Liverpool via the two great canals runs east of Australia and the large ports of Japan. For shipments from the eastern seaboard of the United States the distance is less via Panama to practically all the leading ports of Australia, Japan, China, and the Philippines; while steamers sailing from Liverpool continue to find the Suez route shorter to all Australasian and Oriental ports except those of New Zealand and the extreme northern ports of Japan and Siberia.

The saving in distance occasioned by the Panama Canal brings about a corresponding reduction in sailing time. For an ordinary 10-knot steamer, from New York the reduction in time via the canal as compared with the shortest-competitive all-water route, is 9.9 days to Wellington; to Sidney, 15.8; Yokohama, 15.2; Valparaiso, 15.1; Honolulu, 27; Shanghai, 7.3, and San Francisco or other Pacific Coast ports, 32.3 days. Reduction in time makes possible more frequent steamship services, more rapid delivery and lower operating costs. The actual economy effected is different for vessels of unlike speed and types.

Besides distance and sailing time other routing factors are in favor of the Panama route. Fuel cost for coal-burning steamers is less via Panama than via the Suez, Magellan, and South African routes, primarily because less fuel is needed to reach the ports which are tributary to the canal, and also because more American and native coals are available, the prices of which are lower than those charged for British coal at many of the coaling stations on the Suez and Magellan routes. The greater ease of obtaining cargoes on particular voyages, moreover, at times causes vessels to take the Panama route from outlying ports even

[2] See Chapter 31.

though it is not the shortest route. Vessels which formerly transshipped cargoes by rail at Tehuantepec now use the canal because they save the difference between the transshipment costs and the canal tolls.

The South African Route

A fourth ocean trunk line is the South African. Its Atlantic termini are in Europe and America; its main eastern connections are with the western, southern and southeastern coasts of Africa, with Australia and New Zealand, and, for sailing vessels, with the East Indies and the Orient. Some ships on this route from Europe engage in the West African coasting trade, but more do not. A large share, but not all of the shipping on this route, calls at Cape Town, the most important center of the South African trade, and at Durban in Natal, for coal. The heaviest traffic over this South African route is carried by the numerous lines of freight steamers running from northwestern Europe to Australasia. Passenger and mail steamers take the Suez route from the British Channel to Australia; but the distance saved, being less than 1000 miles, is not enough to cause freight vessels to abandon the Cape route. Any extensive interference with the Suez route—such as occurred during the great European War—causes a diversion to the South African route of many vessels which normally are engaged in the Australian and Oriental trade via the Suez Canal.

The South American Route

Corresponding with the route just described is the trunk line around South America, connecting the eastern and western shores of the Americas. In addition to the through traffic carried between the Atlantic and Pacific regions over this route, there are carried on, usually distinct from the interocean through traffic, the Pacific coastwise trade, and the trade of Europe and the eastern United States with Brazil and the countries of the Rio de la Plata.

Vessels engaged in the trade between the countries of the North Atlantic and the east coast of South America usually do not engage in the through traffic with regions beyond the Straits of Magellan. Various lines of ships ply back and forth between Europe and Brazil and the mouth of the Plata, and some also between the United States and those sections of South America, and a substantial amount of tramp tonnage is employed. Tri-angular shipments in regular lines from the

United States to South America by way of European ports have been discontinued since the establishment of a largely enhanced direct line service between the United States and the eastern seaboard of South America. Tramps, however, continue to operate to and from the ports of Brazil and the mouth of the Plata either directly or over a triangular route.

When the Panama Canal was completed, all or nearly all of the steamships which formerly operated via the Straits of Magellan were diverted to the isthmian route. Indeed, the main commercial reason for constructing the Panama Canal was to shorten the water route between the countries of the North Atlantic and the Pacific Coast of the Americas. Sailing vessels may continue to sail around South America between Atlantic and Pacific ports, for the calms of Panama Bay make their use of the Panama Canal impracticable, but they have found difficulty in competing against steamers using the canal route. Since the opening of the Panama Canal the importance of the South American route depends almost entirely upon the commerce of the ports of the east coast of South America with the United States and Europe.

The Caribbean Route

Although the traffic of the Gulf of Mexico and the Caribbean Sea—the two bodies of water which together are often called the American Mediterranean—may be said to be handled over routes that are southern branches and extensions of the North Atlantic trunk line, the present and prospective importance of the trade of the countries along the Caribbean and Gulf littoral affords good reason for placing the routes of that trade in a separate class. The main entrance from the Atlantic to the Gulf is the Florida Strait; the principal gateway to the Caribbean is the Windward Passage, at the east end of Cuba; but the Mona Passage east of Puerto Rico, and other channels to the south, are also used. Vessels enter the Gulf either to handle the grain, cotton and lumber exports from the Gulf cities of the United States, or to make the circuit of the Gulf and to share in the general trade of the adjacent countries with each other and with Europe and the North Atlantic ports of the United States. Likewise many of the ships entering the Caribbean from the United States or Europe call at several ports and make at least a partial circuit. There is a growing trade carried on entirely within the American Mediterranean between the Gulf Coast of the United States and the

ports to the south. The lines followed by the traffic of the Gulf and Caribbean are so complex that they may be more accurately called a system or group of routes than a trunk line, but together they comprise what is usually known as the Caribbean route.

A gradual increase in traffic, as in case of the South American route, may be anticipated. The trade of the United States in this region has, indeed, grown so substantially as to merit the most careful consideration of the entire Caribbean region by American exporters and importers.

The North Pacific Route

The most important trade route within the Pacific is the one connecting North America and Asia. Having for its American termini the chief ports from San Diego to Prince Rupert, and for its Asiatic focus Yokohama, with extensions from that port of call to other Japanese ports, to Shanghai and other cities of the mainland, and to Manila, this North Pacific trunk line is the route of the rapidly developing trans-Pacific trade. The shortest course across the ocean being by the great circle, the northerly route is taken, except by such line vessels as call at Honolulu and thereby add 1000 miles to the voyage from San Francisco.

It will be recalled that the interests of the transcontinental railroads and the trans-Pacific steamship lines are common in that both groups of carriers seek to share in the heavy traffic that moves between Oriental ports and the central western and eastern regions of the United States. They both compete against the eastern trunk line railroads and rival ocean routes. The transcontinental railroads have established special import and export rates, and the traffic of the North Pacific ocean route as a result, is not limited exclusively to the Oriental commerce of the Pacific coast states.

The South Pacific Route

One other Pacific route calls for special mention, the one from the Pacific Coast of North America to Australasia. The sailings over this trunk line are most frequent via Honolulu and Samoa or Fiji, and thence either to New Zealand or to Australia; but another course much followed is from San Francisco via Tahiti in the Society Islands, and thence either direct to Sydney or to New Zealand, and on to Australia. The fast-mail route from Australia to Europe is across the Pacific to San Francisco or Vancouver, across the continent by rail to New York or

Halifax, and on by express steamer; but in the absence of adequate mail steamers on the Australasian route the mails have frequently been forwarded through the Suez Canal. Export and import rates are also utilized by the transcontinental railroads as a means for sharing in the commerce of Australia and New Zealand with the central western and eastern states, but the freight traffic moving between Australasia and the western coast of North America is not so heavy as that over the other ocean trunk routes described, and the Panama Canal will restrict the future growth of the business of this route.

TYPES OF SERVICES AND CARRIERS

In order to meet the varying needs of different shippers of waterborne commerce as to types of commodities, volume of cargo and size of individual shipments, regularity and speed, shipping economies and other special considerations, several types of service have been established.

Types of Ocean Services

The transportation services operating in the overseas trades are of three principal types: (a) chartered or tramp service; (b) regular line services, and (c) the services of privately operated or industrial carriers.

The tramp service is distinctive in that it is not limited to fixed routes. Tramp vessels may be chartered to transport cargoes of any kind not requiring vessels of special design over any route and to any destination not prohibited by physical conditions or legal restrictions. Although tramp vessels may be chartered by any shipper who prefers this type of ocean service, tramps are not common carriers in the usual sense, for they do not offer to carry freight for the general public. Their service is limited to those who charter them, except in so far as the charterer may authorize the acceptance of cargoes other than his own shipments. The United States Shipping Act specifically provides "that a cargo boat commonly called an ocean tramp shall not be deemed such common carrier by water in foreign commerce." Tramps are usually chartered to carry shipload lots of commodities, such as coal, ore, grain, sugar, cotton, lumber, building materials, phosphates, sulphur, nitrate, and woodpulp, but they may also be placed "on the berth" for smaller shipments of general cargo. The basic document governing the transporta-

tion service is the charter, many forms of which are in use.[3] The primary agencies through which most chartering arrangements are made are the ship brokers who are located at the principal ocean ports everywhere throughout the commercial world. Tramp operators do not need to provide themselves with permanent port facilities; nor need they maintain expensive traffic offices and freight soliciting agencies.

The vessels operated in the ocean tramp service are cargo freighters built for economy of operation rather than for speed, and for the carrying of maximum quantities of commodities that move in shipload lots rather than high-class general cargo or commodities requiring vessels of specialized design. Most of them are slow freighters of moderate tonnage. Ordinary tramp steamers having a tonnage varying from 2,000 to 5,000 and sometimes to 10,000 tons gross, a speed varying from 8 to 11 knots and a length rarely exceeding 300 or 400 feet have served the purpose of many shippers seeking cheap transportation for large consignments, and they are not prevented by excessive size or draft from picking up or delivering cargo at a wide range of ocean ports.

The ocean tramp service has, however, lost ground relatively in the overseas trades. "Between 1914 and 1933 the world's tramp tonnage declined from 22.7 to 21.3 million gross tons whereas the tonnage of all other types of merchant vessels increased from 26.4 to 46.7 million gross tons."[4] Many of the great bulk commodities which formerly depended upon the tramp service have shifted largely to the regular lines and industrial carriers. The basic causes for the decline of the tramp are stated by the Maritime Commission as follows: "(1) Carrier developments, especially the trend toward specialization in ship construction, the continued cheapening of speed, and the shift in fuel from coal to oil; (2) cargo developments, such as the drastic decline of the British coal trade, the growing tendency throughout the world to ship manufactured or processed goods instead of raw materials and foodstuffs, the gradual reduction of seasonality and irregularity in the movement of bulk cargoes, and the greater demand for speed and regularity in transport; and (3) general economic developments, especially the growing trend toward vertical integration of industry accompanied by the development of the industrial carrier, and the intensification of economic nationalism since the World War, which has been marked

[3] See Chapter 34 for types of charter parties.

[4] Maritime Commission, Economic Survey of American Merchant Marine, p. 17.

by a rise in trade barriers and a great increase in subsidies for liner shipping." [5]

The regular line service is performed over definite routes between fixed ports and on announced schedules. It is a common carrier service for it is open to the general shipping and travelling public. Some ocean lines carry freight exclusively while others carry a varying proportion of freight and passengers. They carry most of the world's overseas general cargo, passenger, mail and express traffic, but they also compete with the tramp service for bulk commodities or heavy traffic of regular volume and they sometimes supplement their regular cargoes by placing a vessel on the berth for part cargoes of commodities such as grain or case oil, which they may be willing to accept at especially low rates to avoid the necessity of carrying ballast. A special type of passenger line service, which has become of considerable importance during recent years, is that performed in vessels operated on "ocean cruises." [6]

The vessels operated in the line service range everywhere from ordinary freighters, which do not differ from the better types of tramps, to large cargo vessels especially built for the line freight service, and to the great passenger-carrying vessels which frequent the North Atlantic ocean route. They may be grouped as follows: (1) Mail and passenger vessels or "express liners," having but relatively small cargo space and carrying mainly passengers, mail, express goods and high-class freight. (2) Passenger and cargo or "combination liners" having relatively larger cargo space and carrying in addition to passengers, mail, express goods and high-class freight, bulky freight such as grain, cotton, iron and steel and foodstuffs. (3) Fast cargo vessels or "cargo liners" which carry cargo exclusively, but nevertheless operate over definite routes on fixed schedules. They are adapted to the carriage of the many different kinds of freight which move over their routes in less-than-shipload lots. Some of them are constructed for the particular trades in which they are operated and include many of the world's best-built, fastest and most efficiently operated freighters. They differ from tramp vessels in that they are usually larger, faster and more expensively equipped.

Privately operated or industrial ocean carriers are primarily engaged in the carriage of freight for the industrial or mercantile concerns

[5] Ibid., p. 18.
[6] See Chapter 38.

which operate them. The difference between them and tramps or liners cannot in some cases be easily distinguished, because they frequently transport cargoes for others as well as for the companies which operate them. Even such vessels, however, are primarily engaged in a private service, and act as common carriers only to fill surplus space or to obtain return cargoes. Many vessels engaged in this ocean service are special types of craft constructed primarily to transport some particular commodity such as coal, ore, lumber, fruit, steel products, asphalt or petroleum. During the early years of American ocean shipping, merchants were obliged to provide themselves with a private transportation service because common carrier services were not offered. The reasons why some industrial and mercantile concerns now operate ocean services are variously the desire to have at their disposal ocean vessels especially designed to meet their needs; to control more definitely the scheduling of vessels and the number of sailings; and in some instances to obtain minimum shipping costs or even to make a profit from the operation of regular lines which transport not only their own shipments but those of the general public.

Types of Coastwise and Inland Services

In general these same major classes of service also prevail in the domestic water-borne commerce of the United States. The term "contract carrier," however, is used in domestic commerce more commonly than tramp service. The tramp service, whether in foreign or domestic commerce, is a form of contract service, for tramp vessels are operated under the terms of a charter contract. But many contract carriers in domestic commerce operate on the basis of a private contract or agreement which does not always take the form of a formal charter party. The essential characteristic is that when operating as a contract carrier its vessels are not engaged in a common carrier service open to the general public, but in a service arranged privately with a particular shipper.

The Federal Coordinator of Transportation gives the following general account of the services operating in domestic commerce:

> The nature of the commodities which seek waterway transportation, and the flow of traffic available, have developed distinct types of waterway freight transportation services. Common carrier operators generally service definite routes on fairly well established schedules. Large movements, particularly of

bulk commodities, are ordinarily handled in cargo lots by contract carriers. Large producers, in some instances, either operate their own vessels or have established subsidiary companies to transport their own tonnage. Such operations are commonly classified as private carriers. There is no absolute line of demarcation, however, between these three different classes of operators. Private carriers frequently act as contract carriers and often as common carriers. Contract carriers sometimes operate as common carriers in one direction or over part of their routes, and common carriers in some cases handle tonnage on a contract basis. . . . It was clearly indicated that common carriers as a class handled not more than ten per cent of the total water-borne commerce.[7]

It is obvious that the relative importance of the various types of service in most areas served by domestic carriers by water differs from that in the overseas export and import trades. Regularly scheduled common carrier lines predominate in the intercoastal trade. There has at times been a superabundance of line services. Substantial quantities of certain very important intercoastal commodities such as oil, lumber and steel are carried by privately operated or industrial carriers. The tramp business as it is known in foreign trade is comparatively small, partly because of the active competition of the lines and the preference of certain large shippers for private services, but possibly also because intercoastal shipments constitute coastwise trade from which foreign flag tramps are excluded by law. The general situation in the long distance coastwise trade of the United States with the overseas island possessions is similar to that found on comparable overseas foreign trade routes, excepting again that foreign flag vessels are barred.

In the coastwise commerce moving between the ports of the several seaboards, exclusive of intercoastal shipping, there is a substantial number of regular line services. As in the intercoastal trade some of them carry passengers as well as general cargo. The relatively large volume of coastwise bulk cargo, not so dependent upon regularity and speed as upon economical transportation, has encouraged the establishment of contract services which are operated under charters or other contract arrangements. The importance of bulk commodities especially adapted to transportation by barges of particular size, or oil tank barges and steamers, or "steam schooners" such as are used to transport lumber along the Pacific Coast, or other specialized equipment has also encouraged the operation of private industrial services. In some instances

[7] Freight Traffic Report, Vol. II, p. 53.

the desire for a possible saving in transportation costs or for more definitely controlled service frequency and regularity have been additional reasons for the establishment of private services.

The common carriers of the Great Lakes consist mainly of the packet lines which operate on regular routes and schedules during the open season. Some of them are freight packet lines which carry general merchandise and occasional shipments of bulk cargo; some are passenger lines which carry passengers and general merchandise; and some of the packet lines also are especially equipped to carry automobiles. The railroad car ferries which carry both bulk freight and general merchandise in freight cars may also be regarded as common carriers, but they are virtually parts of the railroads which operate them.

The large volume of Great Lakes bulk traffic is carried by contract carriers operating under charter or agreement between shipper and vessel operator, and by private industrial carriers owned by industrial or mining corporations directly or through subsidiary companies. These two classes of service frequently compete for bulk commodities. Some of them operate over regular routes with whatever degree of scheduling is desired by their private owners or is arranged for by contract. Others operate wherever they are able to obtain bulk cargoes.

As the inland rivers and canals are also utilized mainly for the transportation of bulk cargoes much the same situation prevails as on the Great Lakes. The regularly scheduled packet services account for but a small percentage of river and inland canal cargoes, mainly because of the preponderance of bulk commodities, railroad competition and the disinclination of the railroads to establish through rail and water routes, joint-rates and interchange facilities with common carrier packet lines. Some of the inland freight lines operate barges or river steamers in an exclusively freight service; others operate steamers which carry both passengers and freight.

Contract and private services transport most of the bulk cargo of the rivers and inland canals. On the Ohio River ninety-five per cent of the commerce is carried by private carriers. On the Mississippi contract and private carriers each carry substantial quantities of bulk cargo and some bulk cargo as well as general merchandise is carried by common carrier barge lines. Most of the carriers operating on the New York State Barge Canal are considered to be contract carriers, but many of them offer both common carrier and contract services. A number of

private or industrial services also operate on this canal. Several eastern oil refining companies operate fleets of motor driven tank barges for the transportation of westbound petroleum products and refined oils, and the Ford Motor Company ships motor parts to eastern assembly plants in privately operated vessels which compete with other carriers for westbound package and miscellaneous cargo on the return voyage.

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CHAPTER 30

Vessel Types, Tonnage and Measurement

THE SEVERAL types of vessels may be classified according to the kind of service rendered, the power employed in propelling them, their general structural design, and their deck arrangement. Each of these several classifications will be briefly considered.

When classified on the basis of the service or use to which they are devoted vessels are divisible among the following groups: general cargo carriers, high-speed passenger liners, combination freight and passenger vessels of moderate speed, ore carriers, tankers, and vessels employed in car-ferry and seatrain services. There are several special services, in addition to these general ones, for which vessels are designed, but the foregoing classes include most ships. Vessels in each of these general groups may be given two other classifications, one based upon propelling power and the other upon their structural design or deck arrangement.

MARINE ENGINES AND PROPELLING POWER

Until a century ago, all self-driven ocean vessels were propelled by the wind and their sails, then steam engines began to be used. The change from sails to steam was at first slow; but, as the marine engine was improved, the transition became rapid, until today less than two per cent of ocean shipping consists of sailing vessels. Although it costs less to propel and to operate sailing vessels, their efficiency is so much less than that of engine-driven vessels that there are but few services in which the sailing vessel can be used to advantage.

Another change is taking place in the source of the power by which vessels are driven. Until about 1910, coal was the fuel used for marine engines, but, at the present time, oil is the fuel used by most vessels. Oil is superior to coal for several reasons; it is cleaner, it requires less space for storage, it increases the "sailing" range of both commercial and naval vessels, it reduces the time required for fueling, and the

number of times vessels must take on fuel. The requisite engine-room staff for oil-burners is less than for coal-burning engines. As long as the world's petroleum supplies are abundant, oil will be the fuel most used in marine steam engines.

The marine engines now in use are of three kinds: the "reciprocating" (piston-driven) steam engine, the steam turbine, and the internal combustion oil-burning diesel. The reciprocating steam engine applies its power directly to the propeller shaft; while the turbine and diesel engines may be geared directly to the shaft or they may operate generators by which electric power is created for driving the propeller shaft. Thus the turbine engine may be a direct-acting or a turbo-electric, and the diesel engine may be a direct-acting or a diesel-electric.

The reciprocating marine steam engine now most used is a quadruple-expansion, inverted, direct acting engine. The shaft that leads from the engine to the propeller at the rear of the vessel is, of course, at the floor of the vessel's hull, and the cylinders of the engine are placed in an inverted position above the shaft. The rods from the pistons connect with the cranks of the propeller shaft, and are thus direct-acting and without gearing. The steam from the boiler passes through four cylinders in succession, the exhaust steam from the first cylinder enters and drives the second cylinder, and then operates in turn the other two cylinders. The fuel used in generating the steam may be either coal or oil.

In the turbine engine the power is developed by the pressure of steam upon movable blades. In the DeLaval turbine engine (invented in 1883) the impulse of the steam at high pressure is upon the blades of a revolving wheel; while the Parsons turbine (invented in 1884) is of the "impulse-and-reaction" type. A cylinder a few feet in diameter and of considerable length, the enlarged part of a revolving shaft, has attached to its outer surface closely-placed small blades set at an angle and all facing in the same direction. This revolving cylinder is encased in a fixed cylinder, the inner surface of which is fitted with closely spaced blades. The blades of the outer cylinder face at an angle the surface of the blades on the inner revolving cylinder. The steam entering at one end under high pressure exerts its impulse upon the blades of the rotating cylinder, is deflected by them to the faces of the blades upon the fixed cylinder, and is diverted by those blades back to the surfaces of the blades upon the revolving cylinder. The steam thus passes through the length of the turbine and passes out through the exhaust,

after some expansion, at a somewhat reduced pressure, but still with a pressure sufficient to enable it to be used in driving secondary and third diesel units, or a reciprocating engine if such power arrangement is desirable.

The turbine engine has a speed of revolution several times the speed at which the propellers of a vessel may be operated; hence, if the power of the engine is applied directly to the propeller shaft, it must be by mechanical gearing that will effect the necessary reduction in speed. This is the direct-acting turbine which is coming into more favor than it formerly had, because it has the advantage resulting from the direct application of power; but it has the handicap of the loss of energy due to the reduction in speed and power. The turbo-electric engine requires additional machinery for the conversion of the power into electric energy, but the electric power can be applied with great efficiency and flexibility. Some high-speed liners, among them the *Normandie,* are equipped with turbo-electric engines.

The diesel engine, named after its inventor, Rudolph Diesel of Germany, dates from 1897. It was first adapted to marine use five years later; and when, in 1905, it became possible to reverse the diesel engine, the use of the engine for ship propulsion on an increasing scale was assured. In 1938, nearly one-fifth of the world's vessel tonnage was of diesel-engined vessels, while reciprocating steam engines were used in two-thirds of the tonnage. The remaining tonnage was equipped with turbine engines.

The diesel engine has no boilers and furnaces. Power comes from the combustion of oil in the cylinders. By means of an electric pump, oil in the form of a fine spray is forced into the cylinder where the air by high pressure has been raised to a temperature well above the ignition point of the injected spray, which burns and by its resulting expansion drives the piston on its outward stroke. In the two-stroke diesel engine, the piston on its return stroke compresses and raises the temperature of the air in the cylinder for another combustion of injected spray and another working stroke of the piston. Such an engine must also be fitted with a scavenger pump to force clean air into the cylinder to clean it out after each working stroke. There is a four-stroke type of diesel engine that does its own scavenging, but only one stroke in four is a working stroke. There is also a double-cylinder type of diesel engine in which each stroke is a working stroke. Such an engine also requires a scavenger

pump. The two-stroke type is the one that is most used, although diesel engines of both of the other types are in service.

The diesel engine consumes much less fuel than is required for other engines. This leaves more space for cargo, and gives vessels a maximum sailing distance without refueling. The diesel engine can also be started at any time, without the preparation required by steam-propelled engines. The handicaps of the diesel engine are its relatively high initial cost and its weight per unit of power developed. These disadvantages, however, have been so greatly lessened during recent years that the majority of vessels now being constructed year by year are being equipped with diesel engines. Until recently diesel engines were used only in medium-sized cargo vessels of moderate speed, but now large tankers and also combination freight and passenger vessels are being equipped with diesel engines, some of the geared type and some with electric drive. The diesel engine is being increasingly used for different types of naval vessels. For obvious reasons, all submarines have diesel engines.

It will be understood that the vessels referred to in the preceding paragraphs are large ships, and do not include the small motor boats most of which have gasoline engines. The number of motor boats in the United States is almost incredibly large, there being about 200,000. At the port of New York, in 1937, there were 28,000, at Baltimore 12,000, while Philadelphia had 11,000 and Tampa 10,000.

It is also hardly necessary to refer to the fact that there is a large number of vessels—inland and sea-going barges—that have no engines. There are more than 5500 barges enrolled by the United States and their gross tonnage of 1,800,000 tons is about one-eighth of the total tonnage of vessels of American documentation. Most of the barges are of wooden construction and are mainly used on inland waterways. There are, however, a relatively large number of large sea-going steel barges, some of which are enrolled for the domestic trade while others are registered for operation to and from foreign ports.

CLASSIFICATION OF VESSELS BY STRUCTURAL DESIGN AND DECK ARRANGEMENT

In general a vessel is composed of two parts, the hull and the superstructures. In the construction of the hulls of vessels, iron began to be

used instead of wood about 1840. The change came about slowly; and, while it was still in progress, steel (about 1880) began to take the place of iron, with the result that today practically all self-propelled vessels are of steel construction. There are many wooden barges used on inland waterways, and there are some barges of composite construction, the framing being of steel and the outer shell of wood.

In the construction of the framework of a steel hull, strength may be given the structure either by making the transverse or side frames heavy and strong, or by making the longitudinal beams and framing so heavy as to cause them to be the vessel's chief source of strength. In most vessels, strength is provided by strong transverse framing. If the interior of the hull is to be, in large part, an open space without cross-beams supporting decks, necessary strength is given the vessel by heavier, or "web," framing with the interior floor plates of the hull continued up the sides of the hull; or the necessary strength can be obtained by "deep framing composed of two angles fitted together so as to form an extra heavy frame," the inner hull floor plates not being carried up the sides of the hull.

In the construction of naval vessels, emphasis has long been placed upon longitudinal framing. By the so-called Isherwood system, this principle of construction has been applied to some types of merchant vessels, especially oil tankers. By this system, the fore-and-aft members of the framing are made heavier and the transverse members are lighter in weight and farther apart, the upper ends of the side frames being so connected by cross-ship beams as to make the frames complete transverse belts around the hull of the vessel.

The most usual classification of vessels, whether they be freight carriers or passenger ships, is based upon the number and arrangement of the decks. The design of vessels, in general, is determined by the uses to which they are to be put. The ocean-going vessel of simple design, from which the various types of vessels now in service have been evolved, is the relatively small freight ship having two full-length decks, a lower deck within the hull and a main deck forming the ceiling of the hull. Upon the main deck there are the three usual structures including the forecastle at the bow, the bridge amidships, and the poop at the stern. In order to increase the capacity of the aft hold, and to prevent the vessel when loaded from trimming to the bow, the main deck abaft the bridge may be raised four or five feet. When this is done

the vessel is a "raised quarterdecker." If the bridge is extended forward to within a few feet of the forecastle and a "well" is thus formed between the two superstructures, the ship becomes a "well-decked steamer"; and, if the deck between the bridge and forecastle is so raised as to increase the freeboard and to reduce the shipping of water, the vessel is called a "raised foredecker."

Larger cargo carriers have three full-length decks, while a combination freight and passenger vessel will have four or five full-length decks above which there will be passenger accommodations and the bridge space in two or more part-length decks. In the case of a three-deck freight vessel, when the side frames of the hull are carried full-sized to the upper deck, and that deck is the strength deck, the ship is called a "three-decker"; but when the frames between the middle and upper deck are somewhat lighter, and the upper deck is of lighter construction, the ship becomes a "spar-deck vessel"; and, if the construction above the middle deck is made still lighter, and the middle deck is made the strength deck, the result is an "awning-deck vessel."

The upper full-length deck of a three- or four-deck freight vessel may have a small "tonnage opening" having a width of four feet fore and aft and a length equal to half the width of the ship. Such an opening is cut in the uppermost full-length deck in order to give the space between that deck and the next deck below the status of being an "open" space. Under the several national vessel measurement rules, open spaces are not included in the gross and net tonnage of vessels; and the large space under the shelter deck is thus excluded from the tonnage upon which vessels have to pay harbor and terminal charges in the ports of the world, and for the use of canals, other than those at Suez and Panama where special measurement rules apply. As a matter of fact the "tonnage openings" are not permanent openings, because they can be so battened down with boards and water-proof tarpaulins as to make them sea-proof; and vessels regularly use the large space under the so-called shelter deck for the storage of dry cargo. However, a vessel with a properly placed "tonnage opening" of correct size, is called a "shelter-deck vessel," and it may be a three-decker or a four-decker.

The large passenger vessel as will be stated in Chapter 38 may have accommodations for three or four classes of travellers, with many decks with subdivisions of deck spaces for numerous purposes. The *Queen Mary* has three decks above the main deck and five full-length

decks below, there being nine decks for the accommodation of passengers; and below these decks there are three more short ones in the fore and aft parts of the hull for the stowage of mails and baggage.

There are several special types of ocean freight carriers to which only brief reference need be made. Among these special types, the oil tanker is largely and increasingly used. To minimize the fore-and-aft and side-to-side movement of the oil cargo, the carrying space within the ship is subdivided into tanks formed by a longitudinal bulkhead extending the full length of the hold and by several transverse bulkheads.

Many combination passenger and freight vessels are provided with insulated rooms and refrigeration facilities. Some ships which are used especially for the transportation of fruit or fresh meat are so extensively fitted with insulated holds and refrigeration facilities as to become refrigerator vessels. Ships employed in the transportation of bananas and other fresh fruits are provided with facilities for ventilation as well as refrigeration.

Another special type of vessel is the "self-trimming" bulk carrier of ore or grain. The framing of such vessels is made heavy and strong enough to enable the ships to have an open, unobstructed hold extending from a forward collision bulkhead to the bulkhead separating the hold from the engine room which is located in the after part of the ship. The open hold is fitted with a floor that slopes down from each side toward the center of the vessel, thus facilitating the self-trimming of the cargo as it pours into the hold. In the case of some self-trimming vessels, the side-beams or frames at a level a few feet above the deep-load line are bent and carried inward several feet then upward to a top girder extending the length of the vessel. The horizontal transverse beams connecting the top girder on the starboard side with that on the port side form the deck of the vessel. Such a ship is a "self-trimming turret" vessel.

The latest type of the specialized ocean carrier is the so-called "seatrain," which transports only loaded freight cars from the railroads at one port to another port and to the railroads operated therefrom. The seatrain is the car-ferry boat so enlarged and modified as to be able to carry freight cars on three decks and to operate safely at sea. Special terminal facilities for loading and unloading the freight cars, to and from the several decks, have to be provided.

In transportation by water as well as in railroad and motor trans-

portation rapid technical progress is being made in the development of motive power and in the adaptation of the carrier to types of service to be performed. Existing equipment is being so changed as to increase its service efficiency, and, from time to time, new specialized service brings about the construction and operation of new types of carriers. The standard types of vessels range all the way from the two-deck tramp or line freighter capable of carrying 2000 tons of cargo, more or less, up to the mammoth passenger liners such as the *Normandie* and the *Queen Mary;* while, for the carriage of each kind of cargo that moves in large volume and in shiploads, a special type of vessel is provided. Specialization and progress are the order of the day.

VESSEL AND CARGO TONNAGE

The terms ton and tonnage are applied to vessels and also to their cargo; but with different meanings. There are vessel tons and cargo tons; and there are several different meanings given to each kind of ton. Vessel tonnage is of four kinds, displacement, dead-weight, gross, and net. A cargo ton may be a weight ton or a measurement ton. Each of the several kinds of vessel and cargo tons may be briefly defined and discussed.

Vessel displacement tonnage. As the term indicates, the displacement tonnage of a vessel is the weight of the water displaced by the ship when afloat. In countries having the English system of weights and measures, displacement tonnage is expressed in tons of 2240 pounds, while in countries having the metric system it is stated in tons of 2204.62 pounds. As the weight of a vessel depends not only upon the vessel itself but also upon what is in or aboard the vessel, there are three kinds of displacement, "light," "loaded" and "actual." The term displacement "light," is applied to a vessel with its crew and supplies on board but without fuel, passengers or cargo. A vessel's "loaded" displacement is its weight when loaded to its maximum draft, i.e., to its deep-load line. At any particular time during a voyage its "actual" displacement is the weight of the vessel and its contents at that time. The actual displacement of any vessel varies with the amount of fuel and cargo and the number of passengers aboard. For each vessel there is a displacement curve and diagram which indicates the displacement tonnage at any given draft of the vessel.

Vessel dead-weight tonnage. The dead-weight tonnage of a vessel is the maximum weight of fuel, passengers and cargo that the vessel can carry when loaded to its deep-load line. The dead-weight tonnage of a vessel is thus the difference between its displacement "light" and its displacement "loaded," as defined in the preceding paragraph. That difference is shown by the vessel's displacement curve and diagram. In countries having the metric system, dead-weight tonnage is the number of tons of 2204.62 pounds; and, in other countries, tons of 2240 pounds. When freight vessels are leased to be operated on time charters, the payment for the use of the vessel (the charter rate) is usually a stipulated amount per month per dead-weight ton. In the case of large vessels operated in the passenger service, or as regular combination passenger and freight vessels, the designation dead-weight tonnage is not applicable, because such vessels can rarely be loaded to the deep-load line. Time charter rates for such vessels would be upon their tonnage capacity—their gross or net tonnage.

Vessel gross tonnage. The gross tonnage of vessels is expressed in units of space and not of weight. The gross tonnage of a vessel is its closed-in capacity in cubic feet divided by 100, or its capacity in cubic meters divided by 2.83. A vessel ton is 100 cubic feet, or 2.83 cubic meters, of closed-in space. Each maritime country has its rules for the measurement of vessels, but these rules are not uniform and the same vessel may have a different gross tonnage by the rules of one country than by those of another. This is due to the fact that different measurement rules do not specify the same spaces that are to be exempted from measurement. However, the British rules as to spaces that shall be exempted from measurement are followed rather closely by most other countries, and tonnages resulting from the several national rules do not differ greatly. In all of these national rules, as will be explained later, some relatively large spaces that are used to accommodate passengers and to store dry cargo (spaces that are in fact closed-in) are exempted from measurement. The measurement rules that provide accurately for the measurement of the earning capacity of vessels, and thus provide for the correct determination of their gross and net tonnage, are the Suez Canal Rules and the Panama Canal Rules which will be discussed presently.

Vessel net tonnage. The net tonnage of a vessel, when accurately determined, is the number of tons of 100 cubic feet, or of 2.83 cubic

meters, available for cargo and passengers; it is the actual gross tonnage of a vessel minus the tonnage of the spaces devoted to the operation of the vessel. The deducted spaces include those occupied by machinery and fuel, those in the crew accommodations, those required for stores and galleys, and the numerous other spaces used in the management and navigation of the vessel. For the aggregate of commercial vessels of all types, about 30 per cent of the actual closed-in capacity is needed for the operation of the ship, leaving about 70 per cent of the capacity available for passenger accommodations or for the stowage of cargo. The ratio of net tonnage to gross tonnage varies widely with different types, being high in general cargo carriers of slow speed, and low in high-speed passenger vessels with especially large spaces devoted to engine room, fuel, and crew accommodations. The net tonnage of vessels is accurately determined by the Suez Canal and Panama Canal Rules; but not by the American and other national measurement rules, which fail to include in gross tonnage all the closed-in spaces, and all of which deduct from the gross tonnage, thus incompletely calculated, numerous spaces, some of which are relatively large, that may be, and regularly are, used for stowage of dry cargo and for the accommodation of passengers.

The national measurement rules are used to determine the tonnage of vessels for national registration. The vessel's certificate of registration states its gross and net registered tonnage. By the comity of nations, each vessel pays terminal and harbor charges in the ports of the world based upon its official net registered tonnage; and this explains why it is the policy of all maritime nations to keep the official net registered tonnage of their vessels as low as possible.

Cargo tonnage. As applied to cargo, tonnage has two very different meanings, it may mean tons of weight, or it may mean measurement tons of space. A weight ton when used with reference to commodities shipped within the United States means a "short" ton of 2000 pounds, while in England a ton of weight is 2240 pounds, which in America is called the "long" ton to distinguish it from the ton of 2000 pounds. In France and other countries having the metric system a weight ton is 2204.62 pounds. The "long" and "metric" tons are usually applied to the cargo of vessels engaged in international commerce. Much of the freight that makes up vessel cargoes is so light and bulky that the transportation charges have to be according to space occupied by the freight,

instead of being based upon the weight of shipments. For this reason, the tonnage unit applied to light-weight, bulky freight is the "measurement" ton of 40 cubic feet. It is the practice of ocean carriers to accept freight for transportation at a stipulated rate per ton "weight or measurement, ship's option."

VESSEL TONNAGE MEASUREMENT RULES

In the foregoing definitions of gross and net vessel tonnage, reference has been made to the rules by which vessels are measured to determine their capacity and tonnage. Because of the indefinite and varying meaning that was being given to ship tonnage, the British Government, in 1852, adopted a system of measuring vessels, and a tonnage unit, recommended by George Moorsom. The spaces within the hull and other parts of vessels of all countries have, since the enactment of the British Merchant Shipping Act of 1854, been measured by applying the Moorsom rules. When, in 1852, the vessels in the British Merchant Marine were measured by the rules that had been formulated by Moorsom, it was found that the ratio of the total registered tonnage of the vessels (3,700,000 tons) to the total capacity, in cubic feet, of the vessels (363,412,456 cubic feet) was 1 to 98.22. Accordingly the British Admiralty adopted 100 cubic feet as a vessel ton, and that tonnage unit was fixed by the Merchant Shipping Act of 1854, and was later adopted by other countries.

Theoretically the gross tonnage of a vessel is its closed-in capacity in cubic feet divided by 100, or in cubic meters divided by 2.83. There are, however, certain spaces within a vessel that are not included in its gross tonnage. Such spaces are those framed-in around the funnels and those required for the admission of light and air into the engine room, to the extent that such spaces are above the deck "over the lowest tier of side-to-side erections, if any, on the upper deck"; the cubical contents of hatchways; companion ways and companion houses; domes, skylights, and airshafts. The present practice is also to exempt from gross tonnage the space within the double-bottom of the vessel, except such spaces within the double-bottom as may be fitted for carrying cargo.

Both the gross and net tonnage any given vessel is said to have will depend upon the rules applied in measuring the vessel. There are two general categories of vessel measurement rules. One category includes

the several national rules, each country having rules to determine the official gross and net tonnage of all vessels for registration under its flag. The several national rules are in general based upon the British rules, each country being zealous in keeping the registered tonnage of its vessels as low as that of like British ships. The statutes of the United States as interpreted and applied are especially favorable to most types of vessels under the American flag. One United States law still in force ought long ago to have been repealed. It was enacted in 1865 when Congress especially desired to be helpful to river and coastal passenger boats. It provided that spaces used for passenger cabins above the first deck above the uppermost full-length deck of a vessel should be exempt from measurement. Under this antiquated law a large share of the extensive cabin spaces which constitute a considered part of the earning space within the many-decked passenger vessels are exempted from measurement and tonnage calculation. Many passenger vessels under foreign flags have a tonnage when measured by the United States rules that is less than their official registered tonnage.

The other main category of vessel measurement rules includes the Suez Canal Rules, and the Panama Canal Rules. The Suez Canal Company, by the concession granted it by the Government of Turkey, was authorized to levy tolls upon the tonnage of the capacity of vessels; and, after the Canal had been in operation for a few years, the rules to be thereafter applied by the Suez Canal Company in determining the tonnage upon which its tolls were to be levied were formulated by a Conference which met in Constantinople in the Autumn of 1873 and which was composed of representatives of the leading European maritime countries. The rules were so drafted as to include in gross tonnage the actually closed-in spaces and to provide for including in net tonnage the spaces actually available for the stowage of cargo or the accommodation of passengers. Warships were also to pay tolls based upon tonnage determined by the same rules.

Shortly before the Panama Canal was opened for traffic, the Panama Canal vessel measurement rules were prepared for the President who, by the authority given him by the Panama Canal Act of August 24, 1912, promulgated the rules as drafted. These rules, like those in effect at the Suez Canal, provided for including in the net tonnage of each vessel its actual earning capacity; and the President, also in accordance with the Act of 1912, prescribed tolls to be paid upon each ton—100

cubic feet—of actual earning capacity. Warships were to pay tolls upon their displacement tonnage at the time of transiting the Canal.

The gross and net tonnage of most commercial vessels when fixed by the Suez or Panama measurement rules is considerably larger than the official registered tonnage of the vessels. This is due in large part to the "shelter-deck" provision in the several national rules exempting from gross tonnage, and thus from net tonnage, the large space under the uppermost full-length deck when that deck is provided with "tonnage openings." As has been explained, the space under the so-called shelter-deck may be sea-proof and may be, and regularly is, used to stow dry cargo. This interpretation of the space under the shelter-deck as being open and thus exempt from measurement was one that the British Board of Trade was unwillingly forced to adopt, because of a decision of the House of Lords, made in 1875, in passing upon the case of the Steamship *Bear* which had tonnage openings in its uppermost deck and which the House of Lords held to be openings that, under the provisions of the Merchant Shipping Act of 1854, precluded the Board of Trade from considering the shelter-deck to be "a continuous deck from stem to stern fastened up and water tight." For some time, the United States authorities refused to adopt the British shelter-deck rule, but in 1915 the American rules were so amended as to exclude the space under the shelter-deck from measurement. As has been pointed out, the American rules also omit from measurement some cabin spaces on passenger vessels that are not exempted by the British and other national rules.

When the Panama Canal Act of 1912 gave the President the authority to fix the Panama Canal tolls and thus to prescribe the rules for determining the tonnage upon which tolls were to be levied, the law provided that if the tolls upon vessels of commerce were based upon their tonnage, the maximum charge should not exceed $1.25 "per net registered ton." When the President acted, he prescribed a toll for laden commercial vessels of $1.20 per net ton, and after fixing the rate of tolls, he prescribed the Panama Rules for measuring vessels to determine the tonnage upon which the tolls were to be paid. A charge of $1.20 per ton upon the net tonnage of most commercial vessels, when measured by the Panama Rules, amounted to more than $1.25 per ton upon the "net registered tonnage" vessels as stated in their official certificate of registration; and, when the question was raised by certain ship owners, the attorney general of the United States, a few months

after the Panama Canal began operation, ruled that as the Panama Canal Rules had not been promulgated when the Panama Canal Act of 1912 was adopted, Congress, in using the term "net registered tonnage," must have referred to tonnage determined by the United States statutory vessel measurement rules then in effect. This ruling made it necessary for all vessels, foreign as well as American, to be measured by the United States National Rules and also by the Panama Canal Rules, and for tolls to be levied that did not exceed the maximum charge of $1.25 per ton upon the tonnage determined by the United States National Rules. This interpretation of the Act of 1912 was of such advantage to the owners of many kinds of vessels transiting the Panama Canal that their opposition to amending the Act of 1912 prevented the President, the Secretary of War (who has charge of the Canal under the jurisdiction of the President), and the Canal administrators from securing amendatory legislation until 1936. Then Congress authorized the President to appoint a special committee to investigate Panama Canal Tolls and Vessel Measurement Rules and make recommendations as to desirable changes. The Committee reported early in 1937; and, in August of that year Congress embodied in legislation the Committee's recommendations, and gave the President definite authority over the measurement of vessels using the Canal and over the tolls to be paid therefor. Certain changes were made in the 1913 measurement rules and the rate of tolls was lowered by the President from $1.20 to 90 cents per net ton, Panama Rules, for laden commercial vessels. Vessels in ballast pay 72 cents per ton. Warships continue to pay tolls of 50 cents per ton of displacement upon transiting the Canal.

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CHAPTER 31

The Suez and Panama Canals

In the discussion of vessel measurement rules in the preceding chapter reference was made to the world's two most important canals. They are important ocean transportation facilities by which international commerce is greatly aided.

THE SUEZ CANAL

The Suez Canal provides the countries bordering on the North Atlantic, the Gulf of Mexico and the Caribbean with a direct route to and from India, the East Coast of Africa, the East Indies and China and Japan. It is shorter by about 4000 miles than the former route around the Cape of Good Hope. The Canal was constructed by a French company, the Suez Maritime Canal Company, that was organized by the famous engineer, Ferdinand de Lesseps, who in 1855 and 1856 secured the necessary concessions from the Sultan of Turkey and the Khedive of Egypt. Construction began in 1859, and the canal was opened for traffic in 1869, at an initial cost of about $80,000,000. There have been subsequent enlargements of the channel and additions to facilities, and the total present investment in the Suez Canal is somewhat more than $200,000,000, which sum, however, is only about half the original cost of the Panama Canal.

Although the Suez Canal is owned and operated by a corporation chartered by France, it is in reality an internationally controlled waterway. The concession granted the company in 1856 by the Khedive of Egypt provided that the canal should be open to all shipping "without any exclusive distinction or preference of persons or nationalities." The neutralization of the canal was made more definite in 1888, when eight other European countries joined with Turkey in signing an international convention which declares that the canal shall "always be free and open, in times of war as in times of peace, to every vessel of commerce or of war without distinction of flag." Although Great Britain made some

reservations as to the use of the canal by warships, those reservations were later modified by an additional agreement made with France in 1904.

The Suez Canal is sometimes said to be under the control of Great Britain, because of the ownership by that country of nearly half the stock of the Suez Maritime Canal Company. The company, when organized, provided for the issue of 400,000 shares of stock of which 176,602 shares went to the Khedive of Egypt as a compensation for the concession that had been granted. In 1875 the necessitous condition of the Egyptian Treasury made it possible for the British Government, through Lord Beaconfield, to purchase the Khedive's stock. The investment thus made has proven very profitable to the British Government, but apparently that Government has not sought to control the administration of the canal by the Suez Company. The par value of the company's stock was 500 francs, but recently the par value has been reduced to 250 francs (gold) and the number of shares has been increased to 800,000.

The length of the Suez Canal from Port Said on the Mediterranean Sea to Port Thewik near Suez at the head of the Red Sea is 87 nautical, or 100 English, miles. The construction difficulties were not great, because the country traversed was for the most part sandy and level, there being three depressions in the line of the canal route that were converted into two small shallow lakes and one larger and deeper lake. The depth of the channel when the canal was opened for use in 1869 was only 26 feet 3 inches, which was sufficient for the vessels of that time and for about two decades. Then greater channel dimensions were needed, and from 1887 to the present, by successive enlargements, the canal has been given a depth of 39 feet and appropriate width. Vessels with a draught of 34 feet are allowed to transit the canal. The canal is a tide-level waterway without locks.

The traffic of the Suez Canal increased rather slowly during the first decade of its operation, because the commerce via the Cape of Good Hope, between the North Atlantic and Oriental countries, was transported in sailing vessels. The sailing vessels could not be transferred to the Suez route. The Red Sea, which is over 1200 miles in length, is too calm for navigation by sailing vessels. Steamers had to be constructed for operation via the Suez route. From 1880 to the present, except for temporary checks and recessions, the number of ships trans-

iting the Suez Canal, and their total tonnage, have steadily risen. The traffic reached 33,466,014 net tons in 1929 when the number of ships transiting the canal was 6274. Then adverse business conditions temporarily reduced the traffic, but, in 1937, the peak of 1929 was passed, the traffic for that year being 6665 vessels with an aggregate net tonnage of 36,491,332. There was a temporary decline in traffic, during 1938, to 6171 transits and a net tonnage of 34,418,187. The European War that began in 1939 has again reduced the use of the canal.

The Suez Canal as a result of its large and increasing traffic has been a very profitable enterprise, although the rates of toll charged have not been very high, and are at present much less than they were in the early years of canal operation. For the first 25 years the standard tolls payable by laden commercial vessels were the maximum allowed by the Concession—ten francs per net vessel ton. There was a reduction of 2.50 francs per ton for vessels in ballast. A toll of 10 francs per passenger—5 francs for children from 3 to 12 years of age—was also charged. Warships paid tolls upon the same basis as commercial vessels. During the first few years the revenues of the canal were inadequate to meet expenses, and by recommendation of the International Conference on Tolls and Vessel Measurement Rules called by the Sultan of Turkey in the autumn of 1873, the Canal Company was given permission to add a surtax to its charges until the revenues became adequate to meet expenses. Surtaxes of a decreasing amount were added to tolls for ten years beginning in 1874. Then after charging maximum tolls for a decade the standard charges were reduced from time to time until in 1913 they were 6.25 francs per net ton for laden vessels, with a 40 per cent reduction for vessels in ballast. The original passenger tolls remained unchanged. The World War temporarily reduced the traffic of the Canal and there was some increase in the rates charged. The rates of toll charged in 1936 were 7 shillings, 6 pence sterling per net ton for laden vessels, with a reduction of 50 per cent for vessels in ballast. The large revenues received led to a reduction in charges effective April 1, 1937, when the tolls for laden vessels became 7 shillings per net ton and 3 shillings 6 pence for vessels in ballast. Tolls were also payable in an equivalent amount of Egyptian currency. Effective December 15, 1938, the rates of toll were again reduced, the toll for laden vessels being made 5 shillings, 9 pence, or 28.030 Egyptian piastres, per

net ton. The rate per passenger is also 5 shillings, 9 pence. On vessels in ballast the rate per net ton is one-half the rate for laden vessels.

The revenues of the Suez Canal reached their maximum in 1929. That year the gross receipts were 1,122,892,000 francs. At present, as just stated, the tolls are payable in British (or Egyptian) currency. The gross receipts for the calendar year 1938 were 9,720,900 pounds sterling, or the equivalent of nearly fifty millions dollars American currency. Expressed in dollars the Suez Canal revenues from tolls were double those of the Panama Canal. The Suez Canal Company's operating expenses and its interest and amortization requirements amount to less than half of its revenues, thus making it possible for the Company to distribute to stockholders and other beneficiaries half of its annual receipts. The receipts in 1938 were 1,141,800 pounds sterling less than in 1937, the decrease being caused by the reduction in the rate of tolls and in the tonnage of transiting shipping. Of the dividends distributed, 71 per cent go to stockholders, 15 per cent to the Egyptian Government, 10 per cent to the Founders, 2 per cent to the members of the Administrative Council, and 2 per cent to the employees. The rates of dividends paid are fixed each year by the Company.

THE PANAMA CANAL

The Panama Canal was opened for traffic in August 1914, thirty-five years after the Suez waterway was put in service. DeLesseps having been successful in establishing a shortened ocean highway from the North Atlantic and Mediterranean countries to Southern Asia, the East Indies and Australia brought about the organization of a French company to connect the Atlantic and Pacific countries with a short route via a canal across the Isthmus of Panama. A concession was obtained from Columbia in 1879, and two years later work was started. DeLesseps and the Interoceanic Canal Company of Panama were not successful, and within a decade the Company was insolvent, and construction work was halted. The lack of success was partly due to the failure to understand in advance of construction the problems to be met, and to adopt plans by which the problems could be successfully solved. However, if the Panama Company had had the prescience to adopt the type of canal that was later adopted by the United States Engineers, with the

knowledge that had been gained during the twenty years that elapsed after the French had begun their work, the Company would not have been able to carry their enterprise through to a successful conclusion. That mosquitoes were the agents of yellow and malarial fever infection was not known until after the French Company had been defeated by the handicaps and costs caused by disease. When, in 1904, the United States began construction, the mosquito theory of yellow and malarial fever transmission was known; and, fortunately though against the judgment of some distinguished engineers, the correct type of canal was adopted.

The Isthmus of Panama, where the Canal is located, is forty miles wide from shore line to shore line, and extends, not north and south as one would naturally suppose, but from southwest to northeast. The Pacific terminus of the Canal at Balboa, near the city of Panama, is some 20 miles east of the Atlantic end of the Canal at Cristobal near the city of Colon. The continental divide is nine miles wide and consists of a range of hills, the southern side of which is only a few miles from the Bay of Panama. Between the continental divide and the Caribbean Sea at Colon there was a wide swamp drained by the Chagres River. From four to five miles from the Caribbean the low Gatun range rises out of the swamp and extends roughly parallel to the sea. Through this low range the Chagres River cut an opening about a mile and a half wide, at Gatun. The Canal was constructed by excavating a sea-level channel from Cristobal on the Caribbean four miles to Gatun, by the construction at Gatun of a huge dam, with a crest 115 feet above sea-level, that closed the opening in the Gatun range and created a lake extending to the Continental Divide. At Gatun there are three large locks by which vessels pass between the sea-level channel and the Gatun Lake, the surface of which is at varying stages of the lake from 82 to 87 feet above the sea. Through the continental divide there is a cut that extends the ship channel from Gatun Lake through the divide to Pedro Miguel where there is one lock. Somewhat less than a mile south of Pedro Miguel a dam was constructed at Miraflores that formed a small lake. Two locks at the dam provide for the passage of vessels between Miraflores Lake and the tide-level canal that connects Miraflores with the those via Panama.

From this description it will be seen that the summit level of the

waterway is carried from Gatun a few miles from the Caribbean to Pedro Miguel, a comparatively short distance from the Pacific, and that for more than two-thirds of this distance the channel is in a lake. This so-called "terminal-lake" canal project solved the problem (that was not solved by the French company) of protecting the Canal against the flood waters of the Chagres River which might have made impossible the maintenance of a sea-level canal across the wide swamp to the continental divide. The thought of constructing a sea-level canal at Panama—to make it the "Strait of Panama"—was fascinating. De Lesseps set out to create a sea-level canal, but soon realized that the time required for construction and the cost would be prohibitive. He then decided upon a sea-level canal from the Caribbean to the continental divide at Gamboa. There were to be locks at Gamboa and at the south side of the divide, connected by a canal well above the sea-level channel at Gamboa and the tide-level portion between the divide and the Pacific. How this section of the canal could have been supplied with sufficient water for the lockage of vessels is uncertain.

Although the Panama Canal was ready for operation in August, 1914, ten years after construction work was begun by the United States, after a few months of operation slides at Culebra in the continental divide closed the channel, and it was seven months before the obstructions were so removed as to permit the resumption of traffic. Early in the excavation of the cut through the continental divide, it was found that the slopes of the cut especially near the southern end of the cut were of unstable materials that caused slides. The slides, however, were not so serious as the breaking away and gradual settling into the cut of large sections of the banks as the excavation of the cut removed the lateral support of the unstable banks composed of strata that had been disrupted by volcanic action in a late geological period. The cost of creating and maintaining the Culebra cut (which has been named the Gaillard Cut) has been much greater than was anticipated. However, by continuous work the channel through the divide has not only been maintained but has been greatly improved by being widened and deepened and by a reduction of curvature. Along with this has gone the work of giving the banks greater stability.

Up to the time of its opening the Panama Canal had cost the United States about $400,000,000 including the $40,000,000 paid the Panama

Canal Company for its railroad and other property, and the $10,000,000 paid the Republic of Panama for the concession giving the United States jurisdiction over the Canal Zone. At the present time the net investment of the United States in the Panama Canal and Railroad—total investment less accumulated depreciation—is about $540,000,000. This does not include the $70,000,000 or more that was spent up to 1939 for fortifications and other military purposes by the Army and Navy. Large additional expenditures are being made to provide greater protection for the canal.

The United States had both commercial and naval reasons for constructing the Panama Canal. Her commercial purpose was not altogether selfish. The Canal made possible international sea-ways beneficial to the trade and shipping of many maritime countries, and the canal at Panama, like the one at Suez, is used under like terms and conditions by the vessels of all nations. The distances by sea around South America being much greater than those around Africa, ocean routes were shortened more by the Panama Canal than by the Suez Canal. The distance by ocean from New York to San Francisco via the Straits of Magellan is 13,135 miles; while by way of the Panama Canal it is only 5262. From New York to Valparaiso, the principal port of the West Coast of South America, the distances via the Magellan and Panama routes are 8380 and 4663 miles. From New York to Sydney, Australia, via the Cape of Good Hope, Adelaide and Melbourne, the distance is 13,743 miles, while via the Panama Canal and Tahiti the distance is 9811 miles. The value of the Panama Canal to the traffic between Europe and the Pacific seaboard of North and South America and certain trans-Pacific countries may be indicated by a few illustrations. The distances from Liverpool via the Panama Canal are shorter than those via the Straits of Magellan by 5666 miles for points on the west coast of the United States and Canada, and by 1540 to Valparaiso. The route from Liverpool to Wellington, New Zealand, via Panama is shorter by 2424 miles than the one via Suez and the ports of Adelaide and Melbourne, but for Shanghai, Manila and Hongkong the Suez route is shorter than the one via Panama. When the schedule of tolls to be charged vessels transiting the Panama Canal was fixed careful consideration was given to the savings that vessels could make by using the Canal, and the charges were made low enough to minimize the diversion of traffic to other routes than those via Panama.

Although the major reason for constructing the Panama Canal was to break through the American barrier to the commerce between the Atlantic and Pacific, the benefit that the Canal would be to the United States navy was an important consideration. While the Canal does not unify the United States Atlantic and Pacific naval fleets, it makes possible much closer cooperation and reduces the size of the fleets that would otherwise have to be provided and maintained. This cooperation, moreover, has been made much more effective by the establishment at the Canal Zone of well equipped naval and air bases, and by the maintenance there of a naval reserve force of moderate size. The Canal is being strongly fortified.

By the Hay-Pauncefote treaty of November 18, 1901, with Great Britain, and by the treaty of November 18, 1903, with the Republic of Panama, the Panama Canal has been neutralized, as was the Suez Canal by the treaty adopted by the European powers in 1888. The United States has agreed that "the Canal shall be free and open to the vessels of commerce and of war of all nations ... on terms of entire equality." The treaties with Great Britain and the Republic of Panama provide that the United States "shall be at liberty to maintain such military police along the Canal as may be necessary to protect it against lawlessness and disorder." In effect, the United States has assumed a two-fold unilateral obligation. All vessels, American and foreign, are to use this American-operated waterway "on terms of entire equality" as regards tolls and other requirements; and the neutrality of the Canal as a waterway for the use on like terms of the "vessels of commerce and of war of all nations" is to be maintained by the United States. The military establishments and naval bases that have been established by the United States in the Canal Zone have been placed there in the interest of national defense; but by doing this the United States has put itself in a position to carry out its double obligation to the nations of the world of preventing lawlessness and disorder at the Canal and of maintaining the neutrality of the waterway.

The traffic using the Panama Canal is large and is certain to increase with the growth of international commerce. As the Canal began operations just at the beginning of the World War, its traffic was relatively small for the first five years, then followed ten years of such rapid increase in the number and tonnage of transiting vessels that, in 1929, 6430 merchant ships, having a net tonnage (by the Panama

measurement rules) of 30,353,189 tons, carried 31,450,493 long tons of cargo through the Canal. The business depression that began near the end of 1929 caused a temporary decrease in traffic, both at Panama and at Suez. The recovery at Suez was more rapid and larger than at Panama, presumably because the business depression in the United States has been longer and more severe than in most other countries. During the calendar year 1938 the traffic at Panama suffered a temporary decline, but in 1939 the transits rose to 5928 vessels with a net tonnage of 27,123,183 tons, and a total cargo tonnage of 29,081,360 long tons. The receipts from canal tolls in 1939 were $23,707,245. The business conditions during 1938 caused the temporary decline in tonnage and revenue, but the general trend of traffic at the Panama Canal, from the beginning to the present, indicates that during the next 20 years the net tonnage of transiting merchant vessels will reach 40,000,000 tons per annum. A study of the trend of traffic at Suez during its long period of operation warrants this prediction as to the Panama Canal.

In fixing the tolls and other charges for the use of the Panama Canal, the purpose of the President and authorities in charge of the Canal has been to put the enterprise upon a self-supporting basis. It has not been and will not be the policy of the United States to make a profit from the Canal. For the first decade and a half while the traffic was relatively small, the revenues were less than the sum of the operating expenses, maintenance, and interest on the investment. The present gross revenues of the entire Canal enterprise, including the operating income of the Canal, the business activities connected therewith, and the Panama Railroad Company, are sufficient to cover operating and maintenance expenses, current depreciation, and interest at 3 per cent per annum upon the present net property investment in the enterprise as a whole. For the calendar year 1939 the receipts from tolls were $23,707,245, but the net income of the Canal enterprise from other sources, including that from the operation of business properties, from certain miscellaneous receipts, and from the Panama Railroad Company, brought the total net revenues to nearly $26,000,000. The Special Committee on Panama Canal Tolls and Vessel Measurement Rules, in its Report to the President, in February 1937 made the following estimate of the expenses that should be met annually from revenues from tolls during the next few years:

Interest at 3 per cent, Canal investment of $475,214,870	$14,256,446
Net Canal operating expenses, not including depreciation	8,100,000
Lock Overhaul	325,000
Depreciation reserve for Canal property, other than business properties and property of Panama Railroad Company	1,500,000
Surplus fund for normal replacements and betterments starting with	2,000,000
Total	$26,181,446

The net income of the Panama Canal and Panama Railroad enterprise as a whole, as is shown by the foregoing figures, will be sufficient with the future growth of traffic to cover interest on investment, operating expenses, depreciation on property, and normal replacements and betterments. The rates of tolls that were recommended by the Special Committee on Panama Canal Tolls and Vessel Measurement Rules, and that were put in force by the President by proclamation effective March 1, 1938, will yield the revenues needed for the present, and the receipts will increase with the growth of traffic. As stated in the preceding chapter, the tolls are 90 cents per net ton for laden merchant vessels, and 72 cents per net ton for vessels in ballast, the tonnage to be determined by the Panama Canal Rules as amended by the President in 1937, upon the recommendation of the Special Committee above referred to. Warship tolls were not changed, and are 50 cents per ton of actual displacement.

From time to time, the question of the desirability of constructing a Nicaragua Canal is discussed. Some persons think that for naval reasons there should be two trans-Isthmian canals. The argument seems to lack force, in view of the fact that if an enemy could cripple one canal it could do the same to the other. To protect two canals against damage would be more difficult than to protect one; and, as a Nicaragua Canal would be much longer than the one at Panama, it would presumably be less easily protected. For commercial reasons, there will be no need for a second canal for many decades The Panama Canal, as it is at present, could handle double the traffic it now has; and, by continuing the enlargement that is being made to its channel through the continental divide, and by adding a third set of locks, of larger dimensions, the traffic capacity of the waterway would be fully three times the amount of tonnage now being served. The factor that will determine the number of vessels that can be served by the Canal is the supply of water available for lockage during the dry season, when for five months

there is very little rainfall. The water supply contained in the large lake created by the Gatun Dam has been reenforced by the construction of the Allahuela Dam by which the water of the upper portion of the Chagres River Valley is impounded in a spacious reservoir that can be drawn upon to supplement the supply in Gatun Lake during the dry season. Moreover, at the Allahuela Dam (it has been named the Madden Dam), as well as at the foot of the large spillway at the Gatun Dam, there is an electric power plant. The two plants provide the Canal Zone and the cities of Colon and Panama with ample electricity for lighting and other purposes. The housing, sanitary and other living conditions at the Canal are so favorable as to make the Canal Zone a very pleasant place to live.

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CHAPTER 32

Organization of Water Carriers

The water transportation services previously referred to are operated by companies ranging in size from the smallest local coastwise and inland carriers to huge ocean transportation combinations. Great ocean lines have been developed partly by direct expansion of services and acquisition of other fleets and partly by consolidation of lines which originally were financially independent.

STEAMSHIP LINES AND COMBINATIONS

The motivating influences of steamship consolidation have variously been the desire to acquire additional services, vessels and terminal facilities, to control competition, to strengthen financial structures and enhance aggregate profits, and to attain the ambitions of leaders in the shipping industry. There have also been outstanding instances of combinations or consolidations which were urged, if not compelled, by governments interested in more effective application of subsidies, in improved shipping services and the relationship between merchant shipping and naval or military strength.

The development of great ocean steamship consolidations has been confined mainly to certain foreign maritime nations. The Peninsular and Oriental Steamship Company has since 1840 grown into a vast British consolidation the combined tonnage of which is estimated at from about 2,176,000 to 2,500,000 gross tons.[1] The Royal Mail Steam Packet Company, chartered in 1839, grew until in 1927, and after it had acquired the White Star Line and its subsidiaries, it controlled a combined fleet of about 2,695,000 gross tons. This great shipping combination, however, underwent corporate and financial reorganization in 1932, and in 1933 it sold the White Star Line to the Cunard Steamship Company. The Cunard White Star Company has, also, become a truly large shipping consolidation with a gross tonnage in 1937 of 876,500 tons.

[1] Poors Manual (1938) states gross tonnage of company and allies at 1,986,761.

The Furness-Withy, Ellerman, Alfred Holt, Canadian Pacific (owned by the Canadian Pacific Railway), and other large British-flag services are well known in ocean shipping.

The Hamburg-American Line, before the World War, controlled 1,360,000 gross tons of shipping and it has since been rebuilt so that this line and its affiliates control over 900,000 gross tons. The North German Lloyd similarly has control, directly and through affiliates, of over 800,000 gross tons, and the two great German lines are parties to an agreement which limits competition. The largest French consolidation, the Campagnie Generale Transatlantique, operates over 725,000 gross tons, and is affiliated with several other French companies by agreement and interlocking directorates. Three large Italian lines operating on the Atlantic have been merged into The Italian Line, and the other Italian ocean shipping services have been organized under three companies. The four Italian companies control about 2,174,000 gross tons of shipping. The two principal Japanese lines—Nipon Yusen Kaisha and Osaka Shosen Kaisha—control about 789,000 and 726,000 gross tons, respectively, and are parties to a pooling and management agreement.

American steamship services have undergone a certain amount of consolidation, but far less than in other leading maritime countries or in the railroad industry of the United States. The International Mercantile Marine Company, organized in 1902, brought together under common financial control, 1,034,884 gross tons of shipping consisting mainly of foreign-flag vessels. By 1915 its combined gross tonnage had risen to 1,201,000, but in 1924 a number of foreign-flag vessels of the Leyland Line were sold and in 1927, when the White Star Line was sold, its combined gross tonnage had dropped from over 1,000,000 to 459,604. Many additional sales of foreign-flag vessels have been made since then. However, under a general policy of acquiring American-flag tonnage, the Roosevelt Steamship Company and the United States Lines have been affiliated with the International Mercantile Marine Company. Only 170,501 gross tons of shipping were owned December 31, 1938, but additional vessels were operated for the United States government.

The foreign trade merchant marine of the United States is operated mainly by fleets of moderate size. The Atlantic, Gulf and West Indies Steamship Company is the center of a combination of foreign trade and

coastwise lines, with a combined gross tonnage on December 31, 1937, of 232,347, but there are many independent American ocean steamship companies. Concerning these line services, the Maritime Commission has stated that "the need for consolidation is suggested by comparison with the large lines of other nations. Several of the foreign fleets are larger than our entire subsidized merchant marine. . . . The same factors which produced these large foreign fleets seem to be working inexorably toward a reduction in the number of American lines engaged in foreign trade." [2]

The coastwise service to outlying possessions and those of the intercoastal, coastwise and Great Lakes trades are also performed by fleets of moderate size. Coastwise shipping along the seaboards and locally, moreover, includes various small fleets of steamers and barges. Shipping on the rivers and inland canals is provided by many fleets of barges and self-propelled craft. Many of these carriers operate but a few vessels, but some of them are equipped with substantial fleets. The Inland Waterways Corporation, which is the largest common carrier operating river services in the United States, owns 276 steel cargo barges with a cargo capacity of over 400,000 short tons, and also 28 steel tow-boats, 3 harbor tugs, and miscellaneous equipment.[3]

BUSINESS ORGANIZATION OF OCEAN STEAMSHIP LINES

The business organizations maintained by ocean lines vary with the volume and character of their traffic, the number and kind of services performed, the number of American and foreign terminal ports and ports of call served, and the views of owners and executive officers concerning economical and efficient management.

Corporate and Financial Departments

The duties of the Secretary's Department are similar to those usually performed by the Secretary of a railroad. A large line may have a Law Department which performs necessary legal work, including litigation in courts, proceedings before the Maritime Commission and legal advice as to claims, taxes, contracts and other activities. There may be a Pur-

[2] Economic Survey of American Merchant Marine, pp. 28-29.

[3] Secretary of War, Annual Report (1938), p. 18.

chasing Department under the supervision of a Purchasing Agent or Supervising Purchasing Agent.

The Treasurer's Department, consisting of a Treasurer and a staff of subofficials and employees, has charge of the company's routine financial affairs, within the limits set by the Board of Directors, and is concerned with the issue of securities, the management of the company's banking and foreign exchange relations, the receipt of revenues from all sources, the keeping of cash accounts and the disbursement of funds upon voucher or other authorization. Its routine affairs on board ship, in port or at sea, are conducted by pursers.

The Accounting Department headed by the Comptroller, or an otherwise designated executive, contains a varying number of subofficials, auditors, and other employees. The department's activities include the auditing of revenue and expense accounts, the signing of vouchers authorizing disbursements, the keeping of accounting records, the preparation of financial statements, balance sheets and statistics; and, in general, the same duties as are performed in the Accounting Department of a railroad.

The Freight Traffic Department

Traffic work requires a relatively large organization that is usually divided into two parts, one for freight and another for passenger business, each with its manager, while a smaller company or one less extensively engaged in the passenger business will have one manager in charge of both freight and passenger traffic.

The Freight Traffic Manager not infrequently ranks as a Vice President because the department under his control is one of great importance to the successful operation of a steamship line. Under the manager there may be one Assistant Freight Traffic Manager in charge of outbound freight, and another in charge of inbound freight, these officials being designated sometimes as Outbound and Inbound Freight Managers or as General Freight Agents.

Freight rates are fixed by the Freight Traffic Manager and his assistants and require the compilation of reliable information as to commercial needs, active and potential tonnage, operating costs and other matters that will be considered in a subsequent chapter on rate-making. The rates of many ocean lines are made in accordance with

conference agreements, and the Freight Traffic Manager or his assistants represent their company in negotiations with other lines.[4] The Freight Traffic Manager sees that the proper instructions as to tariffs are given to the company's freight agents, district officers, solicitors and brokers.

In the development of traffic, he supervises the agents of the line at the ports, at interior district offices, and at offices in foreign countries. Should he decide that the line's traffic warrants the running of additional steamers, or that the company's interests would be furthered by establishing services over routes or at ports not formerly served by the line, he makes appropriate recommendation to the owners.

The Outbound Freight Traffic Manager, or a General Freight Agent, cooperates with the Freight Traffic Manager in making rates and in formulating traffic development policies. He also has charge of the booking of cargo with a view to providing necessary space for fuel, stores and supplies. When cargoes are plentiful the most efficient and profitable use will be made of the vessel's carrying capacity, and the division between heavy and light or measurement cargo will be such as to produce a maximum lading.

The masters of vessels and agents at foreign ports receive instructions from the Traffic Department. Bills of lading must be checked by the traffic office and prepared in final form and signed; the ship's manifest, which contains an accurate list of the vessel's entire cargo, must be prepared and the documents needed for the clearance of vessels at the customhouse must be prepared. Outbound freight traffic is solicited personally and by advertising, and arrangements are made with railroad lines for the handling of through traffic.

Inbound freight traffic is sometimes placed in charge of an Inbound Freight Traffic Manager who is subordinate to the Freight Traffic Manager, but even in case of a large steamship company, the inbound traffic organization is usually smaller than the outbound, because most of the solicitation of inbound freight is done abroad by the branch offices or agencies who book return cargoes, sign bills of lading and prepare manifests and clearance papers at the foreign ports.

The Inbound Freight Traffic Manager of a large organization may have under his direction a number of inbound freight solicitors who

[4] See Chapter 36.

endeavor to obtain freight from abroad. It is necessary, moreover, to assemble and prepare the documents needed for the entry of each vessel at the customhouse and arrangement must be made with the customhouse for the release of imported cargoes, or for their storage, their transshipment to other vessels for reexportation, or their transportation under customs regulations to inland destinations. Inbound bills of lading must be examined and freight calculations made and arrival notices, freight bills, and delivery orders must be prepared.

The Passenger Traffic Department

The Passenger Traffic Manager, who heads the Passenger Traffic Department, is concerned with the making of passenger fares, with the attendance of the ocean conferences through which groups of steamship lines cooperate, and with the enforcement of passenger line conference arrangements to which his company is a party. His duties also include the classification of passenger services, the formulation of traffic development policies, and recommendations as to the acquisition of suitable passenger vessels, the expansion of the line's passenger services and the provision of adequate port facilities. He is aided by an Assistant Passenger Traffic Manager.

The Passenger Traffic Department of lines which subdivide passengers into classes [5] may be divided into separate booking departments for each class of service, or into a Cabin Department which has charge of all classes of cabin passengers, and a Steerage Department. Through the sub-departments having charge of cabin passengers, the solicitation and booking of passengers, advertising and publicity work, the landing of passengers for inland destinations, the preparation and distribution to agents of tickets, forms, etc., and other matters concerned primarily with the cabin classes are attended to. Special provision may be made for the organizing and management of special cruises. The Steerage Department looks after the steerage traffic of the line. Sometimes it utilizes the personnel of the Cabin Department to avoid unnecessary duplication of employees, but it may have its own staff of booking, landing, railroad-booking and other necessary clerks. All subdivisions of the Passenger Traffic Department have the cooperation of the line's foreign branch offices or agencies, its passenger agents, district offices or outport branch offices, and of the pursers of its vessels.

[5] See Chapter 38.

The Operating Department

The Operating Department of a large ocean line is usually supervised by a General Manager of Operations, and is subdivided into four or more subdepartments. Together they comprise the largest department of the line's business organization.

The Wharf Department

The Wharf Department of the line's operating organization is administered by a General Wharf Superintendent, whose staff includes a Superintendent for each pier, a freight-handling force and a clerical staff, and, in case of passenger lines, a baggage department. The Wharf Department of a small company, operating at but a single pier, may be managed directly by the Pier Superintendent.

In the handling of freight the Wharf Department: (1) Has charge of the receipt of cargo from shippers or their agents. Packages as received at the piers are tallied and measured or weighed, measurements are converted into tons, dock receipts are issued, notations of damage are made, and dock sheets are prepared and sent to the Freight Traffic Department. Each Pier Superintendent has a staff of receiving clerks, report clerks, tallymen, and dock sheet clerks for the performance of these duties. (2) Has charge of the loading of cargoes into the vessels' holds. The Freight Traffic Department "stows the ship on paper," that is, endeavors so to select cargo as to provide the most profitable available loading for each voyage and orders shipments to the pier with that purpose in view, but the stowage of cargo in the vessel is a primary function of the Wharf Department. This work is usually performed under contract by a master stevedore, who employs the necessary longshoremen and foremen, organizes them into gangs, and directs their activities. A Wharf Department may, however, have stevedores as a permanent part of its staff or may require Pier Superintendents to do the stevedoring. Cargo is tallied as it is loaded into the vessel's holds or on to lighters. (3) Has charge of the discharging of cargo from vessels by longshoremen and foremen directed by a contracting stevedore or by the Wharf Department's stevedore or Pier Superintendent. (4) Has charge of the delivery of cargo to consignees. Freight is tallied as it is unloaded from the vessel and, upon presentation of delivery orders issued by the Freight Traffic Department, clerks of the Wharf Department

make delivery to the consignee or his agent upon the signing of a delivery receipt. (5) Has charge of necessary moving, rehandling, stacking and sorting of freight on the pier or wharf, either by longshoremen or by permanently employed freight handlers.

The handling of baggage on the piers of a passenger line is one of the duties of the Wharf Department. There are a baggage master and perhaps an assistant baggage master, and usually a baggage clerk for each class of passenger service, with the necessary number of longshoremen.

The Marine Department

The Marine Department is also a part of the Operating Department. In a large organization the head is the Marine Superintendent who may be assisted by an Assistant Marine Superintendent or Port Captain. Some companies place the "Port Captain" in charge of the entire Marine Department. The duties of these officials include the employment of masters and officers, the recruiting of deck crews at the home port, the study of ship performance, the sending of orders to vessels, the arrangement of vessel inspections, providing for necessary ships' stores, the examination and approval of repair bills and the supervision of vessel repairs, and the preparation or acquiring of the crew list and other vessel documents.

There may be an Assistant Port Captain to supervise the loading of vessels so that they will ride safely at sea. The Marine Department includes the nonengineering personnel aboard ship; the master and deck officers, cadets, wireless operators and the seamen, who together constitute the so-called Deck Department, and also the pursers, surgeons, and their assistants.

The Engineering Department

The Engineering Department of some shipping companies is a subdivision of the Marine Department, but the more common practice is to maintain a separate department as a subdivision of the Operating Department. The officials at the head of the Engineer Department of a large line frequently are the Superintendent Engineer and an Assistant Superintendent Engineer or Port Engineer, but the "Port Engineer" of a smaller line is apt to serve as department head. The principal functions of these officials, aside from general executive supervision, are to

pass upon extensive repairs of engines and supervise them as they progress either in subsidiary or outside shops, to approve requisitions, to make or approve appointments of the chief engineers and assistant engineers aboard ship, to examine marine engines and arrange for inspections, to make arrangements for the employment of the engine-room force at the port, and generally to supervise the performance and maintenance of the engines in port and at sea.

The Engineer Department has a small clerical shore staff. The work of the Department afloat, including the actual operation of the engines is directed by the chief engineer of the vessel, who is assisted by three or more assistant engineers. The engine-room force includes oilers, water tenders, stokers and trimmers or firemen and coal passers, jetmen, pumpmen, electricians, machinists, deck engineers and others.

The Victualing or Steward Department

The general functions of the Victualing Superintendent or Port Steward and the Assistant Port Steward are to see to the contentment of those aboard ship and to reduce waste in the use and purchase of the food supplies, linen, silverware, and other supplies needed by the Steward's Department aboard ship. They make or approve appointments, check requisitions and inventories, keep informed as to prices and markets, supervise their buyers, check stocks as they are taken aboard at the home port, order replacements of linen, silverware and similar supplies, receive and examine steward's reports, and maintain records including an efficiency record or statement.

The staff on shore consists of buyers and a clerical force. When afloat, in case of a large passenger liner, it includes a large personnel which is subject to the direction of the vessel's chief steward. The chief steward may be assisted by one or more assistant chief stewards. The position of the chief steward may vary from that of chief cook on a small freighter to that of a responsible supervisor and diplomat on a large passenger steamer.

Other Subdivisions of the Operating Department

The business organization of an ocean line sometimes includes a Construction Department which, under a Chief of Construction, is concerned with the planning and construction of new vessels or the reconditioning of old vessels in shipyards. It may contain a Chartering

Department, which attends to the chartering of such vessels as may be needed to supplement a line's fleet. There may be an Insurance Department which is entrusted with the placing of the necessary marine insurance and with the adjustment of insurance claims.

Business Organization of Coastwise and Inland Carriers

The business organizations of common carrier steamship lines operating in the coastwise trade with Puerto Rico and the Hawaiian Islands is similar to that of lines of comparable size operating in the oversea's foreign trades. Those of lines operating in the mainland coastwise trades and on the Great Lakes also resemble the business organizations of ocean lines but they are in many instances less extensive. Some of them consolidate secretarial and treasury work under a single Secretary-Treasurer, and some do not maintain a permanent legal department. They are, moreover, not required to arrange for foreign agents or branches. The business organization of one of the large common carrier coastwise lines provides for a President and Chairman of the Board of Directors; a Vice President and an Assistant to the Vice President; a Secretary-Treasurer; a Comptroller and an Auditor; a Passenger Traffic Manager and a General Passenger Agent; a Freight Traffic Manager, General Freight Agent and Assistant General Freight Agent; a Freight Claim Agent; a Purchasing Agent; and titled operating officers including a General Superintendent, Marine Superintendent, Superintending Engineer and Port Steward.

Many private industrial and contract services, however, are operated in the coastwise and Great Lakes trades. As they are engaged mainly in carrying bulk cargoes the amount of their billing, accounting and treasury work is reduced greatly and as they are not common carriers no extensive traffic department is needed. Their organization consists very largely of an operating department, and, this is reduced in size because the extensive use of specialized wharf machinery and the stowage of cargo in bulk reduces the number of wharf employees needed for handling, stowing and discharging cargos. The operating department of a large, independent Great Lakes bulk carrier [6] under the supervision of a General Manager normally contains a Supply Department, various branch offices and a Marine Superintendent who in

[6] Johnson, Huebner and Henry, Transportation by Water, p. 261.

general corresponds to the Manager of Operations of an ocean line. He supervises the activities of four departments—Victualing, Engineering, Marine and Repairs—which are managed respectively by a Port Steward, a Fleet Engineer, a Fleet Captain and a Superintendent of Repairs.

The business organization of most river and inland waterway carriers is simpler than that of the larger coastwise, Great Lakes or ocean carriers. Although some of them operate large fleets, most of them are relatively small concerns and their vessels are smaller, less complicated and less costly. Cargo stowage aboard river barges is a relatively simple matter and but few river craft carry passengers. The organization of common carrier freight lines serving many river ports is in some respects like that of a railroad, while in others it resembles that of a coastwise, Great Lakes or ocean carrier. The organization of the Inland Waterways Corporation, which is the largest river carrier of this type, includes a President who also serves as Chairman of certain advisory and managerial boards; and Assistant to the President; a Secretary-Treasurer and an Assistant Treasurer; a Traffic Manager and various additional titled traffic officers; a General Purchasing Agent; a Comptroller and an Auditor of Freight Accounts; a Freight Claim Agent; and an operating organization. Its general operating officers are the General Operating Manager, a Superintendent of Terminals and a Superintendent of Maintenance. The Corporation's services are subdivided into four operating sections of varying lengths, and an additional operating division,[7] within which there are terminal or pier superintendents and the personnel engaged in operating its numerous cargo barges and other equipment. The Corporation also employs general agents, commercial agents and otherwise designated representatives at various points both on and off the river routes served by its barges.

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CHAPTER 33

Ocean Freight Forwarding and Freight Brokerage[1]

Ocean freight forwarding refers to the actual forwarding and handling of shipments by forwarders acting as agents for ocean shippers, while ocean freight brokerage refers to the booking of cargoes or the engaging of freight by freight brokers; but in practice the two services are frequently performed by the same concern. Although there are many freight brokers who do not perform forwarding services, the ocean freight forwarders found at all large ocean ports and at some interior points perform a forwarding and also a freight brokerage business.

NATURE OF SERVICES PERFORMED

As freight brokers the ocean freight forwarders assist the steamship companies in securing freight. The economic value of the ocean freight brokerage business does not, however, end with the securing of freight for the steamship lines. Many manufacturers and shippers, particularly those located in the interior, depend upon ocean freight forwarders and brokers to keep them fully posted on ocean freights and services and to engage their cargo space for them. The difficulty of obtaining current ocean freight rates, subject as they are to sudden fluctuations, and of engaging space was considered so great by many shippers during the World War conditions as to induce them to pay the brokerage fee which some of the steamship lines for the time being refused to pay, or would pay only to such forwarders as agreed to become members of a specified freight brokers' association. Importers also find ocean freight forwarders and brokers a convenient source of information regarding ocean freights on imported cargoes.

When acting as ocean freight forwarders these concerns, serving as agents of shippers who prefer not to handle their export shipments at

[1] The first three sections are reproduced from G. G. Huebner, Ocean Steamship Traffic Management, Chap. VI, with revisions and additions.

the ports of exports and beyond, take entire charge of an export shipment either from point of origin to final destination or throughout any part of the voyage or trip. In doing so they act as port representatives who receive the shipments consigned to them, make the necessary arrangements with rail and ocean carriers, have the shipment carted or lightered, see that it gets aboard the vessel, attend to the preparation of the shipping documents described in Chapter 35 and to any trade formalities that may arise at the ports, pay freight and insurance premiums if so instructed, clear cargoes through the customhouse, and generally attend to the transportation and shipping services incident to an export or import transaction. Whenever it becomes necessary to store freight after arrival at the port they make arrangements for storage. They frequently not only act as representatives or agents at the port of export, but also provide a through freight service including delivery at inland destinations in foreign countries.

Ocean freight forwarders also perform a service to the shipper when they quote through freight rates to a foreign destination. They stand ready to quote a freight charge that will carry the export shipment through to interior destinations in foreign countries. Interior destinations to which ocean freight forwarders will not quote through rates are exceptional.

Forwarders are, moreover, in a position to offer reduced rates on small packages which if shipped directly by the shipper in the ocean freight service might have to pay the relatively high minimum freight charge provided for in the bills of lading of many steamship companies. By combining the small packages of a number of shippers, freight forwarders may quote rates on package freight that result in a saving to the individual shippers and at the same time yield a profit to the forwarder. Ocean freight forwarders when handling package freight are performing an international express service. The difference between carload and less-than-carload railroad rates and the privilege of shipping carload lots of mixed freight also enable freight forwarders at times to forward export freight from interior points to the ports of export at rates which afford a saving to the individual shippers while yielding a profit to the forwarders. Some of the ocean freight forwarders have established offices at interior points, both to reach interior exporters more directly and to consolidate shipments into carload lots.

Ocean freight forwarders render a further service to shippers who

may wish freight charges to be collected from the consignee at destination. An ocean freight forwarder may forward shipments on a collect basis, even though he is required to prepay the freight demanded by the steamship company, thus carrying the shipper until the foreign agent of the forwarder has collected the freight from the consignee at destination.

They also endeavor to handle to the best interest of the export shipper such goods as are refused by the consignee. When instructed by the exporter they undertake to provide the marine insurance desired by him, thereby relieving him of the trouble of obtaining insurance.

Some forwarders give financial assistance to exporters in the United States and foreign consignees abroad. Shippers may arrange with their forwarder to advance the invoice price of their shipments, the forwarder then collecting from the consignee either through his foreign agent at destination or by means of drafts handled through the regular international exchange bankers.

The financial work of the regular express companies who conduct a foreign express and forwarding business also includes the issue of travelers' checks, foreign money orders, and letters of credit; the transfer of funds by telegraph; and the operation of a "foreign postal remittance" service for the remittance of money to persons not located near a bank.

Some of the ocean freight forwarders are engaged in foreign trade, as distinct from shipping, and give trade information useful to their customers in buying or selling goods abroad. Some act as foreign purchasing or selling agents.

BUSINESS ORGANIZATION OF OCEAN FREIGHT FORWARDERS

The business organization of ocean freight forwarding concerns is subject to so many variations that it is impossible to construct a single organization chart that conveys a comprehensive view or is in all respects typical. The large forwarding companies vary in organization with the volume of business handled, the extent to which they specialize in shipments to particular parts of the world, the kind of services offered and the differing views of its firm members or higher officers as to how its forces can be made most effective. There are also smaller

forwarding concerns with less extensive organizations than that indicated in the accompanying diagram.

The main office of most of the ocean freight forwarders is located at a seaboard port, and the larger forwarders have agents or branch offices at other ports to facilitate the routing of inland freight through more than one port and to share in the freight originating at several ports of export. Forwarders also have agents or branch officers at various interior points where export freight originates. This enables them to get into closer touch with interior manufacturers and exporters and to consolidate less-than-carload lots of export freight. An ocean freight forwarder located at the seaboard may have an "overland department" at Chicago or other interior points to handle overland traffic routed through the ports of the Pacific Coast. Some concerns known as interior forwarders have their main office at an interior point, and agents, representatives, or branch offices at ocean ports.

American ocean freight forwarders and express companies engaged in the international express or forwarding business handle most of their business abroad through foreign concerns, but some have their own branch offices or agents at a limited number of principal foreign cities. Most American forwarders enter into agreements with foreign freight forwarders or "spediteurs" and consign to the foreign agent all freight or express matter forwarded to the territory covered by such agent, who obligates himself to handle such consignments and also to ship through the American forwarder the freight and express that he dispatches to the United States, and that is not otherwise specifically consigned by the exporter.

The ocean freight forwarding and foreign express businesses differ from the domestic express business in that no exclusive time contract to handle all shipments is entered into with steamship companies. Forwarders, like other shippers, route their consignments via the first available steamer. Such time contracts as have been entered into by express or forwarding and steamship companies are mainly in the coastwise and Great Lakes business, where the number of available steamship lines between two points is small, but the sailings of a particular line are frequent.

The main office of the typical large ocean freight forwarding organization shown in Chart No. 1 is assumed to be located at the port of New York. The members of the firm, of whom there may be several, are

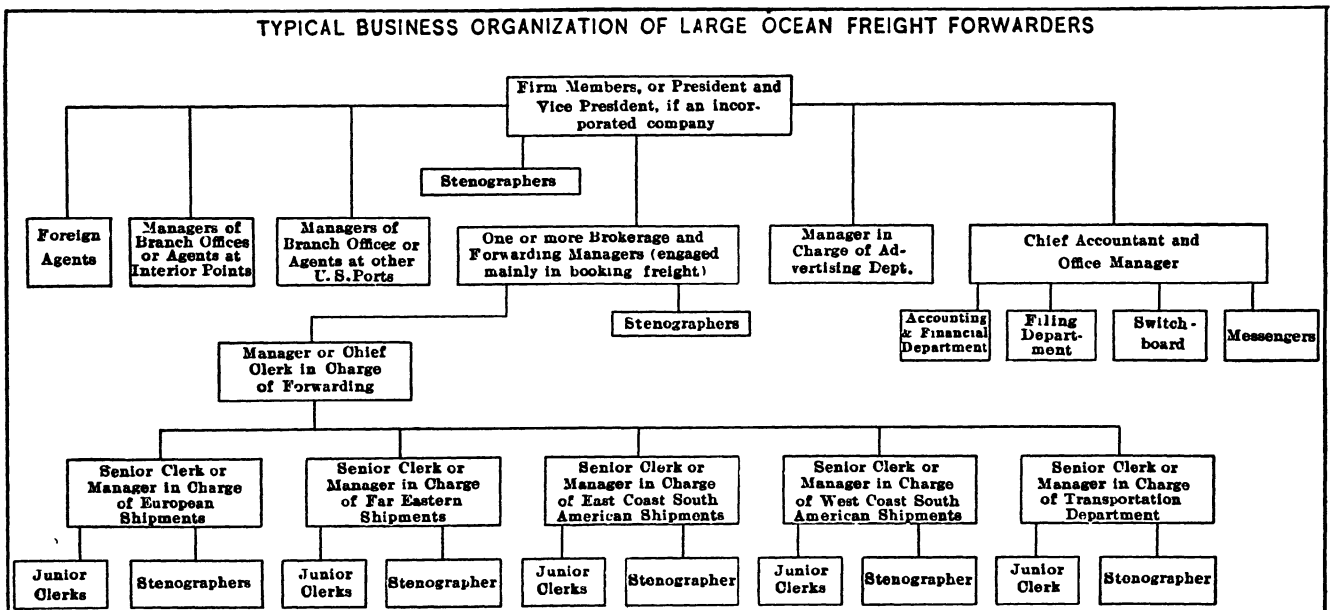

CHART I

TYPICAL BUSINESS ORGANIZATION OF A LARGE OCEAN FREIGHT FORWARDER

largely occupied in keeping in touch with customers and in booking freight with steamship companies. Managers, reporting to the firm members, supervise the forwarding staff but are likewise engaged largely in booking cargoes. In some organizations freight is booked directly either by the managers or by chief clerks of departments concerned with freight to particular parts of the world.

The forwarding staff of a large company is usually in charge of a manager or chief forwarding clerk, but no definite terminology has been developed. If large volumes of shipments are forwarded to various parts of the world the work may be subdivided among the staff geographically. The diagram shows that the forwarding of shipments to four sections of the world is handled by separate groups of men, each group or department in charge of a senior clerk, having from two to five junior clerks and one or two stenographers. In some organizations the work is divided among departments, each in charge of a forwarding manager. In an organization of this kind the customer's shipments are split up geographically and handled by groups of clerks who specialize on forwarding cargoes to particular sections of the world.

In a large organization there may be a transportation department to follow up cargoes and to see that delivery is made by lighter or truck on the days specified in the shipping permit obtained from the steamship companies. The department may consist of but one clerk or a senior and junior clerk to whom copies are given of the lighterage and trucking instructions issued by the men in charge of forwarding.

The staff may be organized either on geographical lines or on the basis of individual customers, all the forwarding work for a given shipper being turned over to a particular clerk. This is a convenience to the shipper in that he deals continually with the same individual clerk who becomes expert in the shipper's affairs. The plan does not, however, enable members of the staff to specialize in the varying shipping requirements of different foreign countries. Moreover, the advantages of having one clerk deal with an individual customer may be attained at least in part in the organization geographically subdivided by assigning clerks within the various territorial groups to large customers.

An accounting staff handles the bookkeeping, auditing, and financial work in connection with the freight brokerage and forwarding operations. Besides keeping the necessary records, the department sends bills to the shippers whose freight is forwarded; handles foreign exchange

drafts and pays the shipper in case the forwarder is financing his transactions; and settles the freight bills of the steamship companies, the bills of truckmen and of others with whom the forwarder has dealings.

There may also be an advertising department that sends circulars to customers and prospective customers, containing information as to forwarding services, steamship sailings, and ocean freight, and that places advertisements in shipping and trade journals and other publications read by exporters and importers.

FREIGHT BROKERAGE AND FORWARDING CHARGES

The charge collected for booking cargo space is "brokerage," and is a percentage of the amount of the ocean freight bill. This is usually paid by the steamship companies because they have ordinarily depended in part upon freight brokers and forwarders to book cargoes for them. Brokerage is collected by the forwarder, whether or not the cargoes booked are actually forwarded by him. The brokerage charge most commonly paid by ocean carriers at present is 1¼ per cent of the ocean freight bill, but the percentage paid varies somewhat at different ports and for particular carriers and in some instances brokerage is not paid by ocean carriers.

Additional charges are collected from the shipper or party for whom freight is forwarded. There may be a flat "forwarding" or "shipping service" charge per carload and per L.C.L. shipment. Or it may take the form of a nominal amount per bill of lading for which the forwarder prepares the ocean bills of lading and other shipping documents, and an additional small sum for preparing a consular invoice. At certain southern ports a separate amount per bale of cotton is charged by forwarders.

The brokerage received by forwarders acting as freight brokers in engaging freight and the additional charges collected for forwarding services are in practice closely related. If no brokerage were received the small charge for forwarding services would in many instances not be an adequate compensation. At times the forwarder may also receive revenues from other sources. Thus, if the shipper arranges to have the forwarder finance his trade transactions, collection or discount fees may be charged. When marine insurance is engaged by a forwarder for a

shipper the forwarder usually receives a commission from the insurance company or underwriter.

If the shipper requests the quotation of a through freight charge to an interior foreign destination on a consignment sufficiently large to be billed on a minimum steamship bill of lading without consolidation with other shipments, such through charge may or may not in a particular instance be somewhat higher than the actual freights paid to the carriers by the forwarder. The railroad rate to the American port of export can be definitely ascertained from available railroad tariffs and the ocean freight rate to the foreign port of entry can be obtained from the steamship company, but the actual inland freight charges beyond the port of entry to a particular inland destination are not always readily ascertainable until after delivery is made. Forwarders, when possible, use the actual foreign rate tariffs showing charges to interior foreign destinations or obtain advices from their foreign agents, and when such tariffs or advices are not at hand they may refuse to quote a through rate.

When forwarding consignments too small to be shipped without consolidation with other consignments because of the high minimum freights per ocean bill of lading charged by many steamship lines, the main profit of the forwarder may be derived from the difference between the forwarders' and the ocean carriers' freight charges. The forwarder pays the steamship line for transporting a combined cargo including the small shipments of a number of shippers, and he in turn charges each individual shipper rates that are lower than the minimum rate per bill of lading demanded by the steamship line, but sufficiently high to include a forwarding profit.

OCEAN FREIGHT FORWARDING DOCUMENTS

In conducting the ocean forwarding business the customary railroad and ocean-shipping papers discussed in Chapters 8 and 35 are employed to fix the contractual relations between forwarders and carriers and public authorities, but additional shipping papers and forwarder's documents are necessary to set forth the obligations of forwarders, their foreign representatives, and the shippers whose freight is forwarded.

The ocean freight forwarder, acting as a freight broker may, when booking a cargo for the account of a shipper, issue a *forwarder's freight contract* similar in form and content to the freight contract in which the

ocean carrier confirms bookings. Then the shipper, usually shortly after his shipment is delivered to the inland carrier for transportation to the forwarder at the port of export, gives detailed instructions to the forwarder on a form customarily referred to as *forwarder's shipping instruction.* He also sends the railroad bill of lading to the forwarder, and as he has billed his shipment to the forwarder, the latter receives the usual railroad notice of arrival from the railroad making delivery at the port. The forwarder thus obtains possession of the shipment, and attends to its transfer to the ocean carrier. If a lighterage service is necessary he issues *forwarder's lighterage instructions* and should it be necessary to cart the shipment to the wharf the forwarder will issue *trucking instructions* to a truckman.

The relationship between the forwarder and the ocean carrier is defined in the latter's ocean bill of lading, and in case of a large shipment that does not need to be consolidated with other shipments by the forwarder this bill of lading may be made out in the name of the shipper and be sent to him. In some instances, however, the forwarder issues his own *forwarder's bill of lading.* The liability of the ocean carrier in case of loss or damage due to his own acts is no different than the liability set forth in the usual ocean bill of lading, but a forwarder's bill of lading in one way or another usually limits the liability of the forwarder. The forwarder's bill may for example contain a definite clause to the effect that forwarders are "only agents of shippers and are in no way responsible for the acts and defaults of the carriers to whom they entrust the goods."

Small express shipments delivered to the Railway Express Agency to be forwarded to overseas destinations via one of the express companies for whom it acts as the domestic operating company, are usually made on the basis of its regular *express receipt.* The domestic uniform receipt provides that express shipments to foreign destinations are subject to the conditions imposed in the bills of lading issued by the ocean carriers and foreign inland carriers transporting them and to the acts and regulations of oversea and foreign carriers, custodians and governments; and that "the express company shall not be liable for any loss or damage or delay to said shipments over ocean routes and their foreign connections, the destination of which is in a foreign country, occurring outside the boundaries of the United States, which may be occasioned by any such acts, ladings, laws, regulations, and customs."

The ocean freight forwarder, when forwarding a shipment for the account of the shipper, issues a *forwarder's expense bill*, which sets forth all of the inland freight charges, transfer charges, ocean freight charges, insurance premiums and other charges and fees advanced by the forwarder, and also the forwarder's own charges or commissions payable by the shipper for services rendered as a forwarder.

The forwarder's current relations with his foreign representatives are adjusted by means of *forwarder's waybills*, which list all items in the shipment and contain specific instructions as to the handling of the shipment upon its arrival at the foreign port of discharge, and also a full statement of any charges that have not been prepaid by the shipper. Space is provided in which the foreign agent is requested to enter his charges, so that the waybill when returned to the forwarder may serve as a basis for the adjustment of accounts between the forwarder and his agent.

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CHAPTER 34

Chartered Steamship Services and Charter Parties

THE PURPOSE of this chapter is to describe more fully the chartered steamship services referred to previously—the various types of chartered services, owners and operators, the services and charges of shipbrokers, and the several general types of charter parties.

TYPES OF CHARTERED SERVICES, OWNERS AND OPERATORS

Vessels are chartered most frequently for a trip or voyage to transport a full cargo. The charter may stipulate that the vessel shall proceed to a specified destination or to any one of a range of destinations. In the latter case the master, before sailing, may receive his instructions to proceed to a defined destination or he may be ordered to call at some port for orders. When shipping grain from the United States to Europe, for example, the destination of the cargo is not always known before the vessel sails. The grain may be sold while afloat, after which delivery orders will be transmitted to the master.

A vessel may be chartered for an agreed voyage by a shipper who as charterer is to provide a cargo consisting mainly of a certain commodity or commodities and is to be responsible for a charter rate based upon a full cargo, but who may also accept cargo for other shippers at a higher or lower rate of freight than that named in the charter party. The shipper in this case puts the vessel "on the berth" to fill available space not needed for his own cargo. He pays the agreed charter rate to the vessel owner and in turn receives freight rates from the shippers who avail themselves of the offer.

A vessel may be put on the berth by its owner either for a full cargo or for smaller shipments to fill space not already contracted for. So, also, may a vessel be put on the berth for large or small shipments of general cargo by a ship broker, general operator, or speculator who has chartered the vessel for this express purpose. The vessel in such

case is not in the tramp service in the usual sense, but is being temporarily employed to carry general cargo in competition with regular lines or to provide a general cargo service to points not served by regular lines.

Steamship companies sometimes secure vessels on time charters either to supplement their line vessels or to establish a line service by means of chartered vessels. To meet a temporary demand a line may charter a vessel for a single voyage on a trip charter, in which case the vessel is for the time being in the line service. Operators of private or industrial services may also charter vessels, and vessels have at times been chartered by speculators for the purpose of rechartering them at a profit.

Chartered vessels are variously owned by small or large steamship concerns. They are operated by their owners, by steamship agents, by ship brokers, by socalled managing owners who as in England, manage their own vessels and also those owned by others, by steamship lines and by industrial carriers.

SERVICES AND CHARGES OF SHIP BROKERS

Vessels are usually chartered through ship brokers. Small owners or operators depend upon brokers to find charterers for their vessels, to handle their business affairs ashore, and depend largely upon them for advice as to how the voyage of their vessels should be planned. Larger tramp operators, managing owners and general steamship companies with extensive business organizations of their own and with expert chartering managers are less dependent upon outside ship brokers in planning voyages; but they, too, obtain advice from them and frequently carry out their chartering transactions through the medium of ship brokers.

The main work of ship brokers is to find charterers for vessels and vessels for charterers. The owners or operators of tramp vessels seeking cargoes are served by ship brokers who "cover the market" daily, i.e., they keep in touch with shippers who are likely to become charterers. If the desired full cargoes are not available at the port in which a particular ship broker is located, and where the vessel has arrived or is about to arrive, he may be able to locate a charterer elsewhere through a ship broker or agent at another port. Instead of chartering the vessel to a shipper on a trip charter, the broker may be able to charter it on

satisfactory terms to a general steamship operator, a regular streamship line, an industrial concern or large shipper, or to a small or large tramp operator on a time or perhaps a trip charter. Having arranged the chartering transaction to the satisfaction of owner and charterer the ship broker sees to the preparation of the charter party and its execution.

Ship brokers sometimes are important factors in the loading, discharging, and operation of chartered vessels. Their services in this connection depend upon the terms of the charter party as to whether loading and discharging or either of these services are to be performed by the vessel owner. When attending to the loading or discharging of

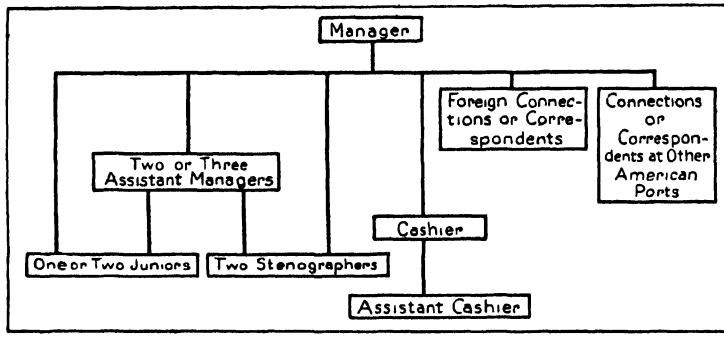

CHART 2

TYPICAL BUSINESS ORGANIZATION OF A LARGE SHIP BROKER

a vessel for the owner, the ship broker in effect becomes what in Great Britain is known as a "loading broker." This term is not in general use in the United States, but the same work is performed by ship brokers who make the necessary arrangements for the vessel owners. Charter parties sometimes specify that the vessel is "to be consigned at port of discharge to owners or their agents, by whom the steamer is to be reported at the customhouse." The owner in this case needs to be represented on the spot, his agent frequently being a ship broker to whom the vessel is consigned.

Should it be decided by the owner or operator to put a vessel on the berth a ship broker may be engaged to provide cargo and handle the transaction. The broker, who in effect becomes a steamship agent, may advertise the voyage, and send notices to shippers who might ship in the vessel, or he may personally solicit cargoes from shippers. The broker

makes the necessary docking arrangements, books freight at such rates as the market warrants, arranges for the receipt and loading of the cargoes, signs bills of lading for the owners or master, collects the freight if it is to be prepaid, pays the vessel's disbursements at the port, makes out the ship's manifest and secures the clearance papers at the customhouse, deducts his own expenses and charges, and remits the balance to the owner.[1]

Not all ship brokers are equipped to place a tramp vessel on the berth. Some of them, however, are steamship agents as well as ship brokers and possess a business organization suitable not only for chartering vessels but also for loading, discharging, and operating. As has been stated, ship brokers sometime charter vessels on their own account and put them on the berth for cargo.

Ship brokers are also engaged in the selling of vessels. As in a chartering transaction they serve as a medium through which the owner and purchaser get together. In England some ship brokers are known as "brokers for sale of ship" to distinguish them from "chartering brokers," and "loading brokers." [2] This terminology is not in general use in the United States, and ship brokers here do not confine themselves to one function only.

The business of marine insurance is so closely connected with ocean shipping that ship brokers usually act also as marine insurance brokers so as to be in a position to attend to the insurance of vessels, freight, and cargoes when authorized to do so. They may likewise hold the license of a customhouse broker.

The ship brokerage business is so organized and the nature of the business is such that the comparatively small staff of a broker's office is able to transact a business of large volume and almost world-wide in scope. A ship broker may have branch offices at certain ports, but his connections abroad or at other American ports usually consist of other ship brokers. Ship brokers in widely scattered ports together comprise a closely connected business organization. A large ship broker's organization may be limited to a Manager, two or three Assistant Managers, a Cashier and Assistant Cashier, and a small staff of junior employees. Small ship brokers have simpler business organizations and a single

[1] Douglas Owen, Ocean Trade and Shipping, p. 89.

[2] Thomas E. Scrutton and F. D. Mackinnon, The Contract of Affreightment as Expressed in Charter Parties and Bills of Lading.

individual may conduct a ship brokerage business. Brokers who undertake the loading and discharging of cargoes, and those who operate vessels or place them on the berth for general cargo, may have an additional organization, which is, however, not necessarily included in the business organization of a ship broker.

The ship brokerage business is regulated and aided to some extent by organized associations or exchanges which variously provide arbitration rules and committees, standardize grain charter parties and local practices concerning demurrage, loading, discharging and other matters, facilities for quoting grain charter rates, chartering vessels, contracting marine insurance, keep records of charter parties, report vessel movements and perform other services of importance to chartered as well as other types of steamship services.

The usual compensation of a ship broker for chartering a vessel on a voyage charter is a commission in the form of a percentage on the gross amount of freight, dead freight, and the demurrage provided for in the charter. Dead freight is the difference between the charter rate per unit of cargo multiplied by the tons of cargo called for in the charter and this rate multiplied by the tons of actual cargo on board, which may be less than a full cargo. Demurrage is the amount paid by the charterer in case loading is not completed within a specified number of days after the vessel is ready to receive cargo or does not proceed at the rate of an agreed number of tons per day. The commission is paid by the vessel owner or operator.

When a vessel is put on the berth for its owner or operator by a ship broker his commission is likewise a percentage of the freight. Under a time charter he receives from the owner or operator a percentage of the gross freight or hire, provided for in the charter party. If he sells the vessel he receives a percentage of the price paid for the vessel.

The broker's commission for chartering vessels or putting them on the berth varies. It may be as low as 1¼ per cent or as high as 5 per cent, depending upon the size of the vessel, the nature of the services required by the owner, the custom of the port, and other contingencies. Some charter parties provide that in addition to the commission paid to the broker he shall also receive an amount over and above his commission for attending to the ship's business at the port of loading.

When a ship broker provides vessel or cargo owners with marine insurance he is acting as a marine insurance broker. When he acts

in the capacity of a customhouse broker he receives the customary customhouse brokerage fees. Should he charter a vessel on his own account, either to recharter it at a higher rate or put it on the berth, he aims to make a business profit on the venture, for in such case he becomes a vessel operator. If he is a vessel owner as well as a ship broker the revenues derived from his own vessels likewise depend upon whether he can charter his vessels, put them on the berth, or otherwise operate them profitably.

OCEAN CHARTER PARTIES

The basic document governing services is the charter party. It is imperative that vessel owners or operators, charterers, and ship brokers familiarize themselves with the general forms or types commonly used in ocean shipping, and also with any special or unusual clauses that may be contained in the charters with which they are directly concerned. Two general types of charters are used in ocean shipping as conducted by private concerns—time, and trip or voyage charters—but there are several general forms of commercial voyage charters, and each general form is subject to many variations.

Time charters are to be distinguished from voyage charters in that they extend throughout an agreed period of time or specified number of voyages, while voyage charters cover a single voyage. During normal shipping periods, time charters are requested mainly by shipping firms having large quantities of cargo for shipment over extended periods and by steamship lines. The latter sometimes charter vessels on time charters to supplement their regular fleet when traffic has outgrown the vessels owned by them, or to serve as a temporary expedient while additional vessels are being constructed or purchased. They may also enter into time charter arrangements to carry freight contracted in advance, and there have been instances of lines, particularly newly organized lines, that have depended mainly or entirely upon time-chartered vessels. Tramp operators may also at times supplement their fleets by means of time charters. During abnormal periods, however, when wide fluctuations in ocean freight rates are anticipated, time charters have been utilized for speculative purposes. During the World War period, especially during its early stages, ocean vessels were chartered speculatively on time charters by individuals or concerns whose intention

was not to operate them, but to recharter or sublet them at higher charter rates when the demand for tonnage became acute.

Voyage charters are at times entered into by steamship lines, but their principal use is in connection with the shipment of large lots of heavy or bulky commodities. They are the mainstay of the ocean tramp service. Shippers having vessel-load quantities of cargo, but not sufficient tonnage to warrant the purchase of vessels or the negotiation of time charters, usually have the option of either shipping via regular lines or chartering vessels for single voyages. Those having less than a complete cargo may also charter a vessel on a voyage charter and supplement their own shipments by putting the vessel on the berth for additional cargo. Occasionally a vessel is chartered for the express purpose of putting it on the berth for miscellaneous quantities of cargo that different shippers may wish to have transported, and the owners of tramp vessels may themselves engage in such a service at times, but the tramp service is mainly conducted on the basis of voyage charters contracted to shippers of full loads of cargo.

Time Charter Parties

Commercial time charters as ordinarily utilized in ocean shipping have not been standardized, and special clauses may be inserted in the customary forms at the time of their negotiation. Clauses covering certain matters of importance to owner and charterer are usually found in time charters, although their exact content varies in different forms. The principal features of commercial time charters may be briefly summarized as follows:

1. The owner is required to give warranties as to the vessel's tonnage, nominal horse power, space and dead-weight capacity, inspection of hull and engines, its classification rating, its fit condition on delivery and its maintenance in a seaworthy condition, a full complement of officers and crew, and in some instances also its speed, fuel capacity, and fuel consumption. Some of these warranties are only approximate but wide deviations are not lawfully permissible.

2. The nature of the cargoes to be transported in the vessel is defined either specifically or in more general terms permitting the shipment of general merchandise and perhaps of certain named commodities and also passengers.

3. Trading limits are usually set by specifying the use of the vessel in

lawful trades between safe ports in a specified range of trades, and certain ports or trades may be excluded.

4. The time or duration of the charter is of course stated in the charter, or the number of voyages in case such is the agreement.

5. The payment of the agreed charter rate or hire is fully provided for in time charter parties. The usual agreement in case of cargo vessels is that a fixed amount per dead-weight ton per calendar month is to be paid, but when a passenger vessel is operated on a time charter the usual basis is its gross-register tonnage, and some time charters provide for the payment of a lump sum. The time or times of payment and the mode of payment are also as a rule definitely specified in present-day time charters. Provision is usually made for the discontinuing of payments when loss of time exceeding an agreed number of hours is caused by fire, stranding, breakdown of engines, deficiency of stores or men. For additional protection the owner is given a lien on the cargo for all freights and amounts due him, and the charterer is given a lien on the vessel for amounts paid in advance and not earned.

6. Commercial time charters usually provide for a division of expenses between owner and charterer. Although the charterer pays an agreed hire for the use of the vessel he is also as a rule required to pay all fuel expenses, loading and unloading charges, and other port charges and consular fees, except those incident to the officers or crew, and also pilotage charges, agencies, commissions, and other charges not specifically imposed upon the owner by the terms of the charter.

It is well to read time charters carefully with respect to port charges and pilotage because they usually define the conditions under which the charterer is relieved from payment when the vessel puts into a port other than the one to which the vessel is bound, due to reasons for which the vessel is responsible. If dunnage in addition to that found on board is required, the charterer is required to provide it or bear the expense incurred and when passengers are carried he is required to pay victualing costs, usually at agreed amounts per day for each passenger. The owner on his part is required to pay the salaries and wages of the officers and crew and consular fees connected with them, all bills for ship's stores and crew's supplies, vessel insurance premiums, and maintenance costs. Still other clauses usually specify that the owner shall pay the charter commision to which the ship broker who effected the charter is entitled, and also perhaps an "address commission" to the charterer

in case he advances funds beyond his required monthly payments and attends to the ship's business at ports.

7. A reading of any commercial time charter party will disclose many other provisions, some of which are of very material importance. Some of the more important clauses usually included are those variously defining the duties of the master to the charterer and the owner respectively; the signing of bills of lading by the master; the right to sublet the vessel; the right of the charterer to appoint a supercargo; the right of the charterer to cancel the charter in case the vessel is not delivered by the owner within an agreed period of time; the redelivery of the vessel to the owner; the obligation of the owner to place the "whole reach" of the vessel's holds, deck, and customary places of loading and accommodation at the charterer's disposal; the docking of the vessel to be bottom-cleaned and painted; the provision by the owner of customary ship's machinery for loading and unloading; the mutual division of salvage; the payment of penalties in case of nonperformance of contract; the laws and rules that determine liability in case of loss and damage of cargo; and the arbitration of any disputes that may arise between owner and charterer.

During the World War the United States Government adopted various standardized forms of time charters that did not conform to ordinary commercial practice. It took over many privately owned vessels on "requisition charters," and then rechartered them on the basis of government time charters differing in many respects from the commercial charters customarily used in private international shipping. The Government, moreover, reserved the right to recall requisitioned vessels and operate them according to the terms of its "bare-boat" charter form. Such a charter requires the owner to outfit and equip his vessel and put it into seaworthy condition, the charterer (in this case the Government) thereafter undertaking to operate, man, victual, and supply the vessel at his expense, to pay all port charges, pilotage charges and other expenses incurred in its use and operation, and to assume all risks.

One of the alternative plans of vessel operation aside from private ownership and operation, now provided for in the Merchant Marine Act of 1936 is the chartering of government-owned merchant vessels to private steamship companies in bare-boat charters under which the charterer assumes all operating expenses and also expenses incident to repairs and insurance. Certain government vessels, however, continue

to be operated for the Maritime Commission by private companies under operating agreements. The form of these agreements has been changed on various occasions ever since the Government acquired a merchant fleet. After rejecting all bare-boat charter bids in 1936, the Commission, in 1937, negotiated temporary operating agreements in which the compensation of the operators was reduced as compared with the standard agreement of 1935 and the vessels were operated on a cost basis, all profits accruing to the Government.

Voyage Charter Parties

Voyage or trip charters, which differ basically from time charters in that they provide for the use of a vessel on a single voyage instead of during a period of time, contain many provisions similar or differing in detail from those contained in time charters, and there is no uniformity in the phraseology of such provisions in different voyage charters. Voyage charters contain clauses in which the owner describes and gives warranties concerning his vessel; others that specify definite ports or a range of ports of shipment and discharge; that variously define the kinds of cargo that may be shipped, either specifically or by setting more general limits permitting the shipment of any "lawful merchandise"; that require the master to sign bills of lading; clauses which provide for cancellation, arbitration, etc., and clauses that refer to the liability statutes and rules that shall apply in case of loss or damage of cargo. Some of these voyage charter clauses must necessarily vary somewhat from similar provisions included in time charters due to the fundamental differences between making an agreed voyage and operating a vessel during a period of time, sometimes extending over many months. For the same reason, some of the miscellaneous time charter clauses referred to need not be included in voyage charters.

It is advisable, perhaps, to note only the outstanding and more important differences between time and voyage charters. Every voyage charter is a specific contract, but there are three general types: (1) the gross form voyage charter, (2) the net form voyage charter, and (3) modified gross or net voyage charters.

The charter rate or freight paid to the vessel owner under a voyage charter is usually based not upon the vessel's dead-weight, or gross-register tonnage, but upon the amount of cargo carried, at agreed rates per quarter of grain, ton of cargo, or other defined cargo units. Voyage

charter rates based upon some form of vessel tonnage are exceptional, but there are instances of voyage charters that provide for the payment of a lump sum.

This basing of voyage charter rates upon the amount of cargo carried, and the very fact that the vessel owner agrees to complete a voyage, make it necessary to include provisions not essential in a time charter. The charterer usually agrees to furnish a full and complete cargo; to have the vessel proceed to a discharging berth where she can always float with safety, or failing which, that delivery of cargo will be accepted at the nearest point where this condition of safety can be fully met, and that the owner shall have a lien on the cargo for "all freight, dead freight and demurrage and all and every sum or sums of money which may be due the steamer under this charter." A customary provision is contained in the "cesser clause," which usually provides that the charterer's liability ends when the cargo is on board and the bills of lading are signed, the ship thereafter agreeing to have recourse to its lien on the cargo; but this has been interpreted to mean that the charterer is relieved only when the cargo lien offers full protection to the vessel owner.

It has also been found necessary to insert clauses in voyage charters designed to speed up the loading and discharging of cargo, and to avoid misunderstandings concerning receipt and delivery of cargo. Voyage charters, in their "lay-day" clauses, usually specify the number of days allowed for loading cargo and sometimes also for discharging, or the number of tons per day to be loaded or unloaded. In case the vessel is detained by failure of the charterer or his agent to deliver or receive cargo, or actually to load or unload cargo in case the voyage charter so provides, within the number of lay days agreed upon, the charterer agrees to pay "vessel demurrage." When, on the contrary, the agreed lay days are not needed, the vessel owner under some voyage charters agrees to pay "dispatch money" at fixed rates for each lay day not used. Explicit clauses frequently provide where cargo shall be delivered by the charterer and where it shall be received at destination. Provisions of this kind variously state that it shall be within reach of ship's tackles and that lighterage and extra lighterage costs shall be paid by the charterer, or that named wharves shall be used for delivery and receipt of cargo; or other arrangements may be provided for.

The fundamental difference between the general classes of voyage

charters referred to above is found in the nature of the services to be performed by the vessel owner for the charter rates paid by the charterer. The distinctive features of the gross form voyage charter is that the charter rate covers the entire transportation service, including loading at the shipping point, discharging at destination, and port charges. It is therefore the simplest form of voyage charter and one often preferred by shippers and consignees who have no special loading and unloading facilities or arrangements. It specifies the delivery and acceptance of cargo by shipper and consignee, usually alongside the ship, but within these limits the gross form charter rate covers port charges and services as well as operating costs incurred by the vessel in sailing from shipping point to destination. Contingent costs such as vessel demurrage, lighterage, and extra lightering in case of failure to deliver or receive cargo as agreed upon, or extra expense incurred by reason of working the vessel at ports on Sundays or holidays are variously provided for in gross form charters and are in addition to the charter rate.

The charter rate paid by the charterer under a net form voyage charter party covers only the actual transportation of the cargo from port to port. The charterer, in addition to paying the charter rate, is required to assume the cost of loading his cargo aboard the vessel and of discharging it at the destination port. The agreement may be that these services will be actually performed by the charterers, or that "charterers are to load, stow and trim cargo at their own expense, under the direction of the master," but that "they shall not be responsible for improper stowage," or that the service will be performed by the ship, but at the charterer's expense. The charterer is also required to pay port charges, customs and harbor dues and wharfage costs at both loading and discharging ports.

Net form voyage charters are sometimes preferred by charterers, especially by those regularly engaged in trade. Exporting or importing firms may have been able to make favorable arrangements of their own for loading and discharging cargoes. They may indeed own or operate wharves, and they may possess efficient port organizations and excellent freight-handling facilities.

It is especially desirable that charterers, owners, and ship brokers read carefully any modified gross and net form charter parties in which they may become interested, because the clauses defining the services to be performed by the owner under such charters conform neither to those

of gross form nor to those of net form charters. They are modifications of the one or the other, some of them being mainly of the gross form and others conforming mainly to the net form, but with modifications concerning the amount of services covered by the charter rate.

There are so many special forms of voyage charters, and the addition or substitution of special clauses in the general types occurs so frequently, that no account such as this can obviate the necessity of examining each charter carefully whenever a particular chartering transaction is undertaken.

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CHAPTER 35

Shipping and Vessel Documents and Their Uses[1]

The documents employed by water carriers and shippers or consignees in their dealings with each other, and those required in the relations of shippers or consignees with the United States and foreign governments, with forwarders and with marine insurance concerns, may be designated as *shipper's* or *shipping* papers; while those utilized by the carriers in their dealings with government authorities and in the operation of their vessels are generally referred to as *ship's documents*. The shipping papers peculiar to the freight forwarding business, it will be recalled, were discussed in Chapter 33, but when shippers are represented by ocean freight forwarders the customary ocean shipping papers are nevertheless required.

SHIPPING PAPERS

Although cargo is frequently booked almost up to the day of sailing, the traffic officers of ocean lines prefer, when possible, to book cargo in advance and to have the available cargo space in their vessels fully engaged before the vessels arrive in port. Shippers, moreover, usually require assurance that their shipments have been definitely booked at specified freight rates. The beginning step in the shipping transaction, therefore, is the closing of a *freight contract.*

In order to prevent pier congestion and unnecessary cargo handling, and to facilitate cargo loading, ocean carriers usually require shippers to deliver outbound cargo at the pier according to instructions. The necessary arrangements are in some instances made by telephone or otherwise, but in others the shipper is required to obtain a *shipping permit* which instructs the receiving clerk at a particular pier to receive specified cargo

[1] This chapter is limited to the customary practices prevailing during normal peacetime shipping. The additional special requirements applicable during war conditions are omitted because they are temporary and because the full extent to which temporary changes may be made is as yet uncertain.

on specified dates for shipment to a named destination on a designated vessel.

Upon delivery at the pier or wharf the carriers by water issue *dock receipts*. This document is a receipt to the shipper and may contain notations of irregularities as to packing, shifting contents of containers or signs of tampering with packages, which may be of importance in the preparation of bills of lading. It is not a bill of lading, but usually states that the shipment is received subject to the conditions stated in the carrier's bill of lading.

In the foreign trade the shipper or his agent is required to clear his shipment at the customhouse. He is required to prepare and file a sworn *shipper's export declaration* which details the goods being shipped and states their export value. The customs collector retains the original declaration and certifies a duplicate "for presentation by the exporter to the transportation company to be attached to the outward vessel or car manifest." Besides being required for cargo and vessel clearance this document serves as a source of the United States Government's export statistics. When the original export declaration has not been received, a *pro-forma export declaration* and *bond* may be filed with the ship's manifest. In exporting some commodities it is also necessary to obtain *inspection certificates* or *certificates of purity*, particularly when they are exported to certain foreign countries.

The governments of some foreign countries also require the preparation of a *consular invoice* in connection with exports destined to their ports. The forms of these consular invoices and the fees collected vary. Their announced purposes are to make more difficult the understatement of dutiable value, to facilitate the correct application of import duties and customs regulations and to provide a basis for compiling or checking trade statistics. In some instances the fees collected may also be a consideration. Some consular invoices specify the origin of the exported products, but various countries require the preparation of a *certificate of origin*. As some foreign countries have more than one tariff schedule a statement of the national origin of products either in a consular invoice or certificate of origin is required to obtain their minimum or most-favored-nation duties.

Commercial invoices are of course prepared by shippers as a private document, but in foreign trade they are utilized not only in securing payment. They may also assist the exporter's foreign customer or rep-

resentative in clearing shipments through some foreign customs houses, and some foreign countries subject commercial invoices to consular regulations as to certification by consular agents, their form, contents or in other specific respects. Commercial invoices covering exports to some foreign markets, moreover, are virtually *non-dumping* or *value certificates* designated primarily to facilitate the enforcement of the "non-dumping clauses" contained in their tariff laws. Exporters are in such instances required to certify not only as to actual export prices, costs and charges but also as to the fair market value of the goods as sold for home consumption in the principal markets of the United States.[2]

The principal shipping paper obtained by the shipper, however, is the *ocean bill of lading*. (Form 5.) It is a fundamental document, because it represents the goods being shipped. It is the final receipt from the water carrier and a shipping contract between the carrier and the shipper; it frequently is needed to establish ownership, which is important in financing transactions, in adjusting claims and in making delivery to the consignee. When drawn to the shipper's order, it is a negotiable document which the shipper may use as the basis for a draft. In the foreign trade particularly, the most widely used method of financial settlement is by documentary drafts or bills of exchange, to which a negotiable order bill of lading, a marine insurance certificate or policy, the shipper's invoice and perhaps also consular invoices are attached. When drawn to the shipper's order, the bill of lading needs to be endorsed by the shipper, otherwise the consignee cannot obtain the products from the water carrier at destination. "Order" bills of lading are issued more commonly in foreign trade than in domestic commerce, where this method of financial settlement is less prevalent and the "straight" bill of lading which is made out directly to the consignee is therefore more frequently satisfactory.

In foreign trade shipping it should be noted that the ocean bill of lading is required by many foreign governments for purposes of customs entry and that it is sometimes subject to varying foreign requirements as to certification or legalization by consular agents and retention of copies by them, and as to its contents, use of the metric system or other specific matters. In foreign trade, moreover, copies of the bill of lading may be carried by the vessel to supplement the ship's manifest in the identification of cargo during periods of war.

[2] Johnson, Huebner and Henry, Transportation by Water, pp. 343-344.

"Order" and "straight" bills of lading may be further classified into "received for shipment" and "shipped" or "on board" bills of lading. The former indicates a named vessel and is issued after the cargo is in the water carrier's possession, but before it has been loaded aboard the vessel. The latter is issued only after the goods have actually been loaded. The difference is at times important in connection with letter of credit or other financial arrangements which may specifically require "shipped" or "on board" bills of lading. Common carriers in domestic interstate or in foreign commerce who issue bills of lading before receiving the goods from the shipper are held liable for resulting financial losses, in the Bills of Lading Act of August 29, 1916. In foreign trade, after goods are loaded, ocean carriers are required, on shipper's request, either to issue a "shipped" bill of lading or to make proper notations upon any document of title which may have been issued previously. This requirement is contained in the Carriage of Goods by Sea Act of April 16, 1936.

The liability clauses with respect to loss or damage of cargo of bills of lading issued by water carriers in domestic and foreign commerce are subject to the limitations contained in the Revised Statutes of the United States and in the Harter Act of February 13, 1893, except in so far as ocean carriers operating in foreign trade are now subject to the Carriage of Goods by Sea Act of April 16, 1936. The latter supersedes the Harter Act in foreign trade shipping except as to "the duties, responsibilities and liabilities of the ship or carrier prior to the time when the goods are loaded on or after the time they are discharged from the ship."

The liability of carriers by water, whether in domestic or foreign trade, is far less drastic than that of railroads [3] largely because of the inherent difference between transportation by water and on dry land. In foreign trade shipping the liability limitations have also been influenced by foreign practices. The difference is so pronounced in its practical effects that a huge marine insurance industry has been created not merely for the insurance of vessels but to provide the cargo protection needed by exporters and importers. The *insurance policies* or *certificates* which may be obtained are essential to their protection and frequently play an important part in the financial settlement of business transactions.

In domestic water transportation some carriers assume liability beyond legal requirements and they may assume full liability as common

[3] See Chapter 8.

carriers and themselves provide insurance coverage. But their legal liability is limited. The Harter Act provides that

> ... if the owner of any vessel transporting merchandise or property to or from any port in the United States of America shall exercise due diligence to make the said vessel in all respects seaworthy and properly manned, equipped and supplied, neither the vessel, her owner, agent, or charterer shall become or be held responsible for damage or loss resulting from faults or errors in navigation or in the management of said vessel nor shall the vessel, her owner or owners, charterers, agent, or master be liable for losses arising from dangers of the sea or other navigable waters, acts of God, or public enemies, or the inherent defects, quality, or vice of the thing carried or from insufficiency of package, or seizure under legal process, or for loss resulting from any act or omission of the shipper or owner of the goods, his agent or representative, or from saving or attempting to save life or property at sea, or from any deviation in rendering such service.

Provisions of the revised statutes also limit liability for loss and damage of cargo in various ways. They exempt fire losses unless by design or neglect on the part of the vessel owners; they exclude liability in case of valuable articles of various kinds shipped without advance notice to the carrier; they limit the personal liability of individual vessel owners.

The cargo liability clauses of ocean carriers operating in foreign trade are now subject to the Carriage of Goods by Sea Act of 1936, which is an outgrowth of a long extended effort to bring about a certain degree of international standardization. The so-called Hague Rules were first proposed in 1921; they were later amended in 1922 and 1923 and became known as the Brussels Rules, and they were thereafter adopted by law in Great Britain and in several other maritime countries. The Act of 1936 does not embody the Brussels Rules in every respect but it adopts them in part and it increases minimum liability requirements somewhat. Some of its provisions are similar to those applied to foreign trade in the Harter Act but they are more explicit and in cases of losses resulting from unseaworthiness it places the burden of proof as to due diligence upon the carrier.

Section 3 of this act requires ocean carriers operating to or from ports of the United States in foreign trade, to exercise due diligence to "(a) make the ship seaworthy, (b) properly man, equip and supply the ship, and (c) make the holds, refrigerating and cooling chambers, and all other parts of the ship in which goods are carried, fit and safe for their reception, carriage and preservation." It requires the carrier to "properly

and carefully load, handle, stow, carry, keep, care for, and discharge the goods carried." It also requires the carrier to issue a bill of lading and it prescribes certain bill of lading requirements on the part of the carrier and shipper. It specifies that in case of loss or damage not apparent at the time of delivery, notice must be given the carrier within three days and that loss or damage liability suits must be brought within one year. Section 4 then lists rights and immunities of ocean carriers operating in foreign trade. Loss or damage resulting from unseaworthiness is exempted if the carrier is able to prove that it exercised due diligence in making the vessel seaworthy as is required in Section 3. Section 4, sub-section 2, provides that neither the carrier nor the ship is liable for loss or damage resulting from

(a) act, neglect or default of the master, mariner, pilot, or the servants of the carrier in the navigation or in the management of the ship; (b) fire, unless caused by the actual fault or privity of the carriers; (c) perils, dangers, and accidents of the sea or other navigable waters; (d) act of God; (e) act of war; (f) act of public enemies; (g) arrest or restraint of princes, rulers, or people, or seizure under legal process; (h) quarantine restrictions; (i) act or omission of the shipper as owner of the goods, his agent or representative; (j) strikes or lockouts or stoppage or restraint of labor from whatever cause, whether partial or general, provided that nothing herein contained shall be construed to relieve a carrier from responsibility for the carrier's own acts; (k) riots and civil commotions; (l) saving or attempting to save life or property at sea; (m) wastage in bulk or weight or any other loss or damage arising from inherent defect, quality, or vice of the goods; (n) insufficiency of packing; (o) insufficiency or inadequacy of marks; (p) latent defects not discoverable by due diligence; and (q) any other cause arising without the actual fault and privity of the carrier and without the fault or neglect of the agents or servants of the carrier, but the burden of proof shall be on the person claiming the benefit of this exception to show that neither the actual fault or privity of the carrier nor the fault or neglect of the agents or servants of the carrier contributed to the loss or damage.

Section 4, sub-section (q), therefore shifts to the carrier the burden of disproving negligence as to loss or damage resulting from causes such as rust. Section 4 also specifies that when an ocean carrier is liable for loss or damage its liability shall in no case exceed $500 per package or per customary freight unit "unless the nature and value of such goods have been declared by the shipper before shipment and inserted in the bill of lading." This maximum liability is substantially in excess of the released values formerly specified in ocean bills of lading.

Section 12 provides that the act is not to be construed as superseding the Harter Act and other liability laws "which would be applicable in the absence of this act insofar as they relate to the duties, responsibilities and liabilities of the ship or carrier prior to the time when the goods are loaded on or after the time they are discharged from the ship."

The bill of lading contracts of ocean carriers operating in the foreign trade of the United States must now come within the minimum requirements of the Act of 1936. But greater liability may be assumed and bills of lading also contain clauses covering other matters of importance to shippers. They often contain a "notify clause" which authorizes the carrier's agent at destination to notify the person who will eventually receive the cargo of its arrival, without, however, releasing shipments billed on order bills of lading. They variously specify the receipt of goods at end of ship's tackle or otherwise, and the payment of lighterage, wharf handling charges and other costs may be covered by special clauses. A minimum freight charge per shipment may be stipulated; transshipment costs may be provided for; prepayment of freight may be required.

At times the interior exporter, instead of billing his freight to the port of export on a railroad bill of lading and then rebilling it by obtaining an ocean bill of lading, may prefer to bill it through to the foreign port of entry or even to an interior destination in a foreign country. In that case he obtains a through or so-called *export bill of lading* from the rail carrier. The contract contained in such a bill of lading is three fold. One part covers the rail shipment to the port of export and contains the essential clauses of the usual inland bill of lading. The second part which covers the ocean voyage is similar to the contract contained in an ocean bill of lading and is now subject to the provisions of the Carriage of Goods Act of 1936. The third part of the through bill-of-lading contract, which covers the shipment from the foreign port of entry to interior destination, provides that "the property shall be subject exclusively to all the conditions of the carrier or carriers completing the transit." Each part, however, is virtually a separate contract, the export bill of lading providing for a through service but not for joint liability of the carriers performing the service. Nor does it provide for a joint rail-ocean rate. The Interstate Commerce Act, moreover, provides that, when railroads transport freight in interstate commerce or to an adjacent foreign country over a rail and water route, liability for loss or

damage occurring while the goods are in the custody of a water carrier "shall be determined by and under the laws and regulations applicable to transportation by water, and the liability of the initial or delivering carrier shall be the same as that of such carrier by water."

As the minimum freight clause usually contained in ocean bills of lading often makes it too costly to ship small parcels via ocean freight lines, some ocean carriers issue *parcel receipts*, which waive the minimum freight clause but usually impose restrictions of various kinds. Such receipts were originally intended solely for samples of export merchandise, but their use later became somewhat more general.

The list of ocean-shipping papers is further increased at the port of destination where cargoes are discharged. The customary practice in the United States can best be outlined by referring to the additional shipping papers that are required in connection with inbound cargo. The Inbound Freight Department sends a *notice of arrival and freight bill* to the consignee, instructing him to surrender the original bill of lading properly endorsed and to pay the freight charges shown in the bill. In case the consignee is unable to present the original bill of lading with proper endorsement because he has not received it from the shipper, he may be required to furnish a bond. This is followed by a *final notice of arrival* which informs him that his cargo is ready for delivery and that it will be stored at his risk and expense unless it is removed from the pier within a prescribed time limit. When all formalities have been fulfilled the ocean carrier also provides the consignee with a *delivery order* which gives authority to the delivery clerk at the pier actually to release the cargo. Upon delivery the consignee or his agent is required to sign a *delivery receipt*. Carriers by water operating in domestic commerce in many instances reduce the number of delivery documents. Some of them make delivery, much as railroads do, on the basis of a notice of arrival, a freight bill and a delivery receipt.

It is, moreover, necessary that an importing consignee or his agent should satisfy the requirements of the United States customs authorities. The most complicated set of shipping papers used in the foreign trade are those required in the entering of imports through the customhouses. The requirements frequently are so technical that most importers in the United States depend upon licensed customhouse brokers to obtain possession of their wares. On the entry of imported wares the importer is required to present not only the bill of lading or a *bond to produce*

bill of lading, but also a *United States consular invoice.* The foreign exporter has prepared this on prescribed forms which vary according to whether the products were sold or shipped on consignment, and he has presented it to a United States consular officer or other authorized individual for official certification.[4] In case of inability to present such a consular invoice the port collector may permit the importer to enter his merchandise on a commercial invoice or a pro forma invoice accompanied with a bond. A correct form of *entry form,* moreover, must be presented, together with an *importer's declaration* and *oath,* the form of which is different for purchased commodities than for commodities that are received on consignment. The various kinds of entry blanks are too numerous for complete description.[5]

SHIP'S DOCUMENTS

Many papers and documents not directly related to the shipper are required by ocean carriers in their relations with the Government and in the conduct of the transportation business. As outbound cargo is received at the wharf it is tallied, measured, and recorded on *dock sheets,* and damage is noted by receiving tallymen. Copies of these sheets are sent to the Freight Traffic Department to be used in checking against bills of lading, and in calculating freight rates, in ascertaining the basis on which they are determined and the total amount of freight due. When cargo that has been ordered forward fails to arrive the Freight Traffic Department is notified on separate dock sheets as "not arrived," and when cargo is loaded into steamers' holds, lighterage clerks or tallymen or perhaps deck officers or ship's apprentices prepare *tally sheets.* A *stowage plan,* moreover, is prepared by the Wharf Department to show graphically the location of the various shipments that are loaded. From copies of the tally sheets the ship's purser may be required to make up a *ship's cargo book* which lists the entire cargo according to the marks and number assigned to each port and stowed in each hold.

From the completed bills of lading the Freight Traffic Department then prepares the *ship's manifest* which is required by the United States

[4] Not required for personal effects accompanying a passenger or for merchandise not exceeding $100 in value.

[5] See Customs Regulations of the United States.

and foreign governments and is needed by carriers as an operating and accounting document. The copies prepared for the customs authorities need to contain the items required by the United States Government, the requirements differing somewhat in the foreign and coastwise trades. The ship's manifest is required by the port collector in the clearance of vessels to foreign ports, as a basis for his official export returns, and as a means for the enforcement of customs regulations. At the foreign port of entry it is required in the customs entry of vessels, and inbound vessels arriving at American ports are similarly required to present ship's manifests. When a vessel is stopped at sea by a man-of-war it is the principal document examined for the identification of cargo. For the steamship company's records a completed manifest listing all essential details is prepared. This serves as a routing document, as a check upon cargo at the time of discharge and as a basis for the company's freight revenue accounts. In these respects it corresponds roughly to a railroad waybill.

When upon arrival the master of the vessel fears that cargo may have suffered damage for which the steamship line should not be held liable, or that the vessel and its fittings have been damaged, he files a *note of protest*, and later when actual damage is discovered he files an *extension of protest*. The line's Insurance Department has of course taken steps to insure the vessel in a self-insurance fund or in properly executed *marine insurance policies*.

Many documents in addition to the ship's manifest are required in the relations of ocean carriers and the Government. Each vessel engaged in the overseas trade is required to be measured and to obtain from the registry authorities of the country in which it is documented an official *ship's register* and a *measurement certificate*. Preliminary to the issue of the certificate of registry the Government requires a *builder's certificate*, a *surveyor's certificate* of measurement, an *owner's oath*, a *master's oath* and in case of a vessel sold or transferred to a citizen of the United States, an official *bill of sale*. American vessels regularly documented for operation in the domestic coastwise or inland trades are similarly required to obtain documents showing that they are officially *enrolled* or *licensed*. All American self-propelled and sailing vessels must be documented. Flat boats and similar craft not self-propelled or fitted with sails are not required to be documented when operating on inland waterways or lakes, unless they carry passengers or are operated in trade

with contiguous foreign countries; and harbor craft such as lighters or car floats are also exempted. Merchant vessels operating via the Suez or Panama routes are also required to obtain *Panama* and *Suez Canal measurement certificates,* by which the tonnage basis for tolls is determined.

All vessels, except certain exempted types, are required to carry *inspection certificates.* They vary for different classes of vessels, but those issued to American steam and motor vessels certify inspection of hull, boilers and equipment, the required complement of officers and crew and the maximum number of passengers that may be carried.

In the overseas trade the crew of an American vessel is signed before a Government representative in a document known as the *shipping articles* which is the official agreement between master and crew as to wages, scale of provisions, period of service and conditions of labor. Before departing the vessel's master is also required to produce a *crew list* which names each crew member and contains identifying information. Both the shipping articles and a certified copy of the crew list must be carried on board the vessel and be produced upon request of authorized Government agents. Oaths must be made by the master that the provisions of the Seamen's Act of 1915 with respect to the crew have been complied with.

Vessel Clearance and Entry

Besides the ship's manifest, exporters' declarations, meat or other commodity inspection certificates and crew list, certain other documents are required in the clearance of vessels to foreign ports. They include a *port sanitary statement,* such *bills of health* as may be required by foreign countries, a *safety radio telegraph* certificate (except for exempted vessels or voyages), a *report of entrance and clearance* of vessels in foreign trade, and a *clearance certificate.* Should the vessel wish to clear before delivery of its complete manifest and exporters' declarations, it is necessary to prepare a *request for immediate clearance* and a bond to produce them within a stipulated period of time must be filed with the port collector.

Many official documents besides the original ship's manifest and various copies are similarly required in entering a vessel operating in foreign trade. Prescribed oaths made by the master are usually printed on the reverse side of the inbound foreign manifest. If the vessel has

not been boarded by a customs officer within 24 hours after arrival the master is required to report its arrival in the usual "report of entrance or clearance of vessels in foreign trade," referred to above. An American vessel is required to deposit a *list or manifest of passengers;* its register; certified copy of crew list; *certificate covering return of destitute American seamen;* copies of *seamen's customs statements;* report of equipment purchased or repairs made abroad; and the clearance, bills of health and other documents issued to it abroad. The entry requirements of a foreign vessel differ somewhat in that it is not required to deposit its crew list with the port collector, and its register, although produced upon entry, is deposited with the foreign vessel's own consular officer whose certificate is in turn deposited with the port collector.

Before formal entry for landing and delivery of cargo is made, a vessel entering from foreign ports may make a *preliminary entry,* execute a *vessel bond,* and in case merchandise, baggage or passengers are to be unloaded at night or on Sunday or a holiday, obtain a *special license.* In making formal entry the master is required to apply for a *general permit to unload,* unless it was previously issued in connection with the preliminary entry. Should the owners of the vessel wish to retain unpermitted cargo upon the wharf they are required to make *application to allow unpermitted cargo to remain upon wharf* and to indemnify the collector against possible losses, risks or claims. Unpermitted cargo not covered by a *permit to retain cargo upon wharf* is sent to a public store or bonded warehouse named in a so-called *general order.*

When a vessel arrives from a foreign port it is, moreover, necessary to obtain a *certificate of sea stores* covering stores placed under seal by the customs officers, and when tonnage taxes are paid a *certificate of payment* is issued by the customs collector. *Cargo and passenger reports* containing statistical returns must be filed in connection with foreign trade vessels when they clear as well as when they enter.

The customs clearance and entry of vessels operating in the coastwise trades is far less complicated and exacting because their cargoes are not subject to customs duties, the vessels are not required to pay tonnage taxes, and the navigation laws applicable to them are more easily administered than in the oversea foreign trades. "The customs entry of a vessel coastwise consists of delivering to the collector within

24 hours after arrival, a sworn manifest of cargo and obtaining from him a permit to discharge. On clearance of a vessel coastwise the master will deposit with the collector verified duplicate manifests of the cargo on board which the collector will certify, returning one copy to the master, with a permit thereon to depart." [6] Requirements differ somewhat according to whether a coastwise or inland vessel operates within a customs district, between customs districts or between great districts.[7] Vessels operating between great districts are required to deposit manifests regardless of the quantity or types of cargo on board. The Mississippi River System, however, is exempted.

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[6] Corps of Engineers, Port and Terminal Charges at U. S. Ports (1938), Digest of Customs Regulations, pp. 15-16.

[7] The "great districts" are (1) seacoasts and navigable rivers, Maine to Texas; (2) Puerto Rico; (3) Pacific Coast and navigable rivers; (4) Alaska; (5) Hawaii; (6) Great Lakes and connecting and tributary waters as far east as the Raquette River, N. Y.

CHAPTER 36

Water Freight Classification, Tariffs and Rates

THE PRACTICE of carriers by water operating in different trades, with respect to the publication of rate tariffs and the classification of freight, varies widely, and significant contrasts with railroad practice can readily be drawn. Their rate-making methods and the factors influencing their freight rates, moreover, vary to such an extent that the coastwise, Great Lakes, intercoastal, river and inland canal, and ocean trades must necessarily be distinguished in a discussion of freight rates.

FREIGHT CLASSIFICATION AND TARIFFS IN COASTWISE, INTERCOASTAL AND GREAT LAKES TRADES

Intercoastal common carriers are subject to the Intercoastal Shipping Act of 1933 as amended, which was enacted largely because of lack of rate stability and excessive competition. The maximum rates published by them were in many instances worthless to both the shipper and the Government. Under the Act of 1933 the intercoastal lines are now required to publish, post and file tariffs showing their actual port-to-port rates in accordance with regulations set by the Maritime Commission and the rates so filed may be changed only on 30 days' notice, unless a shorter period is authorized by the Commission. Their tariffs must also show whatever classification of freight is in effect. Most of the intercoastal carriers are parties to the freight classifications of the railroads, but those operating from Gulf ports to the Pacific Coast publish specific commodity rates and a general merchandise rate applicable to items not covered by commodity rates.

Freight tariff publication by coastwise (other than intercoastal) and Great Lakes common carriers operating on regular routes from port to port in interstate commerce is governed by section 18 of the United States Shipping Act of 1916 as amended, which requires them to "establish, observe and enforce just and reasonable regulations, etc." Prior to the act of June 23, 1938, however, they were required to file with

the Maritime Commission only their maximum port-to-port freight rates, not those actually charged. In practice many of them filed as their maximum rates the actual port-to-port rates charged. This is particularly true of numerous coastwise and Great Lakes common carriers who are parties to joint rail and water tariffs which must be filed with the Interstate Commerce Commission. Many of them have adopted freight classifications similar to those of competing railroads and some of them have adopted the railroad classifications in full or with only minor modifications. In this too the interchange of traffic with railroads has been an important factor. When the Intercoastal Act of 1933 was amended, June 23, 1938, effective September 21, 1938, moreover, its provisions as to the filing of tariffs were made applicable to common carriers operating on regular routes in the coastwise and Great Lakes trades from port to port in interstate commerce. Not only the intercoastal lines, but those operating in the regular coastwise and Great Lakes trades as common carriers in interstate commerce are therefore at present required to file tariffs with the Maritime Commission showing their actual port-to-port freight rates.

FREIGHT CLASSIFICATION AND TARIFFS ON RIVERS AND INLAND CANALS

The joint rail and water rates under which some common carriers operating on rivers and inland waterways interchange traffic with railroads are subject to regulation by the Interstate Commerce Commission and their joint tariffs must be published, posted and filed. The Commission is authorized to fix only maximum reasonable joint rates when one of the carriers is a water line, but the actual rates are in effect determined when the joint rates of a through rail and water route are established and the portions or divisions going to the water line are decided upon. The regular classifications of the railroads, moreover, customarily apply in connection with joint rail and water tariffs.

Freight rates charged by river and inland canal carriers in their port-to-port business are not subject to Government regulation. Such carriers are not required to publish, file or post tariffs and they are not required to classify freight. The quoting of secret port-to-port rates is not prohibited, and they may if they wish issue tariffs which may or may not be adhered to.

OCEAN FREIGHT CLASSIFICATION AND TARIFFS

Further variation as to freight tariffs and classification is found in foreign trade shipping. The Shipping Act of 1916 which applies to "common carriers by water in foreign commerce," excluding ferry boats running on regular routes and also tramp vessels, does not specifically require ocean carriers to publish, file and post rate tariffs. It requires the filing of rate agreements but this is quite different from the tariff requirements applicable either to intercoastal carriers or to carriers operating coastwise along the seaboards or on the Great Lakes. In order to stabilize ocean rates more definitely, and particularly to curb the cut-throat competition to which various ocean conferences were subjected by certain independent steamship lines, the Shipping Board Bureau (predecessor of the Maritime Commission) in 1935 attempted to go a step further. Under Section 19 of the Merchant Marine Act of 1920 which authorizes it to make rules and regulations "in order to adjust or meet general or special conditions unfavorable to shipping in foreign trade," including any arising from competitive methods or practices of foreign-flag carriers, the Shipping Board Bureau recommended that all ocean carriers operating in foreign trade be required to file, publish and keep open to public inspection tariffs showing all rates, charges, rules and regulations. It also recommended that no changes shall be made except by filing and posting tariff amendments upon thirty days' notice, unless permission were obtained to do so without filing or to file and post upon notice of less than thirty days. The Secretary of Commerce in whom regulating powers were at that time vested, however, amended this recommendation radically. As a result, ocean carriers operating in foreign trade, both conference and independent lines, are required to file with the Maritime Commission, tariffs showing all rates and charges, except as to cargo loaded and carried in bulk without mark or count. But they are not required to file them in advance of rate changes. Changes may be effected, subject to the provisions of the Shipping Act prohibiting unlawful discrimination, but they must then be filed "within thirty days from the date such schedule, change, modification or cancellation becomes effective." [1]

The desire to retain flexibility has caused most ocean carriers oper-

[1] United States Shipping Board Bureau, Investigation—Section 19 of Merchant Marine Act, 1920, pp. 502-503, July 12, 1935.

ating in foreign commerce to refrain from classifying freight in the sense in which freight is classified by the railroads and by many domestic carriers by water. Although there are a few instances of freight classification in the oversea's trade, most ocean carriers have adopted a policy of quoting commodity rates on particular commodities and a general cargo or blanket rate for all other merchandise. Their commodity rates are variously based on the long, net or metric ton or upon smaller units such as 100 pounds, 1 cubic foot or some special quantity unit utilized in shipping particular articles. Their general cargo rates are more commonly based upon a ton of defined weight or measurement. Many of their rates are quoted upon the basis of "weight or measurement, ship's option." A quoted rate per ton on this basis applies to either an avoirdupois ton of defined weight or a measurement ton of 40 cubic feet, whichever is the higher.

SHIPPING CONFERENCES AND RATE AGREEMENTS

Before discussing the factors influencing ocean freight rates it is essential that the activities of the ocean conferences of which most regular lines operating in international commerce are members, should be emphasized. Well over one hundred approved freight conference agreements applicable in the foreign trade of the United States are on file with the Maritime Commission.[2] The legal requirements under which these conferences operate will be discussed in Chapter 44. Subject to regulation by the Maritime Commission, where all agreements must be filed for approval, and subject to the provisions of the Shipping Act, as amended, ocean carriers are authorized to enter into rate agreements. Some lines are not members, but the conferences, which extend throughout the commercial world, are of outstanding importance in the determination of ocean line rates.

The ocean conference agreements at present in effect are primarily rate agreements variously covering all cargo or leaving some commodities subject to "open rates," and applying the agreed rates to all members alike or authorizing differentials as between carriers or types of vessels. Some of them are primarily important in setting minimum rates below

[2] United States Maritime Commission, Approved Conference Agreements on file with Maritime Commission pursuant to Section 15 of the Shipping Act, 1916, as of August 1, 1937.

which actual rates may not be quoted. But conference agreements may also cover the payment of brokerage or commissions to freight brokers, forwarders, agents or other persons; the absorption of wharfage, storage or delivery charges; the absorption or equalization of railroad or other transportation differentials; the giving of special rates or special privileges or advantages; the allotting of ports; the restricting or regulating of the number and character of sailings; the limiting or regulating of the volume or character of freight traffic to be carried, and the pooling of earnings, losses or profits. The list of approved pooling agreements as of July 1, 1937, issued by the Maritime Commission, includes forty-six pooling agreements, eight of which applied to the traffic of more than one trade route.

These conference agreements tend to regulate and control competition in its effects upon the rates, profits and services of the member lines. Subject to government supervision, they are a benefit to shippers in that they tend to stabilize rates and to bring about a rate structure in any given trade which comes closer to parity in the rates charged respectively from European and American ports to competitive foreign markets than would be the case under a regime of cut-throat competition. They also tend to give to the shipper better steamship services. They promote regularity of service, better distribution of sailings, and the operation of more and better vessels than the lines would feel justified in providing if interline competition were unrestricted. By reducing the cost of line operation the conferences lay the basis not only for increased profits to the carriers, but for a lower level of freight rates and a higher standard of service.

In addition to the ocean freight conferences operating in international trade, there are several freight shipping conferences in the trade with Puerto Rico, Hawaii and the Canal Zone, in the coastwise shipping of the eastern and Pacific Coast seaboards and in the intercoastal trade. A number of passenger conferences similarly endeavor to stabilize passenger fares and services.

The role of steamship conferences has been least evident in the tramp service. Attempts have been made in the past [3] to control minimum charter rates in certain trades or between certain ports, but charter rates have for the most part been on a free competitive basis. The most recent attempt to influence charter rates by agreement is the British plan

[3] See Johnson, Huebner and Henry, Transportation by Water, p. 365.

which began in 1934 as a part of the British Government's tramp subsidy program. Minimum tramp rates on British tramp vessels are agreed upon in several trades for the primary purpose of avoiding uneconomic and suicidal competition and dissipation of the tramp subsidies which were in effect from 1935 to 1937. The plan is administered by a Tramp Shipping Administrative Committee.

OCEAN FREIGHT RATES

The general principles—value of service and cost of service—which govern the making of railroad freight rates, also enter into the making of ocean line freight rates in foreign trade shipping, but the extent to which they govern ocean line rates is different and the competitive forces which influence them also greatly differ in certain respects. This is due largely to the fact that ocean rates are less subject to government regulation [4] and to the competitive character of international commerce. Certain discriminatory and unfair practices are prohibited; ocean conference arrangements are subject to regulation; unjust discrimination between shippers or ports is prohibited, and charges unjustly prejudicial to American exporters as compared with their foreign rivals are within the scope of the Maritime Commission's power. But the Commission's regulatory powers in foreign trade shipping do not prevent a rise in the general level of ocean line rates so long as prohibited discriminations are not practiced; they do not in practice apply to the rates applicable in the import trade, except in so far as inbound rate agreements and other conference arrangements come within the Shipping Act; they do not apply to the charter rates of tramp steamers; they do not prevent non-conference lines from undercutting the standard rates of the conference members.

The value of service principle governs when ocean lines endeavor to fix their rates at "what the traffic will bear." It is largely influenced by competitive forces: (1) Some direct competition persists even as between the conference lines, for the conferences control and restrict rather than eliminate rate competition. Some of the rate agreements, moreover, set minimum rates, leaving the actual rates charged to each member line, and berth cargo commodities which may be carried at less than the regular rates, sometimes in lieu of ballast, are excluded from

[4] See Chapters 17 and 44.

some rate agreements. (2) Some lines operating in certain ocean trades are not members of the governing conferences. (3) Ocean line rates are to some extent influenced by tramp competition. The berth cargo rates of lines are particularly subject to tramp competition because certain of the commodities to which they apply are adapted to transportation in shipload lots. Their general cargo rates are less subject to, but not free from, this form of competition, because shippers of large quantities of a commodity which may move either in shipload lots or as general cargo frequently have a choice of services; and when general cargo line rates rise to an attractive level, tramp vessels have at times been put "on the berth" for the purpose of accumulating smaller shipments of general merchandise, and thus securing a full cargo for the vessel, if possible.

(4) The force of "market" or "commercial" competition is particularly important as a competitive factor in foreign trade shipping. It is international in scope and tends toward the maintenance of a substantial degree of ocean rate parity as between the United States and rival exporting countries. This parity is not maintained in the trade with nearby foreign markets where wide cost differences are apt to give a rate advantage to particular exporting countries, and rate parity is not always maintained even in the long-voyage trades, but, in the distant competitive markets of South America, Africa, Australasia and the Orient, the effect of market competition and the need for reasonable rate parity are ever-present rate factors.

Commercial competition in the form of port rivalry similarly exerts an influence upon the relative ocean line rates in effect at rival American ports and seaboards. Both the railroads, as was stated in Chapter 11, and the ocean lines have long been concerned with the maintenance of combined railroad (export and import) rates and ocean line rates which will result in a reasonable degree of port equalization. Complete port equalization is not at present in effect, but port rivalry exerts a constant pressure in that direction. In the long voyage trades to overseas markets other than those of Europe, the eastern seaboards have for many years been blanketed on a uniform ocean rate basis. The North Atlantic ports are generally on a uniform port-to-port ocean rate basis in the European trades while the South Atlantic and Gulf ports formerly were generally on uniformly higher bases. During recent years, however, the three eastern seaboards have quite commonly been blanketed in the

European trades as well as elsewhere. Pacific Coast ports as a rule are similarly blanketed. As the more extensive blanketing of port-to-port ocean rates in the European trades has not been accompanied by corresponding changes in railroad export rates, there is now a less degree of port equalization in case of European shipments through the ports of the eastern seaboards from the Central West than prevailed before these ocean rate structures were changed.

The value of service principle and the endeavor of ocean lines to maintain rates at what the traffic will bear is further manifested in the differential rates sometimes granted by conferences to slower or indirect lines; in the special commodity rates granted to different commodities and the class rates quoted by some lines; and in the influence exerted upon line rates by the relative supply of, and demand for, tonnage and cargoes. When idle tonnage abounds, line rates usually are relatively low because of its bearing upon competition in ocean shipping, and when there is a shortage of tonnage, as was the case during the World War, rates rise to high—sometimes excessive—levels.

The cost of service principle is of secondary importance in the making of ocean line rates, but it influences them somewhat in several ways. It is less important than in the making of railroad rates both because of the competitive forces referred to and the relatively slight extent to which ocean rates are subjected to public regulation. Cost of service tends to influence the minimum below which the general level of line rates in a given trade cannot long be maintained. Declining costs provide a basis for reduced rates, although the conferences, in their endeavor to maintain rates at what the traffic will bear, will not freely pass along all cost reductions to the shipper. When costs rise, the tendency is to advance rates in so far as commercial and competitive conditions do not prevent. Particular lines operating under the handicap of comparatively high costs may, however, not be able to maintain their rates at a profitable level.

Differences between particular commodity or class rates, moreover, are not due entirely to the value of service principle as measured by differing commodity values. Differing service costs are in some instances a factor. Cost of service may also result in the collection of special charges when special handling, lighterage or other terminal expenses are incurred. Distance as a cost of service factor is less prevalent than

in the making of railroad rates, but sometimes is of substantial importance. Distance is a factor in the ocean rate advantage which a particular exporting nation may have over its foreign rivals in nearby markets and at times in quoting rates on commodities not controlled by commercial competition or competition between ocean carriers.

OCEAN CHARTER RATES

The units upon which voyage and time charter rates are based were stated in Chapter 34 and there it was also noted that time charters and some kinds of voyage charters require the charterer to assume certain expenses or perform specified services. Charter rates, therefore, vary according to the amount of service and the costs or charges imposed upon the owner and charterer, respectively.

The influences determining ocean charter rates differ from those mentioned in connection with line rates chiefly in that charter rates are subject to more direct carrier competition and fluctuate freely with the supply of tramp tonnage and the demand for such tonnage. Except in trades where the British control plan is operative, no prices could be more competitive than charter rates. There is a world-wide competition among vessel owners to secure desirable cargo shipments and when there is bidding for cargoes of grain or other bulky commodities that are acceptable to lines either as berth or general cargoes, the competition between tramps, moreover, is supplemented by active line competition.

As was stated above ocean conferences in the chartered service have been relatively unimportant although the British Tramp Shipping Administrative Committee has influenced charter rates somewhat by bringing about minimum rates in certain trades. The business organization for making charter rates is consequently very different from that prevailing in the line service. In the overseas trade, charter rates are not made cooperatively by a limited number of conference committees. Except when under direct government control, as was the case during the World War, they are usually the result of bidding or bargaining between vessel owners or brokers and shippers or other charterers. The bargaining may be facilitated by organized grain, produce, or maritime exchanges, but it is usually essentially competitive in character.

COASTWISE AND INLAND WATERWAY RATES

In domestic shipping the important element of international commercial competition is absent, but the rates of coastwise and inland water carriers are similar to those of ocean carriers in that they too are determined primarily on the basis of what the traffic will bear. Cost of service is a factor mainly in the special handling charges that are levied in some instances; in the extent to which costs affect their freight classifications which in many instances are those of the railroads; and in the fact that favorable costs usually enable water carriers to charge lower rates than their railroad competitors. Coastwise and inland waterway rates are determined mainly by competitive forces which differ somewhat from those affecting ocean rates, and there are also differences as to the regulatory powers exercised by the Government.

The freight rates of the intercoastal lines are influenced mainly by competition among themselves. There are two intercoastal conferences —the Intercoastal Steamship Freight Association and the Gulf Intercoastal Conference, but the absence of complete membership and the large number of lines and surplus tonnage have on various occasions prevented them from stabilizing intercoastal rates. A second factor is the competition of the transcontinental railroads. In order to obtain traffic the rates of the intercoastal lines must be lower, but they have at times been so much lower as to reflect clearly the dominant effect of direct competition among the intercoastal lines. Lack of rate stability may be overcome somewhat as a result of the Intercoastal Shipping Act of 1933 as amended which confers real powers upon the Maritime Commission and requires the intercoastal lines to publish, file and post binding tariffs showing their actual freight rates, but rates have not yet been stabilized.

The port-to-port rates of common carrier lines operating coastwise along the seaboards and on the Great Lakes were, prior to the application of the Act of 1938, subject to less Government regulation than those of the intercoastal carriers. Since then, however, they are regulated similarly, except that the minimum-rate provisions of the Intercoastal Shipping Act do not apply to common carriers on the Great Lakes. Coastwise line rates are influenced mainly by railroad competition and by competition among the coastwise lines, and they in turn affect railroad rates. Competitive all-rail rates are above the port-to-port coastwise rates and above joint rail and water rates, frequently by agreed differentials.

Competition by contract and industrial coastwise carriers is an additional rate factor, but it is of secondary importance because these services are largely confined to bulk cargo, whereas the regular coastwise lines compete mainly for general cargo.

Competition between the common carrier lines of the Great Lakes for general cargo or package freight is less potent as a rate factor because the number of competing package lines is relatively small. Their port-to-port rates are influenced mainly by railroad competition. The joint rail and lake rates to which the lake lines are parties are related differentially to the prevailing all-rail rates, and the rates in effect via certain differential rail and lake routes are kept at a level below the prevailing standard rail and lake rates.

Ninety per cent or more of lake commerce consists of bulk cargo which is carried by industrial and chartered or contract vessels. Lake charter or contract rates on port-to-port shipments of grain vary largely in accordance with the demand for space. The tonnage available for lake grain, moreover, is influenced somewhat by the demand for tonnage in the movement of iron ore and by the time required for loading and discharging cargo. In contrast with grain rates, the port-to-port rates on iron ore have been stabilized. Prior to 1924 they also fluctuated with the supply of and demand for vessels, but, during the period from 1924 to 1936 inclusive, they were standardized from specified groups of ore shipping ports to Lake Erie ports and to Lake Michigan ports. In 1937 the rates on ore were increased somewhat. The industrial carriers which transport ore for proprietary steel companies are of course concerned with costs of transportation rather than with rate-making. Port-to-port rates on lake coal have also been stabilized from the lower lake ports to the principal delivery ports, but the standard rates have been changed more frequently than those applicable to ore. Lake coal rates are influenced somewhat by all-rail rates on coal shipped from mines located in Illinois, Indiana and western Kentucky.

The port-to-port rates of the common carriers operating on rivers and inland canals are influenced mainly by railroad competition. As they are free from government regulation, they can be changed at any time with a view to acquiring traffic. Some of them are parties to joint rail and water rates which are subject to regulation by the Interstate Commerce Commission and are usually established differentially below the all-rail rates. Rival common carrier barge lines compete with each other on

certain rivers and canals, but the greater part of the traffic of most inland waterways is bulk cargo, all but a small proportion of which is transported by contract and industrial carriers.

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CHAPTER 37

Water Terminals and Port Charges

The terminals, at which carriers by water direct and service their vessels, load and discharge cargoes, interchange traffic with railroads and other inland carriers, and contact shippers, consignees or their representatives and other private and public agencies, are as indispensable to them as railroad terminals are to the railroads. A port, however, consists not only of its physical terminal facilities, but of all the private and public agencies concerned with shipping that are located within or adjacent to the terminal area. Many ports must be equipped to handle both the local business which originates within the industrial and commercial area adjacent to the waterfront or is destined to the port for local delivery, and the traffic moving through the port as a gateway or junction point.

The business organization of a port includes not only the carriers serving the port, and the private or public agencies which provide wharves, piers, grain elevators and other terminal properties, but also necessary local switching, terminal or belt line railroads, trucking or drayage concerns, towage and lighterage companies and private or public warehouses. It may include freight forwarders, freight brokers, ship brokers, steamship agents, shipping or traffic departments of inland and local shippers, stevedores and longshoremen, pilots and bunker fuel, ship supply, ballast and drydock concerns. It may include a maritime, grain or produce exchange, port authority or other organizations interested in the promotion of the port and performing definite services; a board of marine underwriters and surveyors; marine insurance companies or underwriters and their agents and brokers; custom house brokers; banks and credit facilities. Many ports are administered by local or state regulatory authorities, and at some ports there are Federal officers and also foreign consular representatives. The assistance rendered and the regulation exercised by these authorities are discussed in Chapter 40 on state and local regulation.

TYPES OF PORTS

Ocean, coastwise and Great Lakes ports may be grouped, according to location, into roadstead, natural bay, river and combination river and bay ports. Roadstead ports, such as Dover (England), Boulogne (France) or the port of Los Angeles are located on the shore where no natural embayment provides quiet water for anchorage. Harbors are created at such ports, usually at public expense. The Puget Sound ports, San Francisco, Pensacola, Mobile, Boston, Southampton and many other ports are located on natural bays. London, Shanghai, Hamburg, Bremen, Rotterdam, Antwerp, New Orleans, Philadelphia, Portland, Chicago, Milwaukee and many other ocean and Great Lakes ports are located on rivers. The port of New York is an outstanding example of a port located at the head of a bay and also on a large river.

The ports at which river and inland canal barges and other inland craft operate are variously located at the mouth or terminus where local deliveries are made and traffic is interchanged with ocean, coastwise or lake vessels; inland from the coastline at the ports reached by ocean, coastwise or lake vessels; at the inland junction points of tributary rivers, and on the banks of rivers and canals at many inland points. The location of their terminal properties at ports is frequently dictated largely by their dependence upon traffic interchanged with railroads and highway carriers.

PORT OWNERSHIP AND ADMINISTRATION

American ports may also be grouped according to the ownership of their terminals and the form of local administration: (1) A *public port* in the United States is one at which the major part of the waterfront and most available wharves and piers are owned by the state or municipality. At New Orleans, for example, a State Board of Commissioners or "Dock Board" operates the public wharves and exercises general control over the port; a Public Belt Railroad Commission operates the municipality's belt line railroad and a State Board of Commissioners of the New Orleans Levee District constructs and maintains levees and provides the Dock Board and belt line with a portion of the necessary waterfront and right of way. At San Francisco much of the waterfront is also owned by the State and the port is administered by a Board of

State Harbor Commissioners. The ports of Los Angeles, San Diego and Oakland are primarily municipal ports. Sometimes other public agencies also own port facilities at public ports.

(2) Some American ports are owned and administered in part by so-called "port authorities," similar to the "public trusts" which control various British ports. In the United States they constitute separate municipal or county corporations or commissions authorized by state law to purchase waterfront, construct and operate wharves and other port facilities, plan and promote ports, finance their activities, and in some instances to administer the port. Most of them, however, do not control the port as a whole and own only a portion of its terminal facilities. "Port authorities" of varying importance and with different powers are found at Portland, Oregon, Seattle, Houston, Albany, Savannah, etc., and a bi-state "Port of New York Authority" was some years ago established by compact between the states of New York and New Jersey.

(3) Many ports are known as *private ports* in that their terminal facilities are owned almost entirely by private interests which also operate them with but a minimum of supervision or control by local regulatory authorities. Some of the smaller ocean ports the shipping of which consists almost entirely of bulk commodities are of this type. On the Great Lakes many large as well as small ports are also primarily private because bulk cargoes predominate so largely, and the same is true of various river ports.

(4) The experience in the United States has been that at ports where the traffic consists almost entirely of bulk cargoes, in which private grain, steel, coal, oil or other industrial or commercial concerns or the railroads are interested sufficiently to construct adequate terminals, private administration may be satisfactory, but that private ports handling or desiring to handle much general cargo are apt to be handicapped. Some ports, therefore, are public ports and independent port authorities have been established at some, but the majority are *semi-public* in the sense that their privately owned terminals are supplemented by a substantial number of publicly owned wharves and piers and also in that a substantial degree of port administration is provided by public authority. At many American ports the municipalities or states own wharves and piers, and there are also instances of county and Federal ownership. Yet they also have many private wharves and piers, variously

owned by railroads, terminal companies, industrial corporations, individuals and steamship lines.

The more important semi-public ports are variously administered locally by a municipal department especially created for that purpose, by a municipal board or commission, or by an especially created state harbor commission, board or department. At some ports local administration is divided between municipal and State authorities in the performance of administrative functions. At others the local administrative set-up consists of little more than the regular municipal department of public works, a harbor master and a board of pilot commissioners.

Local port administration does not displace the Federal agencies concerned with various phases of port control and improvement. The Interstate Commerce Commission has jurisdiction over the terminal charges, regulations and practices of railroads engaged in interstate and foreign commerce; the Maritime Commission has similar jurisdiction with reference to common carriers operating on the high seas and Great Lakes and over other persons, subject to the Shipping Act, who "carry on the business of forwarding or furnishing wharfage, dock warehouse or other terminal facilities in connection with common carriers by water." At many ports there are also Customs, Immigration, Public Health, Marine and Inspection, Shipping Commissioners and other Federal officers; and the Engineers of the Corps of Engineers of the United States Army are in charge of river and harbor improvements.

TERMINAL FACILITIES FOR CARGO HANDLING

The major terminal facilities of water carriers are their docks and wharves. The latter, which may be either longitudinal bulk-heads or piers projecting into the harbor, are the structures on which cargo is received and delivered. The former are the harbor space alongside in which the vessels are placed while loading and discharging cargo, but wharves and piers, particularly on the Great Lakes, are frequently known as docks. At American ocean and Great Lakes ports the wharves and piers are fixed structures which offer no serious problem because of excessive differences in water levels. On many of the rivers, however, water levels change so greatly that the loading and discharging of freight to and from river barges or other river craft requires special wharf construction or cargo handling appliances.

Warehousing facilities are essential parts of most terminals. Many wharves and piers are equipped with warehouses or sheds to protect, assemble and store cargo. At many ports, particularly at the large ocean and Great Lakes ports, there are also railroad warehouses and private and commercial warehouses near the wharves and piers, and, in some instances, there are bonded warehouses and public (Government) stores for the storage of imported cargoes. Grain elevators for storage as well as for transshipping, loading and discharging, cleaning and otherwise handling grain are provided at many ocean and Great Lakes ports. Areas for the storage of coal, iron ore and other bulk commodities are provided at many of the great bulk cargo terminals.

Many water terminals also include the rail connections, over which freight is received and delivered in railroad cars by the regular line-haul railroads, by privately owned railroads or by public belt lines. Ports vary also as to the extent to which lighters, car floats and other harbor craft are utilized in loading and discharging cargo and in moving freight between piers or otherwise within the harbor area. Freight not moving directly in railroad cars, vessels or harbor craft between wharves or piers and railroad stations, local industries or inland points requires the services of motor trucks.

The facilities for handling cargo at the wharves and piers are other essential parts of a water terminal. They differ fundamentally for general and bulk cargo and at some ports special arrangements are also made for uniform package freight, dangerous commodities and precious goods. In loading and discharging general cargo at the ocean ports of the United States the ship's tackle is usually depended upon, for relatively few American ocean wharves or piers are equipped with cranes, derricks or other permanent wharf machinery. On many ocean wharves and piers ordinary hand trucks are used to move about general cargo, although power-driven trucks and trailers have come into use in some instances and a beginning has been made in the use of mechanical conveyors. Floating derricks are available for the handling of heavy articles which cannot readily be lifted by the ship's machinery.

At Great Lakes ports, where general cargo liners operating in domestic trade receive and deliver freight either through side doors or deck hatches and where wharf decks are constructed at the level of boat decks, much freight is also handled mainly by hand trucks, electric tractors and trailers. Some package vessels do not need to be equipped

with the power driven winches, cargo masts and booms, blocks and ropes or cables common to ocean vessels. On the rivers general cargo is for the most part loaded, discharged and moved about by hand, although some wharves are equipped with escalators, cranes or other shore machinery.

Conveyors, cranes, derricks and hoists for the handling of general cargo have been installed at certain Great Lakes and river terminals and at some ocean ports, but the use of stationary or moveable cranes, derricks and other wharf appliances is far more prevalent at some of the large ports of Europe. The advantages cited in favor of the continued use of ship's machinery at ocean ports in the United States include the heavy initial expense and overhead incurred in equipping wharves with large cranes and derricks; the lack, on many piers, of the space needed for large wharf freight-handling appliances; the necessity of constructing wharves of sufficient strength and the resulting increase in construction costs; the absence in many instances of any marked advantage on the part of cranes or derricks in the time consumed in transferring cargoes; and the necessity of employing skilled operators in the operation of complicated wharf appliances. The extent to which the cranes and derricks can be used to reduce subsequent freight handlings, moreover, is limited because many piers are not sufficiently wide to be equipped with railroad tracks upon which cars could be placed for direct loading by means of the wharf machinery. Inertia and, in some instances, opposition on the part of longshoremen, have probably deterred pier and wharf owners from adopting shore machinery for the loading and unloading of general cargo in the United States.

The advantages cited in favor of the use of shore cranes and derricks instead of the ship's machinery are that they reduce the number of freight handlers and the amount of hard labor employed in loading, discharging and moving cargo; that cranes are practically always ready for action and are frequently in better working condition than the ship's machinery; that their range of deposit on the wharf is larger than that of ship's tackle; that they can also be used for handling cargo from point to point on the wharf and sometimes for the direct loading of freight into cars, and that they possess a special advantage at ports having unusually heavy tides.

In contrast with the wharf facilities provided at most American ports for general cargo, great progress has been made at many ocean, Great

Lakes and river ports in providing special wharf facilities for the loading, discharging and handling of bulk cargoes. Special piers at many ocean and Great Lakes ports are equipped with chutes and pockets, car dumping machines, loading and unloading buckets, electric conveyors, floating tipples or "fast plants" of various kinds for cargoes of coal and ore. Many of them are equipped with stationary and floating grain elevators, and some have special facilities for the loading and discharging or handling of bulk oil, sand and gravel, cement, stone, phosphates and fertilizers, lumber and other commodities.

PORT SERVICES AND CHARGES

Dockage and Wharfage

The customary terminal charges for the use of wharves or piers is either a dockage or a wharfage charge or both. These terms are not everywhere defined uniformly, but "*dockage*" at most ports refers to a charge against the vessel for the use of a wharf or pier. It is customarily based upon either the vessel's gross or net register tonnage at stated amounts per gross or net ton per day.

At some ports dockage is known as wharfage, but *wharfage* customarily is a charge against cargo moving over a wharf or pier at stated amounts per ton or other unit of cargo. Although based upon cargo, wharfage is not necessarily paid by shippers or consignees in addition to the freight rate, for wharfage is not infrequently absorbed by the carriers. At some ports wharfage charges are known as *tolls* or *tollage*. Further lack of uniformity in terminology results from the use of the term *top wharfage* at certain ports. When collected at New York it refers to a wharfage charge imposed at certain terminals only after a period of 24 hours has transpired. At Philadelphia, Baltimore and some other ports, however, top wharfage refers to a wharfage charge collected at railroad piers against cargo on which the railroad receives no line haul and consequently no freight revenues.

The dockage and wharfage practices of different ocean ports and of different terminals within a given ocean port vary. At some piers only dockage is collected, at some only wharfage and at some both dockage and wharfage are charged. When both are charged there is further variation as to the relative extent to which an ocean terminal depends mainly upon the one or the other for its major revenues. At the rail-

road piers located within some ocean ports neither dockage nor wharfage is charged in case of through traffic from which the railroad receives a line haul; or neither is charged, subject to limits set in rail tariffs as to minimum railroad freight rates or territorial boundaries beyond which no wharfage or dockage is charged. Dockage more commonly than wharfage is omitted at railroad piers, and the municipal and other piers at some ports have followed suit in the belief that otherwise they would not be used by the water carriers. In general, however, a charge of some kind must be collected at piers owned or operated by municipalities, states, port authorities or terminal companies because they cannot, as railroads sometimes do, depend upon freight rates as a source of income.

When dockage or wharfage or both are charged, the practice at different ports and at different piers within a given port vary not only as to the amount of the charge but as to commodities and trades. At some ports wharfage, instead of being uniform for all traffic, differs for different commodities, and it may again vary according to trades. At Houston, for example, wharfage at publicly owned wharves varies according to whether the traffic is coastwise and intracoastal, import and inbound intercoastal, export and outbound intercoastal. Dockage even more commonly varies according to trades. Distinction is variously made between export, import, coastwise, intercoastal and inland trade conducted in barges, canal boats, bay, river and harbor craft. But the classification or grouping is frequently less detailed.

The remuneration received by wharf and pier owners sometimes takes the form of a *rental.* This occurs when a municipal, state or otherwise owned terminal is leased to a steamship line or other lessee on a time contract. At the grain elevators utilized at ocean ports for the transfer of grain from rail to ocean carriers, an *elevator charge* is customarily collected. As in case of wharfage uniformity at different ocean ports has not been attained. There is usually a scale of charges per bushel covering various types of service.

Wharfage and dockage practices at Great Lakes ports are influenced greatly by the predominance of railroad and industrial ownership of bulk cargo terminals. There is much absorption of both dockage and wharfage at railroad terminals when the traffic affords a railroad line haul, and free dockage is quite customary at ore, coal and grain terminals owned by either railroads or industrial corporations. At the

municipal piers provided at various lake ports for package freight, dockage and wharfage practices vary and the amounts charged also differ. At most privately owned terminals "other than those engaged in the ore, coal and grain trades, special contracts must be made due to the absence of uniform charges for dockage or wharfage." [1] Lake grain elevators customarily collect elevation charges but those covering elevation and transfer of ex-lake grain at certain Erie, Buffalo and Oswego elevators are absorbed by the railroads in their ex-lake grain rates.

Private industrial carriers operating on the rivers usually load and discharge at company owned terminals. Other privately owned river wharves are usually subject to charges made by agreement, when the owner has no financial interest in the vessel or cargo. Many municipal and private river wharves, are leased to carriers on time contracts, and in such instances rentals displace dockage and wharfage is frequently absorbed by the carrier. When barges utilize levees neither dockage nor wharfage is customarily charged. When a leased wharf is used by river carriers other than the lessor, a wharfage charge based on cargo is sometimes collected.

Other Terminal and Port Charges Upon Cargoes

Wharfage frequently does not include the physical handling or movement of cargo between ship side and cars, between ship side and storage or between storage and cars. At some ocean ports "handling" refers to loading from piers to cars and unloading from cars to piers. For services of this character *handling charges* are customarily assessed against cargoes at ocean ports in the United States. They are in many instances absorbed by the carriers in whole or in part, particularly at railroad piers when the railroad receives freight rates in excess of specified minima, when railroad rates are quoted to or from ship side or when absorption is otherwise provided for. Handling charges are also imposed in some of the Great Lakes trades.

Wharfage usually covers a certain amount of free storage on wharves or piers, but, after a varying period of free time, water terminal *storage charges* are in many instances imposed at American ports. The railroads also as a rule hold freight for transshipment by vessel free of *railroad demurrage* or *storage* for stipulated periods of free time. In foreign trade shipping at ocean ports, for example, railroad free time ranges

[1] Johnson, Huebner and Henry, Transportation by Water, p. 146.

from 5 to 15 days and varying periods of free time are granted in the coastwise and intercoastal trades.

The heaviest burden upon freight loaded or discharged is for *stevedoring* which may be borne in the first instance by the vessel, but is customarily included in regular line freight rates and is therefore passed on to those who pay the freight charges. Who pays loading or unloading charges in the tramp service depends upon the terms of the charter party,[2] and shippers who themselves operate industrial carriers necessarily bear this expense so far as their own cargoes are concerned. The cost of loading, discharging or transshipping cargo at ports, may also include *charges for special equipment* such as floating derricks. There may be *cargo-trimming charges; freight forwarding charges; vessel demurrage* in case freight is not loaded or unloaded within a prescribed free time or at the rate of an agreed number of tons per day; unabsorbed *railroad switching charges; drayage* or *cartage* and unabsorbed *lighterage* charges for transporting freight from one wharf or vessel to another or between a railroad station or delivery point and the waterfront; fees for *consular invoices, customhouse brokers' fees* and miscellaneous charges incurred in the preparation of shipping documents.

Other Terminal and Port Charges Upon Vessels

Pilotage service, with certain exceptions, is compulsory in foreign trade shipping for vessels sailing under register at ocean ports. Steamers licensed or enrolled for coastwise shipping are exempt, but coastwise sailing vessels are required to take on pilots. Great Lakes vessels with the exception of ocean going vessels navigating the St. Lawrence River, are not subject to compulsory pilotage and river craft operating in domestic trade commerce are also exempt. But when pilots are taken aboard either under compulsion or voluntarily, *pilotage* is collected.

Vessels in docking and undocking or in entering and clearing frequently require the services of tugboats, the *towage charges* of which vary with the number of tugs used, the net register tonnage of the vessels, the distance they are towed and the character of the towage service. At some ports *port warden's* fees are collected. A vessel may be obliged to pay *survey fees* and also local *health or quarantine fees* for fumigating services and for sanitary inspection. If engaged in foreign trade shipping, it may also have to pay various Federal charges, such

[2] See Chapter 34.

as *tonnage taxes, customhouse entrance and clearance fees, inspection, detention* and *fumigation charges.*

A very heavy private expense incurred by vessels at ports is the outlay for *bunker coal* or *fuel oil.* Other private charges may arise in connection with *launch hire;* employment of *watchmen;* use of *electric current;* purchase of *water, ballast, ship's supplies* and provisions; *ship dunnage* for use in cargo stowage; *telegrams* and *cablegrams; cooperage* services; *trimming cargo; dry-dock services; ship brokerage; customhouse brokers' fees; steamship agency fees;* and *freight brokerage.*

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CHAPTER 38

Passenger Transportation Services and Charges

As stated in previous chapters ocean passengers are carried mainly either on "express liners" or on "combination liners." Within each of these general types there is a wide range of vessels from the standpoint of size, speed and technical construction, and combination liners also vary as to their relative dependence upon passengers and cargo. They are on the whole less essential to international commerce than "cargo liners" and other cargo carriers, but they are important in ocean shipping because they make possible speedy and comfortable passenger travel and fast international mail services, and because they provide the fastest available freight services for varying amounts of general cargo. During period of war they also perform valuable military and naval services.

SIZE, SPEED, COMFORT AND SAFETY

Although operating costs have not been ignored, size, speed, comfort and safety have in general been the dominant objectives in ocean passenger vessel construction. More specifically, however, there have on several occasions been variations in the relative importance attached to these considerations. The *Mauretania* and *Lusitania*, which were the best known ocean express liners built before 1912, were relatively small in comparison with later vessels built for the North Atlantic passenger service, but they were luxurious and speedier than any previously-built large passenger vessels. The *Mauretania*, built in 1908, with a gross tonnage of 30,696 tons and an average speed of about 25 knots, in 1912 established a speed record of 4 days, 10 hours and 41 minutes from New York to Queenstown, a record which stood for almost twenty years.

Other trans-Atlantic vessels built during the immediate prewar period were constructed for size and comfort rather than for maximum speed. A number of vessels exceeding fifty thousand tons gross register were built at that time, largely in the belief that increased passenger

capacity would assure greater operating profits. The *Aquitania* of the Cunard Line, the *Olympic* of the White Star Line and the *Imperator*, *Vaterland* and *Bismarck* of the Hamburg-American Line were vessels of this type. After the war the last three were acquired by Great Britain and the United States and were renamed respectively the *Berengaria*, *Leviathan* and *Majestic*. The latter was 915 feet, 5 inches long and had a beam of 100 feet, a gross tonnage of 56,000, and a passenger capacity originally placed at 3,000. After the *Titanic* disaster in 1912, the safety factor also was emphasized.

After the war new construction for the trans-Atlantic trades, largely for reasons of economy, was for a while limited to vessels of considerably smaller tonnage. Few of the newer vessels exceeded a gross register tonnage of 35,000 tons. In 1929 and 1930, however, the *Bremen* of 51,731 gross tons and the *Europa* of 49,746, built by the North German Lloyd Line, again emphasized great speed as well as size, luxury and safety. The Italian Line shortly thereafter began operating the *Rex* and the *Conte di Savoia*. These vessels were also built for increased speed and the *Rex* has a gross tonnage of 51,062. The two German liners for a time established and held new trans-Atlantic speed records, but in 1933 the *Rex* made a record voyage from Gibralter to Ambrose Light at New York in 4 days, 13 hours and 58 minutes, at an average speed of 28.96 knots.

The present-day era of superliners having much larger tonnage as well as greater speed was now getting under way. The French Line completed the *Normandie* in 1935 and the Cunard Line the *Queen Mary* in 1936. The former having a length of 981 feet, 4 inches and a gross tonnage of 83,423, is equipped with engines of such vast power that in 1935, on her maiden voyage, she became the blue ribbon vessel with a trans-Atlantic voyage averaging 29.64 knots. The *Queen Mary*, with a length of 975 feet, 2 inches and a gross tonnage of 81,235, in August, 1938 captured both the eastward and westward speed records. The westward voyage from Bishops Rock, Scilly Islands to Ambrose Light was made in 3 days, 21 hours and 48 minutes at an average speed of 30.99 knots, and the eastward voyage was made in 3 days, 20 hours and 42 minutes at an average speed of 31.69 knots.

While these developments were taking place attention was being directed constantly toward greater comfort and safety in ocean travel. The huge superliners and many smaller ocean steamers are veritable

floating hotels, the major features of which with respect to sleeping accommodations, dining services, general comfort and pleasure of passengers are so widely know that no attempt will be made to discuss them here. Although speed is not a safety factor, much is being done to guard against marine disaster. Ocean passenger steamers, small as well as large, are built and equipped with a view to increasing their safety. Steel hulls, transverse and longitudinal water-tight bulkheads, steel double bottoms, two-, three-, and even four-screw propellers, lifeboats, rafts, and other life-saving appliances in adequate number, improved appliances for lowering lifeboats, wireless telegraph plants, fire-fighting and detection arrangements, trained crews for fire fighting and manning life-boats, recognized "rules of the road," improved navigation instruments, depth finders and other safety features have greatly increased the safety of ocean travel. Some have been adopted voluntarily by the navigation companies, while others are partly the result of government regulation. Vessels, hulls, boilers, engines, etc., moreover, are subject to government inspection, and many ships are inspected by the surveyors of vessel classification societies. The United States Government also charts ocean and coastwise routes, destroys derelicts, operates lighthouse and life-saving services, regulates wireless telegraphy on shore as well as at sea, flies storm signals and otherwise aids and regulates navigation so as to reduce the element of danger.

No trans-Atlantic superliners operate under the American flag and none is at present contemplated. The Maritime Commission has announced that in its opinion "the United States should not compete in the luxury-liner field. This type of vessel is believed to be economically unsound. The excessive investment, extreme variations in seasonal business, speed obsolescence and the added cost of securing extra speed all point to an unnecessarily high cost of transportation. The building of these vessels, at the expense of other, more economical ships, cannot be justified by the United States."[1] The Commission as well as the United States Navy has expressed preference for American trans-Atlantic passenger vessels similar to the *Manhattan* which is 668 feet, 4 inches long and has a gross register tonnage of 24,289. The new liner which is to replace the *Leviathan* of the United States Lines will have a length of 723 feet, a load displacement (not gross register) of 34,000

[1] United States Maritime Commission, Economic Survey of the American Merchant Marine (1937), p. 22.

tons and accommodation for 1219 passengers. It is noteworthy also that the recently constructed *Mauretania* of the Cunard-White Star Line has a gross tonnage of but 33,000 or 34,000 tons and was designed to maintain an average speed of but 22 knots.

In trades other than those of the trans-Atlantic, the better vessels engaged in regular passenger service are comparable in comfort and safety, but they are smaller and do not equal the speed of the superliners. There are a number of fine vessels exceeding 20,000 tons gross in some of these trades; many are somewhat smaller and there are also a few larger gross tonnages.[2] The volume of passenger traffic is so much smaller than that of the North Atlantic route that superliners are not feasible in the regular passenger trade. Large North Atlantic passenger vessels, however, have at times been operated on special cruises. Even the superliner, *Normandie*, has made several cruise voyages to Rio de Janeiro during winter seasons.

Passenger vessels operating to Puerto Rico and Hawaii are similar to vessels assigned to comparable foreign trade, some of them serving both insular and foreign ports. Those operating in the intercoastal trade and some of those engaged in regular coastwise shipping are moderate sized sea-going vessels. There are also many smaller coastwise passenger vessels and special types have been developed for use on certain inland coastwise routes.

Passenger vessels have fallen to a secondary position on the Mississippi River System and many other inland waterways, but special types of craft continue to operate there to some extent and also on various coastwise bays and tributary rivers. On the Hudson River passenger vessels operate between the port of New York and points as far inland as Albany and Troy.

Many passenger steamers continue to operate between Great Lake ports, some of them serving as packet lines in the transport of both cargo and passengers, and others conduct passenger business exclusively. Lake vessels equipped to carry passengers vary exceedingly as to size, speed, structure and methods of propulsion. The *Greater Detroit* and *Greater Buffalo*, which were the largest lake passenger vessels, but are no longer in service, were 550 feet long and capable of a speed of 21 miles per hour, and each was equipped to accommodate 1200 passengers.

[2] The *Empress of Britain* has a gross tonnage of 42,348 and a length of 733 feet, 3 inches.

Although screw propellers are common in Great Lakes shipping, these vessels are side-wheelers and they are equipped with double rudders designed to facilitate navigation in narrow channels.[3]

CLASSIFICATION OF PASSENGER SERVICES AND TRAFFIC

Ocean passengers were for many years divided into three standard classes: first, second and third for steerage, much as passenger travel is classified by European railroads. There were exceptions, however, even on the North Atlantic. Various large ocean lines before the World War further subdivided the lowest class of service into steerage and immigrant steerage, the former being of somewhat better quality. There were also a number of cabin ships on which the distinction between first and second class was abandoned, all passengers, except those traveling third class, being known as "cabin" passengers.

Drastic changes in classification of passenger services and traffic were later introduced as a means of promoting ocean travel. The principal immediate incentive was the heavy shrinkage of immigration which had for many years swelled the steerage traffic of the North Atlantic lines. When immigration to the United States was drastically restricted, efforts were made to stimulate the volume of non-immigrant passenger traffic. More vessels were converted into cabin ships and some excellent new cabin vessels were built. Second class which had never been popular with American travelers, was rapidly being abandoned on the North Atlantic route. The next step was the introduction of a "tourist class," which was originally known as tourist third class. This class of service proved so popular with an increasing number of American tourists that it eventually displaced second class service on the North Atlantic, and the second class accommodations of a number of ocean liners were assigned to tourist passengers. Although the *Rex*, *Conte di Savoia* and several smaller vessels retained a so-called "special class" service to Mediterranean ports, for a while, the scheduled sailing of the *Bremen* on April 24, 1934 marked the end of second class travel on the North Atlantic route. Some vessels operate entirely on the tourist class basis; others carry only tourist and third class passengers; still others carry first, tourist and third class passengers. It has, moreover, become a com-

[3] Corps of Engineers, Transportation on the Great Lakes (1937), p. 44.

mon practice on those North Atlantic liners which distinguish between tourist and first class passengers, to designate the latter as "cabin passengers."

The passenger classification practices of ocean lines operating on other ocean routes also vary. Second class service has not been abandoned everywhere, but there has been a tendency to displace it and to substitute tourist class service and also to designate all passengers other than those who travel third class, as either cabin or first class passengers.

Passenger vessels operating from the United States to our noncontiguous territories variously provide for first, cabin, second, tourist and third class passengers, not all vessels being on the same basis. Intercoastal passenger traffic consists mainly of first and tourist class passengers, but a few are reported as cabin and third class passengers. There is very little classifying of passengers on the regular coastwise routes of the Atlantic, Gulf and Pacific seaboards. Some coastwise lines, particularly those operating on relatively short routes, operate their vessels on a one class basis. Those operating in the long distance coastwise trades customarily provide but one class, called first class, for cabin passengers but in addition offer another restricted class of service designated by some lines as third class and by others as steerage.

Great Lakes passenger vessels operating in domestic shipping do not distinguish between classes of passengers. Nearly all Great Lakes vessels engaged in foreign shipping likewise operate on a one class basis. Practically all of these passengers are designated first class, the number of second and cabin class passengers being negligible. Passenger vessels operating on rivers also do not as a rule subdivide their passengers into distinct classes.

An outstanding development during recent years is the operation of cruise sailings. The term cruise is frequently applied to especially arranged tours on vessels operating in the regular line service, but is more aptly applied to especially scheduled voyages on vessels which have been withdrawn from this service. Many ocean vessels, including large North Atlantic superliners, operate on special cruises during the winter months, other vessels have been withdrawn from the regular line service for the making of special cruises during all seasons of the year. Some special cruises have been arranged solely on the basis of a sea voyage, but more recently they provide scheduled special sailings to foreign ports and inland trips designed to attract travelers who wish

to visit foreign lands. Some of them offer "all-expense" trips. In some instances the traveler lives aboard the vessel while it is in port; in others, hotel accommodations are provided together with other shore arrangements. Special cruises are variously arranged directly by the tourist departments of the steamship lines or by tourist and travel agencies. There have also been ocean cruises on the routes to Puerto Rico, Hawaii and Alaska, and various coastwise and Great Lakes cruises.

VOLUME OF PASSENGER TRAFFIC

In 1914 the ocean steamship passengers arriving and departing at American ports in international commerce totaled 2,692,269, of which 1,218,480 were foreign immigrants. Traffic volume had increased greatly since 1880 both in the steerage and cabin classes. During the war ocean travel, particularly in the North Atlantic route, was of course sharply curtailed, but during the decade 1920 to 1930 it recovered to an annual average of 1,500,000. Immigrant traffic which had long been the mainstay of trans-Atlantic liners, however, declined to a yearly average of but 449,550. Immigration had previously been curtailed somewhat by legislation as to personal requirements and prohibitions and the Chinese Exclusion Act of 1882 was a factor on the Pacific, but the Act of 1917, which was amended in 1921 and 1924, applied the principle of quotas to many foreign nations. The present quota basis which became effective July 1, 1929, provides that the quota of immigrants accepted from each quota country shall be equal to "a number which bears the same ratio to 150,000 as the number of inhabitants in continental United States in 1920 having that national origin bears to the number of inhabitants in continental United States in 1920," subject to a minimum quota of 100 for any nationality.

After 1929 the combined effect of restrictive legislation and business depression caused the number of alien immigrants to decline to 23,068 in 1933. By 1938 [4] it had recovered to 67,895, but the ocean lines obviously could no longer depend upon immigrant travel as a major source of passenger traffic. In 1937 [5] they carried 1,639,866 ocean pas-

[4] Secretary of Labor, Annual Report, fiscal year 1938.

[5] Maritime Commission, Water-Borne Passenger Traffic of the United States, fiscal year 1937.

sengers who were subdivided as follows: first class, 853,442; cabin class, 275,440; second class, 16,125; tourist class, 230,329; third class, 264,530. These traffic figures include 211,953 passengers who traveled on foreign tourist cruises.

The major efforts of ocean lines in the development of their passenger traffic can in general be summarized as follows: (1) They construct and operate vessels capable of performing excellent passenger services. (2) They have reclassified their services so as to make them attractive to different classes of passengers both as to service and fares. (3) They operate many attractive special cruises. (4) They advertise very extensively. (5) Many of them have improved their cuisine and have added many innovations for the comfort and diversion of passengers. (6) They maintain passenger traffic departments (see Chapter 32) and have connections with many outside passenger agencies to whom they pay commissions for the booking of passengers. In order to assure uniform treatment of all ocean lines and protect the holders of agency appointments against rebates to purchasers of tickets, passenger agents are required to observe regulations issued by the lines or by the conferences of which they are members. Many passenger agents are also tourist or travel agencies which not only book passengers but advertise extensively, arrange individual or personally conducted group tours, sponsor special cruises and in other ways promote foreign travel.

The total number of coastwise passengers, including short as well as long coastwise voyages, greatly exceeds the number carried by ocean liners operating in foreign shipping. Incomplete data seems to indicate that in 1937 over twenty-two million coastwise passengers, not including ferry passengers, arrived at and departed from the seaboard ports,[6] about 60 per cent of whom consisted of excursion passengers. Many coastwise trips are relatively short and vessels are able to make many voyages throughout the course of a year. Over three hundred million ferry passengers were carried at the various ocean ports of the United States in 1937.

The number of passengers carried on the Great Lakes and connecting channels is also relatively large. In 1929 a total of over twenty-eight million was reported, but the proportion consisting of ferry passengers was so large that the completion of a bridge in 1929 and a vehicular tunnel in 1930 between Detroit and Windsor, Canada, was largely

[6] Including Hawaiian passenger traffic.

responsible for a heavy decline. In 1938 the figure reported was 11,610,235, 59.7 per cent of whom were ferry passengers, 22.9 per cent were regular line passengers and 17.4 per cent were excursionists.

PASSENGER FARES

The principles governing the making of ocean passenger fares are generally the same as those stated in connection with ocean freight rates, subject to certain inherent differences between the nature of passenger and freight traffic. Over a given route fares are fixed at different amounts per passenger subject to a fourfold variation: (1) They are different via vessels depending upon relative speed, comfort and luxury and the general excellence of the service offered. (2) They vary according to the class of passage selected by the traveler, i.e., according to the passenger service classification previously referred to. (3) On a given steamer the cabin fares within a class vary for different cabins or staterooms according to their location, reservation for individual passengers, or other special considerations, such as size and excellence of furnishings. The de luxe suites provided on some ocean liners command extremely high fares. (4) The fares of many ocean carriers are sub-divided on a seasonal basis. In this case the lowest fares are effective during the winter when traffic reaches its lowest level, and highest during the summer when the volume of traffic is heaviest. Some lines also define an "Intermediate" period, during which their fares are maintained at a level somewhere between the levels of their summer and winter fares. This fourfold gradation of fares is due partly to considerations of what the traffic will bear and the relative value of the service rendered, and partly to cost differences.

Though ocean fares are usually fixed primarily at what the traffic will bear, the competitive forces affecting them differ somewhat from those influencing line freight rates. The force of international commercial competition and port rivalry, although by no means entirely absent, is not so prevalent as in freight transportation. Ocean fares, moreover, are not subject to tramp competition. Direct competition is limited to the lines themselves, and this is in some trades subject to control by conferences.

Prior to the World War there were at least twelve North Atlantic passenger agreements through which the heavy steerage traffic moving

between the United States and Europe was pooled and its fares established in conference, and through which minimum first- and second-class cabin fares were agreed upon. Pooling agreements involved an additional rate factor in that the steerage fares of some lines were at times advanced relative to those charged by others for the purpose of directing the volume of traffic so as to maintain the percentages allotted to each line. After the World War there were four major conferences in the passenger business moving between the Atlantic and Gulf ports of North America (including Canadian Atlantic ports) and the ports of the United Kingdom, Ireland and continental Europe,—the Atlantic Conference, the North Atlantic Passenger Conference, the Mediterranean Passenger Conference and the Trans-Atlantic Passenger Conference. The last named coordinates action and regulates matters other than the fixing of fares and commissions in the United States and Canada in connection with the agreements entered into by the other three conferences. A few passenger conferences also operate in other passenger trades, but their number has always been relatively small largely because, except on the North Atlantic route, the long-distance passenger traffic is secondary to the freight traffic of the passenger lines. It is controlled indirectly through their freight agreements. Any agreement concerning division of territory or ports, the number of their sailings, vessel tonnage or number of steamers influences passenger as well as cargo competition, and there are also a number of pooling agreements which include both freight and passenger traffic.

Ocean fares have fluctuated less, and have, on the whole, been maintained at a higher level than freights, both because of the difference in competitive conditions mentioned above and because of the higher capital, operating and maintenance costs of the passenger service. While the economies resulting from increased size of the vessels and efficiency of marine engineering were accompanied by lower freight rates, similar economies in passenger steamers were largely offset by the additional costs occasioned by increased speed, comfort, luxury, and betterments of the passenger service. There are times, of course, when ocean freights temporarily soar to levels which passenger fares cannot approach. The World War, for example, although stimulating an acute demand for freight tonnage, caused a pronounced shrinkage in the volume of the North Atlantic passenger traffic.

In insular shipping, fares are made as on comparable foreign shipping

routes, and, in intercoastal shipping the same general and specific rate factors apply, subject to the added influence of railroad and highway competition.

The fares of the regular coastwise, Great Lakes and inland waterway carriers are also influenced by cost of service and value of service, subject, however, to general differences as to specific rate factors. Speed, comfort and luxury influence them somewhat, but differences between the fares of particular vessels are less apparent. Fare variations according to classes of passenger service are less important because there is far less division of passengers into classes and in most instances but one class is provided for. Variations for different cabins, or staterooms are less pronounced than in ocean travel and many vessels operating on regular day voyages or on relatively short excursion trips make none, as cabins are not assigned. There is no general policy as to reduced seasonal fares, for many coastwise, Great Lakes and inland waterway carriers suspend operations entirely during the winter months due to ice and weather conditions or the inevitable shrinkage of passenger traffic to unprofitable levels.

An outstanding competitive factor not present in the making of fares to overseas foreign ports is direct rail and highway competition. This has become a major consideration in determining what the traffic will bear. Much of the passenger business of coastwise and inland water carriers depends upon pleasure travel and fares are made mainly to develop this traffic on a profitable basis. Even though many passengers are attracted by a trip via water routes, vacationists have the option of traveling to points of interest by rail or highway. Through rail and water routes are at times arranged, particularly when a world's fair or other attraction causes great numbers of pleasure travelers to visit points which can be reached by either water or land transportation.

The passenger fares of water carriers, the publication and filing of tariffs and the filing and approval of passenger conference agreements are subject to the same general regulatory provisions as those applicable in the transportation of cargo.[7] Joint rail and water rates in interstate commerce are subject to regulation by the Interstate Commerce Commission. The port-to-port fares of river and inland water carriers, except

[7] See Chapters 36 and 44. The order of the Secretary of Commerce of July 12, 1935, as to the filing of tariffs by all common carriers engaged in foreign trade shipping does not, however, apply to passenger fares.

those of the Great Lakes, are not regulated by the Government, but those of common carriers operating in foreign commerce (except ferry-boats running on regular routes) and of common carriers operating on the high seas or Great Lakes on regular interstate routes are subject to regulation by the Maritime Commission under the provisions of the Shipping Act of 1916 as amended. It will be recalled that the regulatory provisions vary in foreign trade shipping, in coastwise shipping and in Great Lakes shipping.

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CHAPTER 39

Mail Transportation Services by Water

Ocean passenger steamship lines are important, not only because of the passenger and freight-cargo services provided by them and their military and naval uses, but also because most of the world's gradually growing international mail traffic is carried in passenger vessels. Aside from overland mail services to Canada, Mexico and Cuba and a small but growing volume of foreign air mail traffic, they and the occasional cargo vessels which sometimes carry mail to overseas destinations not served by passenger lines provide the transportation service essential to the movement of the mail between the ports of the United States and those of foreign countries and our outlying possessions.

INTERNATIONAL MAIL SERVICES

The international mail service, which is so largely dependent upon ocean carriers, is essential to international commerce and to the maintenance of relations between different countries and peoples. It is governed in general by the Universal Postal Union, the central bureau of which is at Berne, Switzerland, and by the Postal Union of the Americas and Spain (formerly the Pan American Postal Union), the central office of which is at Montevideo, Uruguay. They are based upon international conventions and their basic rules are subject to change in congresses which are attended by delegates from postal union countries. The central bureau of the Universal Postal Union collects, publishes and distributes postal information, gives opinions on current disputes, makes known proposals made between congresses concerning modifications of postal union rules and gives notice of changes adopted. The duties of the central office of the Postal Union of the Americas and Spain, in its restricted area, are of substantially the same character.

The international parcel post service is of particular importance to foreign trade as a means of shipping packages of merchandise. It is one of the methods of overcoming the handicap of minimum ocean

bills of lading, the other methods being the international express service performed by ocean freight forwarders and the parcel receipts issued by some ocean steamship lines. An international parcel post convention has been effected through the Universal Postal Union but the United States is not a signatory because of the complications and exceptions involved. The United States is a party to the general parcel post agreement of the Americo-Spanish Postal Union, but the more general policy has been the negotiation of parcel post agreements with individual nations. Such agreements have been made with all but a few foreign countries. The maximum weight per parcel permitted in these agreements varies from eleven to as much as fifty pounds. The agreements also specify different maximum dimensions. The charges for ordinary parcels are usually at a fixed rate per pound or fraction thereof. Parcels mailed to some countries are in addition subject to transit or terminal charges which vary for parcels of different weights. The international parcel post services to various foreign countries also makes provision not only for ordinary parcels, but for insured parcels, registered parcels and C.O.D. service. Detailed variations as to rates, dimensions, excluded articles, etc., are published in the United States Official Postal Guide.

The parcel post regulations of a receiving country may require a commercial invoice, consular invoice or certificate of origin, but the arrangements made with most countries simplify customs formalities. The United States Government requires the attachment of a *customs declaration* to every parcel post package sent to foreign countries, and if the parcel is valued at $25.00 or more it must be accompanied by a *postal export declaration.* The customs regulations of France also require a special customs declaration. The postal regulations of some countries permit the attachment of a *dispatch note* on which an alternative delivery address or other instructions as to the disposition of parcels not deliverable as addressed may be stated, and on the reverse side of which the addressee is requested to sign a receipt. Incoming parcels containing dutiable merchandise are subject to the regular customs duties.

The international parcel post service is utilized not only by mail order houses, but by many other exporting and importing firms and by individuals. Exports of recorded parcels valued at $25.00 or more and estimated unrecorded parcels were valued at about fifty millions

annually before the business depression and in 1936 they were valued at about $21,611,000.[1] Imports of recorded and estimated unrecorded parcels varied from about one hundred and thirty to one hundred and fifty millions before the depression and no parcel post import statistics have since then been published.

In the trade of the United States with the outlying insular possessions, the Canal Zone and Alaska and to American naval vessels stationed abroad, the domestic parcel post service, discussed in Chapter 14, is applicable.

The international mail service also takes care of the great volume of letter and other mail matter which regularly moves between the United States and foreign countries. The classes of mail, other than parcel post, provided for by the Universal Postal Union apply except when specifically excepted. They included *letters* at 5 cents for the first ounce and 3 cents for each additional ounce; *postal cards* at 3 cents for single cards and 6 cents for double cards; newspapers, periodicals and other *printed matter* at 1½ cents per 2 ounces subject to a weight limit of 4 pounds, 6 ounces; *books*, single volumes, at 1½ cents per 2 ounces, subject to a weight limit of 6 pounds, 9 ounces; *commercial papers*, such as bills of lading, invoices, etc., at 1½ cents per 2 ounces subject to a minimum of 5 cents and a weight limit of 4 pounds, 6 ounces; and *samples* of merchandise, without commercial value, at 3 cents for packets not in excess of 4 ounces and at 1½ cents per 2 ounces for heavier packets, subject to a weight limit of 18 ounces.

The exceptions referred to have become numerous. The domestic letter rate of 3 cents per ounce applies to Canada, Newfoundland and Labrador, and the single postal card rate to these countries is 2 cents. The domestic letter rate also applies to Spain and various Spanish possessions and to the many Latin American countries who are signatories of the Americo-Spanish Postal Union convention. The postal card rates to these countries, moreover, are 2 cents per single card and 4 cents for double cards, and the weight limits applicable to newspapers, periodicals, books and other printed matter differ somewhat for different member countries and are higher than those of the Universal Postal Union.

In 1930 the Universal Postal Union provided for a new class of

[1] Recorded exports as per Statistical Abstract; estimated unrecorded exports as per Balance of International Payments of the United States.

international mail matter known as *small packets* of merchandise which are, however, only acceptable for mailing to certain countries. They are subject to a weight limit of 2 pounds, 3 ounces and a postage rate of 3 cents per 2 ounces, subject to a minimum of 10 cents. They may not contain coins, bank notes, gold, precious stones or other excluded articles, and a *customs declaration* is required to be enclosed in each small packet. This class of international mail supplements but is not a part of the international parcel post service.

The international mail service also provides for registration, insurance, C.O.D., special delivery reply coupon and money order services, subject to exceptions and varying charges and rules. The postage charges and regulations applicable in the foreign air mail service are discussed in Chapter 22.

OCEAN MAIL TRANSPORTATION

Ocean carriers who transport the international mails are paid either by special contract or by a payment based upon the amount of postage received by the Government. Contract mail payments continue to be made by various foreign countries as a part of their merchant marine subsidy programs and such payments were made to American contract carriers by the United States Government until ocean mail contracts were brought to an end June 30, 1937.

As ocean mail contract payments contain an element of merchant marine subsidy they were limited to American vessels operated by such carriers as succeeded in obtaining mail contracts. The Act of 1891 authorized the Postmaster General to enter into contracts running from five years to ten years and it contained requirements as to American construction, ownership and registry, and the manning of the vessels by American officers and required percentages of American crew members. Payments were based upon a classification of contract vessels into four classes varying in gross tonnage between 1500 and 8000 tons or more and in speed between 12 and 20 or more knots. All except class four vessels, moreover, were required to be steamships constructed of iron or steel. Contract payments ranged from 66⅔ cents per nautical mile for vessels of class four to $4.00 per nautical mile for the larger and faster vessels of class one, "by the shortest practicable route for each outward voyage." The payments did not depend

upon the volume of mail actually carried. For some years from five to seven contracts authorizing a combined yearly payment of about one million dollars were in effect.

This act was amended in the Merchant Marine Act of 1920, section 7 of which directed the Shipping Board to determine what American steamship services should from time to time be established for the purpose of promoting commerce and an adequate postal service, and authorized the Postmaster General, notwithstanding the act of 1891, "to contract for the carrying of the mails over such lines at such price as may be agreed upon by the Board and the Postmaster General." Section 24 directed the Board and the Postmaster General to determine just and reasonable rates of compensation for American-built vessels documented under the laws of the United States, and authorized the Postmaster General to enter into mail contracts with such vessels. Both sections, however, were contingent upon congressional appropriations and mail payments of this kind were made to but a few lines. In 1928 but six ocean lines received payment under this law.

The Act of 1891 and the mail contract clauses of the Merchant Marine Act of 1920 were superseded by the Merchant Marine Act of 1928, the major objective of which was the promotion of the American merchant marine. It continued the policy of subsidy payments in ocean mail contracts, the mail payments authorized and the amounts made available, however, being vastly greater than those provided for in previous mail contract laws. It directed the Postmaster General to certify to the Shipping Board the ocean mail routes on which mail contract services should be established to serve the various ocean seaboards equitably, to carry the volume of mail moving at the time, the estimated volume of the next five years, the times of departure deemed most desirable and other requirements considered essential to an adequate ocean mail service. The Shipping Board in turn certified the type, size and speed of vessels considered most desirable for particular trades, but in doing this it considered not only the international mail service, but also the needs of international commerce and travel. This act also contained requirements as to public notice by advertisement and competitive bidding; citizenship of officers and crews; American ownership and registry; steel construction; serviceability of vessels as auxiliary cruisers or for other military and naval uses during a war emergency, and other requirements. The payments ranged from $1.50

to $12 per nautical mile for seven different classes of vessels, the minimum gross tonnage of which varied from 2,500 to 20,000 tons and the speed of which varied from 10 to 24 knots. Payments in excess of $12 per nautical mile, moreover, were authorized for class one vessels of at least 20,000 gross tons capable of a speed in excess of 24 knots.

The mail contract payments made under the act of 1928 rose from $7,612,976 in 1929 to a high point of $26,948,997 in the fiscal year 1934, and in the fiscal year 1937 they amounted to $21,762,245. A total of $175,911,832 were paid to as many as thirty-one ocean lines.[2] Although these larger payments were obviously intended primarily as subsidies to the American sea-going merchant marine rather than as payments for carrying the international mails, they were criticized because they were entirely out of proportion to the volume of mail carried. The mail contracts were also criticized because they did not adequately assure the future of the merchant marine, they did not provide for necessary cargo lines which carried no mails, they did not in all instances conform fully with the requirements as to competitive bidding, and they did not safeguard the uses to which the contract payments were put.

In the Merchant Marine Act of 1936, the United States, therefore, abandoned the mail contract plan. It substituted operating and construction differential subsidies, which, as discussed in Chapter 44, are paid for the announced purpose of promoting the merchant marine without in any way being dependent upon mail payments. The Maritime Commission continued temporary subsidies to seventeen ocean lines but the Act required all ocean mail contracts to be terminated, effective June 30, 1937.

Since then the United States Post Office has paid all ocean carriers for carrying the international mails on a non-contract basis, just as foreign lines and American lines not operating under mail contracts had formerly been paid. Payments to American vessels carrying foreign mails are limited to the full postage on the mails carried, now at the rate of 80 cents per pound for letters and postal cards and 8 cents per pound for other articles. The compensation to foreign-flag vessels is in accordance with the sea transit rates prescribed from time to time by the Universal Postal Union. The Merchant Marine Act of 1936 pro-

[2] Maritime Commission, Economic Survey of the American Merchant Marine (1937), pp. 78-80.

vides that "All mail of the United States carried on vessels between ports which it is lawful under the navigation laws for a vessel not documented under the laws of the United States to carry merchandise shall, insofar as practicable, be carried on vessels of United States registry." The extent to which the mails will be carried on American-flag vessels will depend largely upon the success of the merchant marine program discussed in Chapter 44.

Various additional payments aside from payments to air-mail carriers, which are discussed in Chapter 22, are incurred for the transportation of the foreign-mails. "Sea-post service" is maintained on many ocean vessels (38 in 1937) for the distribution of mail at sea and to register mail, sell postage stamps and insure articles. "Navy mail service" is in operation on many naval vessels and at a number of domestic and foreign-shore stations. Miscellaneous expenses are incurred in connection with steamboat transfer services at some American ports, indemnities for registered mail, the cost of carrying mail of American origin across the Isthmus of Panama by rail, expenses incurred in connection with the Universal Postal Union and the Americo-Spanish Postal Union and the salaries of the postal officials in charge of the Division of International Postal Service.

DOMESTIC TRANSPORTATION OF MAIL BY WATER

The transportation of domestic mails by water is unimportant in comparison with the railway mail service described in Chapter 14. On June 30, 1938, however, mails were carried on 195 power-boat routes at a total expense for the fiscal year of $1,157,361.[3] The payments on 183 of these routes, covering 20,606 miles, were made under contracts which were entered into after advertisement and competitive bids. Power-boat service is authorized in four defined contract sections. Payments for the nine additional power-boat routes were authorized on a pound-rate basis. The number of power-boat routes is gradually declining.

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CHAPTER 40

State and Local Aid and Regulation of Water Transportation

The relation of government to transportation by water is a two-fold one of aid and regulation, more emphasis being placed upon aid than upon regulation. Nature has provided the United States with an extensive system of inland waterways that include the Great Lakes, the rivers that flow into the Atlantic, the Ohio, Mississippi, Missouri River system in the broad territory between the Allegheny and Rocky Mountains, and the Columbia and other streams tributary to the Pacific. To be made useful for navigation the natural waterways require canalization, the flow of water in the rivers must be regulated, and, so far as practicable, the dissociated systems need to be connected by navigable waterways of appropriate dimensions. Thus government aid to inland navigation includes the deepening and widening of river channels, the construction of dams, the building and operation of locks, the enlargement of the natural channels connecting the Great Lakes, the construction of such canals and locks as are required to coordinate all the five Great Lakes into a unified waterway, the construction of canals to connect the Great Lakes with the Atlantic and the Mississippi River.

All waterways, whether they be inland rivers and lakes or the bays and estuaries that unite the ocean with the seaports, are made of service to navigation by the construction of harbors and waterfront terminals. The harbors and the channels that connect them with the ocean and inland waterways are provided by the government, usually the Federal Government, at public expense; while the waterfront terminals are partly of private and partly of public construction and ownership, the practice varying with different ports. Canal construction and operation, formerly the work of corporations and the states, are now partly state but increasingly Federal Government enterprises.

The transportation services upon the waterways made navigable or created by the Government are performed mainly by common, contract and private carriers. On the Ohio River and the Great Lakes the major

share of the traffic is that of large coal, ore, iron and steel, and oil companies that operate vessels as a part of their industries. On some inland waterways, and in the coastwise services, common and contract carriers perform the larger share of the services. During and since the World War, the United States Government has operated a barge-line service upon the Mississippi River below St. Louis, and between New Orleans, Miss., and Birmingport on the Warrior River in Alabama. This service has been extended to include operations upon the upper Mississippi between St. Louis and St. Paul, between the Mississippi River and Chicago by way of the Illinois and Michigan Canal, and upon the Missouri River to Kansas City. The avowed purpose of the government operation of these barge services was to build up the services and put them on a profitable basis, and then to sell the business and equipment to private buyers. The result, however, has been to demonstrate that it is only under exceptional conditions that river-barge transportation can be profitably performed in competition with railroad transportation. There is no present prospect that the Government will be able to sell out the Federal Barge Line to private interests under the terms of sale stipulated in the statute under which the Barge Line operates.

Government regulation of transportation and carriers by water, as will be pointed out in a later chapter, is but partial. The necessity for regulation of railroads was recognized by the state and national governments more than a half century ago. The states and the Federal Government have now provided for the comprehensive regulation of intrastate and interstate motor carriers; and, in 1938, Congress brought air transportation and carriers under Federal regulation. Ultimately domestic carriers by water will presumably be as definitely and fully regulated as are carriers by rail, road and air, indeed, it is expected that legislation providing for such regulation will be enacted in 1940. This is highly desirable.

The present chapter will discuss briefly both aid and regulation of water transportation by the state and municipal governments, while succeeding chapters will deal in turn with Federal aid to inland waterways and coastwise transportation, with Federal aid to ocean transportation and shipping, with the general mercantile marine policy of the United States and other countries, and with the actual and needed Federal regulation of transportation and carriers by water.

POLICY OF THE STATES CONCERNING INLAND WATERWAYS

New York State created the Erie Canal. It was begun in 1816 and completed in 1825, and extended from Troy on the Hudson River to the Niagara River and to Buffalo and Lake Erie. Thus the Great Lakes and the Atlantic were connected by a canal and river waterway. What New York did aroused Pennsylvania to action, and she began a system of "public works" in 1823, the core of which consisted of a rail-and-water route from Philadelphia to Pittsburgh. This was completed in 1834 and consisted of a railroad from Philadelphia on the Delaware to Columbia on the Susquehanna, of a canal along the Susquehanna and Juniata rivers to Holidaysburg, of a portage railroad that took canal barges over the mountains to Johnstown, and of a canal from there to Pittsburgh. This trans-Allegheny route provided an expensive means of transportation between the East and the Ohio River; but it performed a useful service for twenty years, when it was superseded by the Pennsylvania Railroad whose line from Philadelphia to Pittsburgh was opened for through traffic in 1854.

Numerous states other than New York and Pennsylvania engaged in river canalization and canal construction from 1815 to 1850. In most cases the financial results were unfortunate. Traffic and revenues were overestimated. The total length of canals constructed was 4468 miles; the cost to the states, up to 1880, had been $214,041,802; and by that date 1956 miles had been abandoned. Since 1880, most of the state canals have been sold or given up. Those operated by the states latterly have been the one in New York connecting the Great Lakes and the St. Lawrence River with the Hudson River, and the one in Illinois connecting Lake Michigan with the Mississippi River.

The superiority and adequacy of railroad transportation during the 1880's and 1890's reduced the traffic on the canals of that time, and even on the canalized rivers, to a small volume. During the decade following 1900, as will be explained later, there was a revival of interest in inland waterways. New York, in 1901, after abandoning some of the minor parts of her canal system, began the enlargement of the more important parts into her present system of barge canals having a depth of 12 feet, which depth for the Erie Canal Division is now being increased to 16 feet by the Federal Government. The Federal Govern-

ment, along with its recent expansion of functions and activities, has taken over canal construction work. The Illinois and Michigan Canal, although still a state waterway, was enlarged to a 9 foot waterway with the financial aid of the United States; and the Federal Government has acquired and is enlarging the Cape Cod Canal and the Chesapeake and Delaware Canals, and has created an intracoastal waterway from Hampton Roads to the southern part of Florida. The Federal Government's inland waterways policy will be discussed in the following chapter.

STATE AID TO NAVIGATION AT SEAPORTS

Ports, whether on the Great Lakes or on the seaboard, to be of service to shipping and commerce, must have channels of approach, harbors of adequate size and depth, and waterfront terminal facilities appropriate to the needs of commerce and carriers. In general, the Federal Government dredges, marks and maintains the ship channels to the harbors, constructs the necessary breakwaters and usually assists in dredging the harbors. Congress made its first appropriation for harbor improvements in 1822. Prior to that date, the Federal Government's aid to navigation had been limited to the construction of lighthouses, the states in some cases being allowed to levy a tonnage tax upon vessels to secure funds for navigation and harbor improvements. The Federal appropriations for harbors did not need to be large until the use of steam power and steel construction brought about the use of vessels of ever-increasing size and draft. The industrial development of the country and its enlarging commerce have also increased the number of ports requiring assistance. Beginning with 1870, Congress has made regular and liberal appropriations for the improvement of harbors. In some instances, Federal appropriations for harbor improvements have been made contingent upon the execution by the interested state or municipality of certain specified work or the addition of certain water frontage and terminal facilities.

For the most part the business interests and the local and state authorities at the several ports provide terminal facilities, the full use of which requires additional channel and harbor improvements by the Federal Government. These facilities include wharves, piers and docks of such number and capacity as are required to accommodate commerce

and shipping. The kinds of facilities needed are determined by the character of the traffic to be handled, ore, oil, general cargo and other kinds of traffic each having need for appropriate facilities for transfer and storage. Prior to about 1900, practically all such facilities were provided either by the large industries using the ports, or by railroad and steamship companies; but during the past 40 or 50 years, as will be explained later, the tendency has been to supplement, or replace, private terminal facilities with public ones that may be operated by public authorities or may be leased to shippers and carriers. Both states and municipalities deem it necessary to emphasize public ownership and control of the development of their large ports in order thereby to increase the variety and volume of commerce and to be of assistance to production and trade.

PILOTAGE, QUARANTINE, AND POLICE PATROL

Before the national government was established each state had its laws and regulations concerning the pilotage of vessels into and out of its ports. Accordingly, in 1789, Congress affirmed the pilotage laws of the states by providing that "until further provision is made by Congress all pilots in bays, inlets, rivers, harbors, and ports shall continue to be regulated by the laws of the states wherein such pilots may be, or with such laws as the states may respectively enact for the purpose." Congress has, however, supplemented and in some respects modified the state regulation of pilotage. Some ports, such as Philadelphia, Pennsylvania, and Portland, Oregon, are reached by rivers that form state boundaries. The master of a vessel navigating the Delaware or the Columbia River may not give preference to the pilots of one state over those of another, but must take the pilot first offering his services; and the associations of pilots at the several ports regulate the sequence of the service of their members. The United States navigation laws also require the captains and mates of steamers engaged in the coastwise and intercoastal services to qualify as pilots and receive Federal licenses. They are thus not required to take on pilots when entering or clearing the ports of the United States. Whether they engage a pilot will depend upon their judgment, or that of the steamship company, as to what is the wiser and safer policy to follow.

Each state having ports within its limits provides for the control over

pilots and pilotage by establishing a board or authority, such as the Pennsylvania Board of Commissioners of Navigation for the Delaware River. Each board provides for the examination, licensing and control of the pilots within its jurisdiction. The rates charged for pilotage services are fixed by the state legislatures.

Each state has the authority under its general police powers to adopt such measures, including the enactment of quarantine laws, as it may deem necessary for the protection of the health of its citizens. The Federal Government also has power to enforce quarantine regulations, in exercising control over interstate and foreign commerce. Until 1879, when there was an outbreak of yellow fever in the southern states, Congress left to the states the adoption and enforcement of measures to protect public health; but since that time, with the cooperation of the states, the National Government has broadened its public health regulations, including among other matters the enforcement of the inspection and quarantine rules regarding shipping. The present practice as to quarantine regulations and the reasons therefor are well described in the following statement, made in 1934, by the Assistant Surgeon General of the United States Public Health Service:

Since 1921, the Public Health Service has administered the quarantine functions at all United States ports including those in the insular possessions. In the period between 1878 and 1921 the administration of this function was gradually delegated and transferred to the Federal Government (Public Health Service) successively by the several states. This was in part due to a growing need for uniformity in quarantine procedure at all United States ports, reflecting in large measure a growing consciousness of the international aspect of such function.

An important, and by no means inexpensive, aid to the commercial activities and ship operation at the larger ports is that of police supervision and fire-boat patrol. What is involved in policing a large port and its shipping and terminals is indicated by the following statement concerning the port of New York: [1]

The policing of the portion of the harbor under the jurisdiction of the city and state of New York is directed by the local Commissioner of Police. The police department conducts the actual harbor control work through a harbor squad equipped with a number of patrol boats. Under normal conditions from

[1] From Transportation by Water by E. R. Johnson, G. G. Huebner and A. K. Henry (1935), p. 471. Chapter XXIX, pp. 461-471, of the volume deals with "Aid and Regulation of Shipping by the States and Municipalities."

seven to ten boats patrol the harbor continuously. The harbor squad is engaged in boarding incoming vessels when necessary, in taking off prisoners, in attending and aiding at fires along the river front, in keeping order on excursion steamers, in assisting vessels in distress, in recovering of drowned persons, in preventing stealing, as far as posible, from barges, vessels and wharves within the harbor, and in general in enforcing the laws and ordinances of the city.

To provide fire protection the City of New York maintains 10 fireboats that are stationed at points from which they operate most efficiently. The port of New York covers such a large area and has such great commercial and shipping activity that its patrol and protection are exceptionally difficult, but at each large port the municipal police authorities render a valuable aid to commerce and shipping.

THE REGULATION OF WATER TRANSPORTATION AND CARRIERS BY MUNICIPAL AND STATE AUTHORITIES

In the discussion of Water Terminals in Chapter 37, it was explained that from the standpoint of the ownership of terminal facilities and of harbor development and administration, there are four classes of ports. There are (1) a limited number of private ports that have been created by transportation or terminal companies for the use of the shipping public, or by industrial concerns for use in their own business; (2) an increasing number of public ports at which the facilities are provided and owned mainly by the states or municipalities; (3) the semi-public ports, which include the majority of the ports in the United States, and at which some of the facilities are privately owned while the other facilities are owned by a state or municipality; and (4) public trust ports whose ownership, development and administration have been entrusted by public authority to a public trust or board usually composed of representatives of the municipality and of the commercial organizations and interests at the port. The agencies by which the state and local authorities develop the ports and regulate their use have been sufficiently described in Chapter 37. Officials of the Federal Government, as well as state and municipal officers, exercise regulatory authority at most ports.

The foregoing brief account of American practice is sufficient to

show the industrial and commercial importance of state and municipal development and administration of navigation and port facilities. The increasing participation of the state and city governments in providing and operating port facilities, and the increasing activity of the Federal Government in the improvement and extension of inland waters are the natural result of the increase in commerce and of the growing importance of interstate and international commerce as compared with that of a local character. With the economic and commercial development of the United States, the local governments, state and municipal, and the Federal Government have, in providing adequate port and navigation facilities, a task of increasing magnitude and importance to be performed by effective cooperation and by logical division of their responsibilities.

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CHAPTER 41

Federal Policy Concerning Inland Waterways

Most natural inland waterways are interstate in extent, and their improvement for navigation is primarily to enable them to be of service to interstate commerce. Canals, also, are constructed to connect or extend interstate waterways; and, for that reason, canal construction has largely passed from the states to the Federal Government. Thus, with the exception of the development and administration of ports and terminal facilities, it is the inland waterways policy of the national government rather than the policy of the states and municipalities that is of major importance and that requires the more detailed discussion. The subject is so comprehensive that the presentation must be limited in scope.[1]

The procedure followed by the Government in improving and extending the navigable channels of inland waterways begins by action of Congress directing the Corps of Engineers of the United States Army to make surveys of designated waterways, and to report whether improvements are or are not advisable. The several surveys and reports made by the Engineer Corps are reviewed by the Board of Engineers for Rivers and Harbors. The recommendations of the Board are transmitted by the Chief of Engineers, with an expression of his views, to the Secretary of War who sends the reports to Congress, which decides what works shall be executed. Construction work is carried out by the Corps of Engineers, when and as the necessary funds therefor are made available by Congressional appropriations.

In 1921, by adopting the Budget and Accounting Act, Congress took a long step forward. This legislation which had been recommended by President Taft, nearly a decade earlier, provided for submission by the President to Congress, at the opening of each annual session, of a budget which itemized all expenditures recommended as necessary

[1] For a fuller discussion, consult Government Regulation of Transportation, by Emory R. Johnson (1938), Chap. XVIII, pp. 409-452, on "Government Aid to Inland Waterways."

and desirable. The budget thus contains a recommendation as to the amount needed for "river and harbor improvements." The Rivers and Harbors Committee of the House of Representatives, having before it the budget recommendation as to total appropriations for river and harbor improvements and canal construction, prepares a bill authorizing the execution of specified projects. This bill, when and as adopted by the House of Representatives, goes to the Senate and then follows the normal course of legislation. In this manner specified improvements (comprising a large number) are authorized. The execution of the authorized works, however, requires the appropriation of funds, and it is the amount of appropriations that determines the extent and scope of the construction work that may be done. Appropriation bills originate with the House Committee on Appropriations, and Congress grants a lump-sum allowance for "rivers and harbors." The distribution among the authorized works of the total amount thus appropriated is made by the Board for Rivers and Harbors and the Chief of Engineers of the United States Army. Thus the amount that is actually allocated to each work is determined by officials presumably not subject to political pressure.

The development of inland waterways should obviously be in accordance with a definite plan for the creation, so far as practicable, of a national system of navigable waterways constituting a part of a general coordinated system of transportation by railroad, highways, waterways, pipelines and airways. Some effort has been made to formulate such a plan. President Hoover had in mind a "net-work of transportation" by lakes, rivers, and canals. It was while he was Secretary of Commerce that Congress, by the Rivers and Harbors Act of January 21, 1927, made an appropriation for a survey of, and report upon, 200 listed streams. A preliminary report upon a comprehensive plan for the improvement and development (for navigation and other purposes) of the rivers in the United States was made by the Corps of Engineers of the Army, and was submitted to Congress by the Secretary of War in June 1934. The discussion and criticism of the waterways policy of the United States government will be presented later in another connection.

FEDERAL POLICY CONCERNING THE IMPROVEMENT AND USE OF INLAND WATERWAYS.

The Federal Government's increasing interest, since 1900, in the development and use of inland waterways, and the enactment of legislation have been brought about not only by impersonal and disinterested forces, but also by the influence exerted by localities, shippers, and industries that seek local or individual benefits from the free use of water transportation facilities provided at the expense of the general public. Such special interests seeking the extension and improvement of waterways have been well organized and effective.

Two extraordinary occurrences have largely influenced the Federal Government's activity in connection with inland waterways. One was the World War which created an abnormal demand for increased transportation facilities. The Government organized barge services upon canals in New York state and elsewhere, and established a regular barge-line upon the Mississippi and Warrior Rivers. This required a considerable investment by the Government in equipment and facilities, of which the Government was in possession, when, by the Transportation Act of February 28, 1920, it withdrew from the war-time operation of the railroads. Those benefiting from the Government's operation upon waterways did not wish the service discontinued, and, accordingly, the Act of 1920 provided that "all boats, barges, tugs and other transportation facilities on the inland, canal, and coastwise waterways" should be "transferred to the Secretary of War, who shall operate or cause to be operated such transportation facilities so that the lines of inland water transportation established by or through the President during the Federal control shall be continued." The Government soon brought to an end its services upon canals, but barge-line operation upon the Mississippi and Warrior rivers was continued. As has been stated in a previous connection, Congress by an Act approved June 2, 1924, chartered the government-owned-and-managed Inland Waterways Corporation which now operates not only the original services between St. Louis and New Orleans and between New Orleans and the Warrior River, but also services on the Missouri River to Kansas City, on the Upper Mississippi and between the Mississippi River and Chicago via the Illinois River and the enlarged Illinois and Michigan Canal. The ostensible purpose of these government operations upon inland water-

ways has been to build up the services and then to sell the facilities and equipment to one or more private carriers; but the conditions of sale set forth in the Inland Waterways (Denison) Act of 1928 make such sale impossible. Those most responsible for the present policy of the Government have shown no desire to have the Government cease operations, at least for some time to come.

Another occurrence that has brought about a great increase in government expenditures upon inland waterways has been the prolonged business depression that began at the end of 1929. Acting upon the theory that large expenditures upon public works would not only provide for the employment of men upon such works, but would also stimulate industrial activity and thus cause an increase in employment by private industries, Congress has been liberal in its appropriations for rivers and harbors and has placed at the disposal of the President, and thus of certain cabinet officials, large sums for public works. Large appropriations have also been made for the work of the Tennessee Valley Authority. A summary will presently be given of the large expenditures being made upon inland waterways and a brief statement will be made concerning each of the main waterways now being improved or constructed. Waterway improvements—temporarily it is to be hoped—became a part of the program adopted for the lessening of unemployment and for "pump-priming" to increase the volume of business activity.

As has been indicated, the improvement of rivers for navigation purposes has recently become a part of the larger program of developing and utilizing the country's water resources. Power development, flood control, the irrigation of semi-arid lands, the regulation of low-water and high-water stream flow, these as well as, and more than, increased navigation facilities are the present aims of waterway improvements. Navigation betterment has in several instances become incidental to power development and stream control, either one of which may be of greater social benefit than the canalization of the streams upon which the expenditures are made. There is manifest wisdom in planning for the development and utilization of the natural resources available in the inland waterways of the United States. That such plans should be so made and so carried out as to be helpful rather than harmful to private enterprise and industrial development is equally manifest. It will be best for the Government to minimize its

business activities and to assist private initiative and enterprise to function more efficiently in the production and distribution of wealth.

SUMMARY OF EXPENDITURES UPON INLAND WATERWAYS

Down to and including 1932, the funds spent upon waterway and harbor improvements were derived solely from the appropriations by Congress for "rivers and harbors." From 1933 to 1938, expenditures included not only the appropriations for rivers and harbors but also the large sums that were allotted from Federal Emergency Relief Funds and from funds placed at the disposal of the Public Works Administration. This accounts for the very great increase in expenditures upon inland waterways during the last few years.

The total appropriations for rivers and harbors prior to 1933, amounted to about two billion dollars ($1,941,779,999). If from this total there be deducted the amounts expended for purposes other than navigation improvement (mainly flood control) the expenditures for rivers and harbors becomes $1,534,862,753. The corresponding total for the three years 1933-1935, was $344,297,093, and for the three years ending with 1938 the amount was $672,279,522, making the total to 1939 $2,551,439,378. Of the amounts appropriated during the 110 years from 1822, when the first Federal appropriation for harbor improvements was made, down to 1932, nearly one-third, or 33 per cent, was spent during the seven years following 1925. The total of the appropriations and allotments for the three years 1933-1935 were 22.4 per cent of the total sum appropriated during the preceding period of more than a century; while appropriations and allotments for the three years ending with 1938—$672,279,522—were 35.7 per cent of the total sum made available during the previous 116 years.

To determine how much has actually been spent on inland waterways—lakes, rivers and canals—it is necessary to deduct from the above totals the amounts devoted to seaboard harbors and channels. After making such deduction, it is found that the total amount spent by the Federal Government up to June 30, 1938, upon lake harbors and channels was $273,431,046, and upon rivers and canals was $1,467,033,079, the combined total being $1,740,464,125. The sudden large increase in expenditures upon inland waterways other than the Great Lakes,

beginning with 1933, is indicated by the fact that such expenditures for the three years ending with 1935 were nearly 46.5 per cent of the total amount previously spent, while the expenditures for the triennium 1936-1938 totaled 50 per cent of the amount up to 1936. Reference will be made, in what follows, to the large expenditures that have been made and are now being made upon the major river and canal projects in process of execution. When these projects have been completed the total amount of the expenditures upon inland waterways will be largely increased.

RECENT AND CURRENT RIVER AND CANAL IMPROVEMENTS

The inland waterways policy of the United States can be concretely illustrated by a brief statement regarding the most important inland waterway projects other than the Great Lakes. Some of these are now in process of execution. Although the Great Lakes are the country's most important inland waterway, their improvement may be omitted from the present discussion of government policy. Their ideal location with reference to traffic movement, their annual cargo tonnage of more than a hundred million tons, and the service they render to commerce and industry eliminate any doubt as to the wisdom of the adequate canalization of their connecting channels and the construction of such harbors as are needed by the shipping employed on the Lakes.

The Ohio outranks all other rivers in the United States as regards volume of traffic. Its tributary, the Monongahela, has been given a navigable channel for somewhat more than 100 miles and it has a large tonnage of coal traffic to Pittsburgh and the Ohio River. A lesser volume of traffic, but a substantial amount, comes to the Ohio from the Allegheny and Kanawha rivers, while comparatively little is received from the Tennessee River which does not flow in the direction of the main currents of traffic and which drains a section that does not produce a large tonnage of heavy freight. More than half of the Ohio River's large traffic consists of coal and coke (most of which moves down stream in fleets of barges); while nearly one-fourth of the total tonnage is of sand, gravel and stone, the major share of which is moved locally between points on the river. Iron and steel products contribute about six per cent of the tonnage. The traffic of the Ohio River and its tribu-

taries—which in 1938 amounted to 43,113,239 tons—consists mainly of raw materials for the heavy industries, and this explains why more than 95 per cent of the commerce using the Ohio River consists of traffic transported by private carriers. The common carriers serving the general public provide very limited services.

The Ohio River has been given a low-water navigable channel nine feet in depth. The project was a long time in process of execution, because it involved the construction of more than 30 dams. Up to 1929, when the nine-foot project was completed, the total expenditures that had been made upon the Ohio River and its tributaries for construction works, channel maintenance and the operation of locks amounted to about 250 million dollars. Since then large expenditures—$45,000,000 from 1929 to 1933—have been made for reducing the number of Ohio River locks, and for other works on the Ohio and its tributaries. Since 1933, about $42,000,000 has been spent upon the work of further improving the navigation of the Monongahela and Ohio, and the constructing of dams and locks on the Allegheny and Kanawha rivers has been carried on.

The Mississippi, while it is the country's largest river, has less traffic than the Ohio River has. The traffic on the Mississippi is mainly that between St. Louis and New Orleans, and especially that between the mouth of the Ohio River and New Orleans. The Missouri River, although a long and an important river has but little traffic. There is also but relatively small tonnage transported on the Mississippi above St. Louis; while that via the Illinois River and the Illinois and Michigan Canal is still of small amount. The tonnage, excluding duplications, moved on the Mississippi River from St. Paul to New Orleans in 1938 was 28,307,790 tons.

In a Report (dated October 1, 1934) by the Mississippi Valley Committee, which was a special Committee of the Public Works Administration, it is stated that:

The Federal expenditures on projects of the Upper Mississippi system above the mouth of the Ohio to June 1934 were: on the main stem $104,300,000, and on tributaries and connections $21,750,000, a total of $126,050,000, not including $40,000,000 for maintenance and operation. The estimated cost of completion of the present project as it now stands is: for main stem $91,300,000, additional expenditures on tributaries and connections being estimated as negligible. The maximum traffic since continuous records were

begun on the stretch between St. Paul and the mouth of the Missouri was 4.5 million tons in 1903. The minimum was in 1916 with 500,000 tons, between which point and 1,000,000 tons it has since varied. The great decline has been the result mainly of diminishing traffic in logs and lumber.

The large expenditures now being made on the upper Mississippi River are mainly for the construction of 21 dams for the three-fold purpose of establishing a nine-foot low-water channel, of regulating the stream flow, and of developing hydro-electric power. The total cost of the work will doubtless be substantially greater than the amount stated in the foregoing quotation. It may well be that the results as a whole will justify the expenditure; although, for the reason stated in the quotation, it is probable that the traffic on the improved waterway will be relatively small.

It was logical that there should have been a persistent and ultimately successful demand for connecting the nine-foot channel in the Mississippi River by a channel of like depth via the Illinois and Desplaines rivers and the Chicago Drainage Canal to Lake Michigan. With the aid of the Federal Government the state of Illinois, in 1934, completed this waterway, 327 miles in length, at a cost of about $100,000 per mile. The champions of this Lakes-to-the-Gulf waterway expected larger traffic results than have been obtained or that are likely to be secured.

The Missouri is the Mississippi River's largest tributary, and large sums have been and are being spent to control its flow and to make it serviceable for navigation and other purposes. The Missouri drains a large territory, there are several large cities located on it, and there is manifest need for regulating its flow and for keeping its somewhat migratory current within a definitely prescribed channel. With the hope of giving Kansas City and if possible cities as far up the stream as Sioux City, Iowa, a navigable channel to the Mississippi River, the Government prior to 1930 had spent about 42 million dollars upon the canalization of the Missouri. Plans adopted in 1930 called for the additional expenditure of about 60 million dollars. Since then the Government has adopted and is now carrying out its present large project of improving the Missouri River, and controlling its flow, for irrigation and power development and flood control, as well as for navigation. A part of this project includes the construction of a huge earthwork dam at Fort Peck in Northeastern Montana. The estimated cost of the dam is $86,000,000; while for river channel improvements the estimated cost

of the work above Kansas City is 77 million dollars and for work below that city 80 millions. Thus as the above quoted Mississippi Valley Committee states "the total construction costs for the improvements under way will not be much, if any, below $250,000,000."

As regards the probable future traffic of the Missouri River, the Mississippi Valley Committee stated that:

> The main stem of the Missouri River is being improved for navigation in the face of great obstacles and at an expense which has very doubtful justification. The obstacles hindering its effective development and use as a waterway include both the nature of the river itself and the nature of the transportational needs of the basin. The rather short navigation season in the middle and upper reaches of the river, the low flow in late summer and autumn (normally peak seasons in the traffic of the basin), the shifting natural channels, the unstable bottom, from which flood waters pick up here and there huge quantities of silt that are deposited at various points farther downstream, the similarly unstable banks in most places, the almost complete lack of navigable tributaries to serve as branch lines of traffic, the general direction of flow from the vicinity of Williston, N. Dak., to Kansas City, one that is directly athwart the dominant course of traffic, and the sparse population and low population-supporting capacity of most of the country along the upper reaches, are factors that restrict the commercial usefulness of the river and that make for great difficulty and great expense in attempts at its improvement.

The Columbia River has the largest available power and irrigation resources of any river in the United States. For the first 100 miles from the ocean it provides the seaway by which large ocean vessels reach the Willamette River and the City of Portland, Oregon, near the mouth of that river. Forty miles up the Columbia from the mouth of the Willamette are the rapids at the Cascades, at the foot of which is the town of Bonneville, and 45 miles above Bonneville are the Dalles. The Snake River joins the Columbia in southeastern Oregon about 350 miles from the sea. The navigation improvements of the Columbia have included, first, the provision and maintenance of an adequate channel, 25 feet deep at first, now 35 feet, from the sea to Portland; second, the construction of canals and locks around the Cascades and the Dalles; and third, the work necessary to maintain an "all-year navigation" channel 4½ feet deep from the Dalles to the Snake River. The Snake River from Lewiston, Idaho, to its mouth can be navigated by shallow-draft vessels. Above the mouth of the Snake River the Columbia is not

navigable under present conditions. The traffic that has used the river has consisted mostly of rafts of forest products that are floated down the stream, the other kinds of freight being carried by rail, there being a railroad on each side of the river.

For the generation of hydro-electric power a large dam has been constructed at Bonneville and another and much higher dam at the Grand Coulee in the northeastern part of Washington. The latter dam may also make possible a large irrigation project in the future. The construction of these two dams was begun in 1933, the beginning of the work being made possible by the allotment of funds therefor by the Public Works Administration. Later, funds were provided by Congressional appropriations. The Bonneville dam, which was completed early in 1938 at a cost of about 42 million dollars creates a pool the surface of which will vary from 72 to 82½ feet above sea level. The Cascades are flooded, and at the Dalles, 45 miles above the dam, the level of the water is raised 28 feet. Navigation up and down stream past the dam is by means of locks of ample dimensions. The dam at the Grand Coulee is being constructed in three stages, the first of which was completed in 1939. This dam is 251 feet high, and later another dam—the second stage of the final structure—will be built upon the present one and will reach a height of 450 feet. Whether the second dam is built upon the one first constructed will presumably depend upon the demand for electric power. It will be necessary to complete the third stage of construction to raise the level of the water impounded in the Grand Coulee high enough to be drawn upon for irrigation purposes. The estimated total cost of the entire dam and of the power and irrigation projects is about four hundred million dollars.

What is being done to bring about the utilization of the water resources of the Columbia River, is being done in a more comprehensive and detailed manner with the Tennessee River and its tributaries. Navigation is not being overlooked, but it is an incidental part of a general plan of using the natural inland waterway resources as a means of social betterment.

The United States is engaging more largely than formerly in the construction and operation of canals. Reference has been made to the aid given by the United States for the construction of the river-and-canal—the Lakes-to-the-Gulf—waterway between the Mississippi River and Lake Michigan and to the Federal Government's work of deepening

the Erie Division of the New York State Barge Canal system. The most important canal construction work recently done by the United States has been in connection with an intracoastal waterway roughly paralleling the Atlantic seaboard. The Government purchased of the Cape Cod Canal Company the canal across the narrow isthmus that separates Cape Cod Bay from Buzzard's Bay, and the canal has been enlarged and deepened from 20 to 27 feet. Nothing has thus far been done to substitute for the old and abandoned Delaware and Raritan Canal across New Jersey an up-to-date canal with dimensions required for its use by ocean shipping. Such a canal would cost more than 200 million dollars. If and when such a trans-Jersey Canal is constructed the majority of the vessels in the coastwise trade and the small warships will have a protected and, for most of the distance, an intracoastal waterway from Boston to Norfolk. One link in this waterway will be the Chesapeake and Delaware Canal, which was purchased by the Government several years ago and given a depth of 12 feet. It is now being further enlarged and deepened. The corporately-owned canals south from Norfolk have also been acquired by the Government which has created a 12-foot waterway 198 miles in length to Beaufort Inlet in North Carolina. From there a waterway via natural water courses and canals extends to the St. John's River, Florida, and thence to the southern part of that state. Possibly the much discussed ship canal from Palatka on the St. John's River to the Gulf will be constructed. Eventually also an intracoastal barge canal may be constructed from the Gulf terminus of the proposed trans-Florida ship canal to Mobile Bay, although there is no apparent adequate traffic demand for such an intracoastal canal east of Apalachicola or Pensacola or even east of Mobile Bay. There is now a protected waterway from Mobile Bay via Lake Ponchartrain and a short canal to New Orleans, this waterway being part of the one connecting New Orleans, via the Tombigbee and Warrior rivers, with Birmingport, Alabama. Presumably an Atlantic-Gulf intracoastal waterway should logically include a canal from a point on the Mississippi River above New Orleans to the Gulf Coast and the larger Texas seaports, and such a canal is being constructed.

Whether there is need for the intracoastal canal, especially south of Norfolk, is at least a debatable question. If it has much traffic, it will have to secure it by competition with the alternative transportation facilities provided by railroads, improved highways, pipelines, and the tanker and other coastwise carriers. Inland waterways that can render

a useful and needed service at less cost than by other carriers have their place in a fully developed and coordinated national transportation system. It seems fairly certain, however, that canals that do not extend or connect important natural inland waterways, but merely provide transportation routes and facilities alternate with adequate facilities by rail, road, pipeline and ocean, can hardly have enough traffic, and be of enough economic and social benefit, to justify the large public expenditures required for their construction, maintenance and operation.

SUMMARY AND CONCLUSIONS

Reference has been made to several phases of the Government's policy concerning inland waterways. The conclusions that may be drawn merit brief statement.

It can be only under very exceptional circumstances that the United States Government can justifiably engage in business in competition with private enterprise; and, when it does do so, it should include in the costs of services what are necessarily included by its private competitors. It should include in costs all its operating and maintenance expenses, interest on its fixed capital, the same taxes as are paid by private operators, and a fair rate of return, or profit, on the business enterprise. Unless this is done, the Government engages in business not to encourage and promote the investment of private capital in business and in the employment of labor, but to limit or destroy private initiative and enterprise. A part of the total costs of the services performed by the Inland Waterways Corporation are shifted from the shippers served to the general public. The Government ought to retire from the transportation business. It should regulate but not take over the business of common and contract carriers by water.

One trend in the Government's policy toward inland waterways, and it is a most significant one, is that several of the major rivers of the country—the Mississippi, Missouri, Columbia, and the Tennessee—are being improved for the utilization of their natural resources. Power development, flood control, low-water regulation, and irrigation have become the major purposes, and navigation improvement the lesser aim sought, in making the large expenditures that are being made upon rivers. The policy being followed in making these expenditures is not above criticism. Public works involving a large expenditure of public

funds should be decided upon by Congress, acting upon impartial engineering reports and in pursuance of a general national policy. Unless this is done, there may be a repetition of what took place at Passamaquoddy Bay and in connection with the proposed trans-Florida ship canal. The utilization of the natural resources of the country's waterways is a worthy aim; it should be accomplished by means and methods that are equally worthy.

A question of national policy that should be faced squarely and honestly is whether the general public (the tax-payers) should, by making large expenditures upon river improvement and canal construction, provide inland waterways that are to be toll-free to such shippers and carriers as use them. Should the general public spend $100,000 to $250,000 a mile in constructing a canal or in canalizing a river and also incur a large annual expense for maintenance and operation, and then impose no charge upon those who make use of the facilities thus provided? New York State, for instance, in enlarging her canals has a canal debt of $150,000,000 upon which she is paying $6,000,000 a year in interest, and the annual expense of maintenance and operation of the canals involves an outlay of $4,000,000. Why should the people of New York State bear $10,000,000 of the costs of transportation upon the canals within the state? Why should the people of the United States expend more than $250,000,000 in creating a nine-foot channel in the Ohio River and some of its tributaries, and bear the large annual expense of maintaining the channel and of operating the locks, and make no charge for the use of the facilities by traffic more than 95 per cent of which consists of shipments handled by private carriers operated by industrial concerns for the transportation of their own products or materials? On most other inland waterways, the common carriers that stand ready to serve all shippers desiring transportation services play a larger rôle in relation to private carriers than they do on the Ohio River; but, in view of the present and prospective surplus of transportation facilities as a whole, is the Government justified in providing common carriers upon waterways with facilities free of charge, facilities that have been created and are being maintained by the large expenditure of public funds? When the country was in the earlier stages of its economic development, and when transportation facilities were inadequate, such subsidies might have been in the public interest. Are they justifiable under present conditions?

The opinion of the conservative and fair-minded Mississippi Valley Committee, as expressed in its 1934 Report, was that "Transportation subsidies in the past, in theory at least, have been considered warranted only where there has been an urgent need for the expansion of transportation facilities not readily procurable through private initiative." Concerning the levying of charges for the private use of facilities provided at public expense the conclusion reached by the Committee was that "It may be desirable to introduce a new element by imposing charges where they are justified by special services and special facilities and where the traffic can bear them." In general, the inland waterways policy of the United States, as regards the development and the free use of navigation facilities, should be given careful and impartial consideration. Its modification in some particulars should be made in the interest of the general public.

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CHAPTER 42

Federal Aid to Ocean Transportation and the Merchant Marine

The Federal Government is now giving large aid to the merchant marine under the American flag, especially to the part that is operated between the United States and foreign countries. Why should such assistance be given? What is the objective sought? These questions are very definitely answered in the following "declaration of policy" contained in Title I of the Merchant Marine Act approved June 29, 1936.

It is necessary for the national defense and development of its foreign and domestic commerce that the United States shall have a merchant marine (a) sufficient to carry its domestic water-borne commerce and a substantial portion of the water-borne export and import foreign commerce of the United States and to provide shipping service on all routes essential for maintaining the flow of such domestic and foreign water-borne commerce at all times, (b) capable of serving as a naval and military auxiliary in time of war or national emergency, (c) owned and operated under the United States flag by citizens of the United States insofar as may be practicable, and (d) composed of the best-equipped, safest, and most suitable types of vessels, constructed in the United States and manned with a trained and efficient citizen personnel. It is hereby declared to be the policy of the United States to foster the development and encourage the maintenance of such a merchant marine.

SUBSIDIES BEING GIVEN THE MERCHANT MARINE

To attain the objective thus stated government assistance is necessary. It costs more to build practically all types of ships in American yards than it costs to build them in Great Britain or in some other foreign countries, and the expenses of operation under the American flag are greater than under the flags of most maritime countries. American wages and standards of living are higher than those in most foreign countries and where mass production is not possible costs are generally higher in the United States than in European or oriental countries. It was to provide government aid equal to the difference between American and for-

eign construction and operating costs that the Merchant Marine Act of 1936 was adopted by Congress.

A concrete and typical illustration of the difference between the cost of a high-class ocean passenger liner in American and foreign yards is a vessel that is being built for the United States Lines Company for operation along with the Manhattan and Washington in the trans-Atlantic service. The Newport News Shipbuilding and Dry Dock Co., which made the lowest bid for the construction of the vessel, will, under the contract made with the company by the United States Maritime Commission, receive $15,750,000, while the United States Lines Co. will receive the vessel from the Government for a payment of $10,500,000, the amount, as estimated by the Commission, that the vessel would have cost if constructed in a foreign yard. One-third of the American cost of the vessel, or one-half of what it would have cost if it had been built abroad, is being contributed by the Government as a construction-differential subsidy. For this type of vessel with its individual characteristics in design, construction, and equipment, the difference between American and foreign costs is especially large; but, under present conditions, the cost differences for standard freight vessels will range from a fourth to a third of the cost in foreign ship yards.

The difference between the cost of operating vessels under American and under foreign registry is indicated by "operating-differential" subsidies that have been and are being paid by the Maritime Commission. In accordance with the provisions of the Merchant Marine Act of 1936, the subsidies being paid such American steamship lines as had contracts for the carriage of ocean mail were terminated as of July 1, 1937, and in lieu of such aid temporary differential operating subsidy agreements, for a six-months' period, were made by the Maritime Commission with 16 companies operating 155 vessels. These agreements called for net estimated subsidy payments, for the six months, of nearly $5,000,000. During this period of temporary subsidies, long-term agreements were made with seven steamship lines. Ten agreements with other companies have since been made. The operating differential subsidies that became payable during the 16 months, July 1, 1937 to October 31, 1938 to the sixteen companies with which contracts had been made amounted to $12,197,124 of which amount $2,076,553 was payable to the Lykes Bros. Steamship Co. for operations to Europe, the Far East, and the West Indies. The amount for the United States Lines Co. for services to

England, France and Germany was $2,636,366. The largest of the several operating differential subsidy agreements made during the year 1938 was the one for the payment of $3,000,000 per annum to the former Dollar Steamship Company which is now the Presidents Line (90 per cent of the common stock of which was taken by the Maritime Commission) for its trans-Pacific and 'round-the-world services. Operating differential subsidies are being made from time to time, as new operations are begun. In 1939 the subsidies were about $12,000,000 per annum. The European War and the establishment of maritime combat zones have caused some subsidized lines to suspend services, and compelled other lines to change their services.

IS AN AMERICAN MERCHANT MARINE A NECESSITY?

Why should the American people tax themselves to support a merchant marine under the national flag? Will not foreign vessel owners welcome the opportunity to provide transportation services between the United States and all parts of the world? And, if the foreign vessel operators can perform the services at less cost, why not let them do the work? If a large American merchant marine is needed by the people of the United States, and if they are justified in making the expenditure of public funds required to establish and maintain such a marine it must be because a merchant fleet under the national flag is essential to the satisfactory conduct and development of foreign commerce and because the merchant fleet provides the navy with the auxiliary vessels that it must have in times of emergency, if it is to make adequate provision for national defense. As to the vital relation of merchant vessels to naval strength and national defense, there is general agreement; but, as to the necessity of having American-built-and-operated vessels for carrying on the country's foreign trade, there is more possibility of difference of opinion.

In an Economic Survey of the American Merchant Marine made by and for the United States Maritime Commission in 1937, a study was made of the importance of shipping to American foreign trade and to national defense. The report states that there are four arguments in support of the conclusion that American ships are of importance to the foreign trade of the United States, the arguments being:

1. Ships subject to our own control are necessary to insure continued delivery of our goods, both exports and imports.
2. American vessels protect our traders against exorbitant rates.
3. American vessels in a trade tend to improve the service given to our exporters and importers.
4. Domestic-flag competition prevents discrimination against our goods by foreign vessels.

There has been some debate as to whether the foreign market for American exports is, or is not, lessened by paying ocean freight charges to American carriers instead of to foreign carriers. When American shippers pay foreigners $200,000,000 a year, more or less, for transport services the foreigners are able to pay for more American products and manufactures, or to pay interest on larger loans of American capital, and there is a greater possible market for American exports and a wider possible foreign field for American investments. The force of this argument is, however, weakened by consideration of the increased ability of American exporters to compete abroad due directly to the improved ocean services resulting from the operation of American-flag vessels on ocean routes where foreign steamship services are inadequate. Difficulties connected with balancing international payments should be adjusted without depriving our foreign traders of the benefits derived from an American Merchant Marine.

Another interesting subject for debate would be whether it is economically and politically wise to build up the merchant shipping industry, or any other industry, by means of government subsidies. The present trend toward government subsidies for various purposes is, indeed, regrettable. A substantial American merchant marine is, however, a vital naval necessity, and is of direct benefit to the foreign trade of the United States. The need can be met only by means of government construction and operating subsidies.

To meet the emergency needs created by the World War, and greatly intensified by participation therein, the United States Government in a few years brought into existence a merchant marine of vast proportions —much larger than was required for commercial use when peace was restored, and a marine consisting mainly of vessels constructed for war transport uses rather than of vessels of the type and variety of which a well-balanced mercantile marine is composed. Realizing that there would be a demand by private steamship companies for the purchase of only

a small fraction of the vast Government fleet, Congress sought to further the ultimate establishment of a large marine, of private ownership and operation, and also to aid in the extension and enlargement of the foreign trade of the United States, by the enactment of the Merchant Marine Act of 1920 authorizing the United States Shipping Board to establish and operate government lines directly, or by means of its agents, on the many ocean routes over which the foreign trade of the United States is carried on. In 1922, after a temporary business recession had largely reduced the number of vessels in service, the Shipping Board, acting through its Emergency Fleet Corporation, had in operation 359 vessels "which served 78 routes to various parts of the world." With the exception of 21 combination passenger, mail and cargo ships, these vessels were slow freighters. There were in operation in addition to these vessels, 22 of the Government's 90 tankers. Previous to 1922, some 300 other vessels were being operated under charter, but the business recession of 1922, and the active increase of foreign shipping, put an end to the tramp or charter operation of Shipping Board vessels. These vessels being operated by or for the Shipping Board comprised only a minor share of its ships, the total number in possession of the Board in 1922, three years after the World War being 1707, of which 1449 were of steel construction and steam power.

The Shipping Board sought diligently to find purchasers not only for its vessels but for the lines it was operating, and by means of low prices and easy terms of payment for what it had to sell the Board sold a part of its fleet and was in time able to dispose of most of the lines it was operating. The majority of its vessels were, however, sold for scrap, but about 200 vessels were retained as an emergency reserve. The Act of 1920 and subsequent laws sought to aid private shipping companies having new vessels constructed in American shipyards and old vessels reconditioned. The Shipping Board was authorized to use funds to make loans, equal at first to two-thirds and later to three-fourths of the costs, for the construction or reconditioning of vessels, but the results, as regards new construction, were very small until 1928, when Congress again returned to the policy of liberal mail "subventions."

In general, the Shipping Board is not to be criticized for its failure to convert the huge government-owned tonnage of freight vessels, constructed for the most part for war-time service, into a stable and successful privately-owned merchant marine. The conditions were not favor-

able for the profitable operation of shipping in the foreign trade, and the Government's vessels, consisting mainly of slow freight carriers, became year by year more and more obsolescent, while an increasing number of new and up-to-date vessels were being put into service by foreign competitors. Most of the more than three billion dollars that the United States spent in constructing and buying vessels as a war measure has properly been charged against the cost of the war.

When it became evident that both the Shipping Board and private companies were losing ground in their effort to build up and maintain a stable and profitable American merchant marine, Congress again tried to give assistance to American shipowners and operators by authorizing the Postmaster General to make contracts for the carriage of ocean mail for a compensation enough above the transportation costs to enable and induce American steamship companies to add new ships to their fleets, to recondition vessels, and generally to improve their facilities and services. To aid the companies to provide themselves with the kind of vessels required to meet the stipulations contained in the authorized mail-carrying contracts, the Act of 1928 increased the Shipping Board ship construction and reconditioning loan fund from $125,000,000 to $250,000,000.

The mail payments or subventions authorized by Act of 1928 were very liberal. The payments were graded according to classes of vessels. For the seventh or lowest class consisting of vessels of not less than 2500 tons and 10 knots speed the compensation was to be $1.50 per nautical mile of the outward voyage, while for Class I ships of 20,000 tons or larger and having a speed of 24 knots the rate of pay was $12 per mile. Many companies met the requirements of the statute, and in five years 44 mail-carrying contracts had been made. Had these contracts been in force for the full period for which they were made, the payments for the fifteen years from 1928 to 1943 would have been about $328,600,000. The payments that were made under the contracts in 1935 totaled $29,536,733, and in 1936 they amounted to $28,047,644. Had the payments for the transportation of the ocean mail that was carried by the companies having these contracts been at the standard non-contract rates of 80 cents per pound for first class mail and 8 cents per pound for other classes of mail, the cost to the Government in 1936 would have been only $3,407,937, or $24,639,707 less than was paid.

The Act of 1928 was followed by loans made to aid in the construc-

tion of 43 new vessels and the reconditioning of 42. Of the total amount of such loans—$129,707,366—the loans granted for the construction of 32 new combination freight and passenger ships and for the reconditioning of 22 such vessels amounted to $112,746,464. These were vessels that could meet the requirements for mail-carrying contracts, and were built or reconditioned that they might obtain mail subsidy. The large mail subventions and the liberal government loans made possible by the Act of 1928 did not accomplish the hoped-for results. Only a small part of the American merchant marine in the foreign trade received direct government assistance. The operation of freight vessels, which constitute the larger share of the tonnage, was only indirectly aided by the mail subventions obtained from the operation of passenger and of combination passenger and freight vessels. The American marine, as a whole, did not prosper after 1928, and its difficulties were increased by the limitations placed upon international trade by the emphasis given, for various reasons, by many countries to the policy of national self-sufficiency. If the United States was to have a merchant marine commensurate in size and composition with the country's foreign trade and with the requirements of naval strength, it was manifest that a change in the Government's policy towards ship construction and operation was necessary. Such a change was made by Congress in adopting the Merchant Marine Act of 1936.

THE MERCHANT MARINE ACT OF 1936

The general purpose Congress sought to accomplish by the Merchant Marine Act of 1936 is stated in the first section which has been quoted at the beginning of this chapter. The Act created a Maritime Commission of five members and transferred to the Commission from the Shipping Board Bureau of the Department of Commerce the powers and duties that had been exercised by the United States Shipping Board from its establishment in 1916 until 1933 when its existence ended. The additional powers vested in the Maritime Commission were, however, much greater than those transferred to it from the Department of Commerce.

The statute directed the Maritime Commission "to investigate the employment and wage conditions in ocean-going shipping" and to fix minimum manning scales and wage-scales for all vessels that were aided

by the government subsidies provided for by the statute. The Commission has acted as directed. This section of the Act has been amended and supplemented by a statute approved June 23, 1938, one part of which provided for a Maritime Labor Board of three members whose duties are to further the peaceful and voluntary adjustment of labor disputes by the interested parties.

The major purpose of the Act of 1936 was to bring ocean mail subventions to an end and to substitute therefor liberal construction and operating "differential subsidies." The Maritime Commission was given authority to determine the rights of parties under the mail contracts, to terminate the contracts as of July 1, 1937, and to grant in lieu of the contracts the aid obtainable under the new statute. If the compensation fixed by the Commission was not satisfactory to the holders of the mail-carriage contracts, they could bring suit against the United States in the Court of Claims. The Commission has succeeded in performing this difficult task with commendable success.

The 1936 statute seeks by means of subsidies to replace, year by year, the obsolete vessels of the merchant marine with new and better ones constructed in American shipyards, and to make it possible for American ship-owners to operate their vessels successfully in competition with foreign shipping upon the ocean trade routes of importance to the foreign commerce of the United States. When a person or company desires to have a new ship constructed or an old one remodeled or reconditioned, plans are to be submitted to the Maritime Commission. When the plans have been approved the Commission obtains bids from American shipbuilders and has the work done. When the Commission turns the new or reconditioned vessel over to the buyer or owner the government requires the buyer or owner to pay only what it would have cost to have had the work done in a foreign shipyard. The Commission will bear the "construction differential" up to 33 1/3 per cent of the actual cost; and if the cost difference is more than one-third of the American cost, the Commission may, in special cases, upon an affirmative vote of four of its five members, approve a differential allowance not exceeding 50 per cent of the actual cost. The buyer or owner of the vessel is required, by the statute as amended in 1938, to make a cash payment to the Commission of 25 per cent of what the foreign cost would have been, the remaining 75 per cent being payable in not to exceed 20 annual amortization installments, the interest upon unpaid principal being 3½ per cent per

annum. If the one for whom the work is to be done prefers to make his own contract with the shipbuilder, he can get bids and submit them to the Maritime Commission; and when the Commission has approved a bid the individual or company may make a contract with the shipbuilder who, upon completion of the work, receives from the one for whom the work was done what the foreign cost would have been, the remainder being paid by the Maritime Commission as a "construction differential subsidy." One feature of the statute, the wisdom of which has been questioned, is that a shipbuilder's profits from construction work done for the Maritime Commission shall not exceed 10 per cent—any excess above that percentage being credited to the Government—and in reckoning costs and profits "no salary of more than $25,000 per year to any individual shall be considered as a part of the cost."

The Maritime Commission is authorized to pay an American company that is performing, or proposes to render, an essential service over an ocean route of importance to the foreign commerce of the United States an "operating differential subsidy" equal to the difference between the cost of operation under the American flag and what it costs competing companies to operate under foreign flags. The applicant for such a subsidy must possess the necessary financial and other qualifications, and must show that he owns or that he can and will build the vessels required to meet competitive conditions. The operating contract and subsidy agreement may be for a period not exceeding 20 years, and may be reviewed and readjusted from time to time, not oftener than once a year. The Commission may reduce the compensation paid for periods when vessels are laid up, and it may approve of changes in routes or services, with appropriate readjustment of subsidy payments. If at the end of a ten-year period the contractor's profits, after providing for depreciation, are found to have averaged more than 10 per cent per annum, one half of the excess above 10 per cent shall be paid to the United States.

In enacting the Merchant Marine Act of 1936, Congress has sought to bring about the modernization and development of the American merchant marine by private enterprise and capital if possible; but the statute gives the Maritime Commission authority to supplement private enterprise to the extent necessary to provide a marine adequate to the needs of commerce and national defense. The statute provides that "Whenever the Commission shall find . . . that the national policy de-

clared in section 101 of this Act . . . cannot be fully realized within a reasonable time . . . the Commission is authorized to have constructed in domestic yards, on the Atlantic and Gulf and Pacific coasts such new vessels as it shall determine may be required to carry out the objects of this Act." If satisfactory contracts cannot be made with private shipbuilders, the Commission may have the work done in the United States navy yards. The vessels thus acquired may be sold by the Commission to private operators or may be leased under charter. The vessels are being constructed in private shipyards. During 1938 the Maritime Commission contracted for the construction of 32 cargo vessels and 12 tankers. Contracts for six 23-knots combination passenger and freight vessels were awarded in January 1939. Most of the freight vessels were to be of 15½ knots speed, others of 16½ knots and they were designed with the collaboration of the naval and some other government departments and the leading shipbuilders and operators with a view to creating a model vessel with low operating costs. Twenty vessels were allotted to the following services, all from the United States North Atlantic ports: 3 to the West Coast of South America; 6 to Scandinavian and Baltic ports; 6 to the United Kingdom and the ports from Bordeaux to Hamburg; and 5 to India, Australia, or the Orient. The outbreak of the European War near the end of 1939 will necessitate a change in services and in vessel allotments.

The tankers were to be so constructed as to have a speed of 16½ knots and to be provided with several features that will increase their value as a naval auxiliary. Of the total cost of the tankers, 28 per cent is for the naval features. The Commission hopes and expects to find buyers for its vessels, but if no satisfactory offers are received, the vessels will presumably be leased to private operators. Some of the tankers have been purchased by the U.S. Navy. The prospect of war in Europe caused the Maritime Commission to accelerate its construction program. By the end of 1939, the construction of 141 vessels had been ordered by the Commission. This is, moreover, but a part of a program for the construction of 500 vessels in ten years. It is not probable that the Commission will operate the vessels either directly or through agents, if that can be avoided; but if necessary the Commission will put the vessels in service.

Much was accomplished by the Maritime Commission during the first two years of its activity. By an order dated October 21, 1937, the

Commission prescribed minimum manning and wage scales and fair working conditions for officers and men employed on vessels receiving government subsidy. The mail payment contracts made under the Act of 1928 were successfully supplemented by assistance authorized by the Act of 1936. Constructive studies were made of desirable ship designs and a program of ship construction for private owners and for the Commission was worked out and inaugurated. The United States Lines Co. has been aided in securing a luxurious passenger vessel to take the place of the *Leviathan* and to be operated with the *Washington* and *Manhattan* in a weekly service to France and England. The three high-class vessels that the Panama Pacific Line was unable to operate profitably in the New York-San Francisco service have been taken over by the Maritime Commission. These vessels along with ten or more freight carriers will be operated for the Commission in much improved passenger and freight services between the United States and Brazil, Uruguay and the Argentine. The South American and trans-Pacific services are to be improved by high-class 23-knot combination passenger and freight vessels.

The Commission has secured such information as is obtainable concerning the cost of operation of foreign flag ships over the several ocean routes and temporary subsidies have been granted American steamship companies to aid them in operating over many, but not all, important ocean routes. The Commission is developing a long-range operating subsidy plan. It will, obviously, take several years for the Commission, if it should succeed in its efforts, to bring into existence the shipping required, and to provide the operating assistance necessary, to bring about the establishment and maintenance of American-line services on the many ocean routes over which the foreign commerce of the United States is carried. The experience of the Maritime Commission will determine whether it is possible by liberal government subsidies to build up a merchant marine adequate to meet the needs of commerce and national defense.

Present conditions are not favorable to the development of a merchant marine. Government aid is necessary and justifiable, and apparently subsidies are the only kind of aid that gives promise of success. It is to be hoped that private enterprise, with government assistance, will be able to provide a merchant marine adequate to meet the commercial and naval needs of the United States; but, if that is found to be impossible, there will doubtless be a government-owned-and-operated mer-

chant marine. That alternative is one that every effort should be made to avoid.

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CHAPTER 43

Merchant Marine Policies of Foreign Countries *

As the result of several causes, there have been rapid development and numerous changes, since the World War, in the merchant marine policy of maritime countries. The war resulted in an unbalanced condition in the merchant marine of each participating country. Germany lost most of her shipping and had to rebuild her fleet, while the United States had a superabundance of cargo vessels. The prolonged war had not only caused the destruction of many vessels but had also brought about the hurried construction of many ships to meet urgent war-transport requirements rather than the normal needs of commerce. Most countries, other than the United States, began rather promptly after the World War to bring about a better balance between merchant shipping and commercial needs and steps were also taken by foreign countries to overcome increasing obsolescence by aiding the construction of up-to-date tonnage. The policy adopted by the United States and the results thereof have been considered in the previous chapter.

Another important influence upon merchant marine policy during the two decades between the World War and the present European War has been the strong emphasis which some countries have placed upon greater national self-sufficiency. Almost feverish efforts have been made by some of them to provide themselves with necessary commodities and services and to minimize dependence upon foreigners. In carrying out this policy the leading maritime countries have given government aid for the construction and purchase of vessels and for their operation under the national flag.

A third reason for government assistance to merchant shipping is the need of such shipping as a naval auxiliary. All the maritime countries have been building up their navies for national defense and, in the case of some countries, as an aid to national expansion. Probably the "national

* The following statement is an account of the merchant marine policies of foreign countries prior to the beginning of the War in Europe near the end of 1939. The War will doubtless be followed by changes in policies.

defense" motive, quite as much as the purpose of providing facilities for the service of foreign commerce, accounts for the merchant marine policy of most maritime countries.

The necessity for merchant ship subsidies, and the amount of government assistance thus given, have been increased by the business depression that has prevailed, in greater or lesser degree, for nearly a decade in most countries. The volume of international trade, after having been restricted by the post-war emphasis upon national self-sufficiency, was further reduced by adverse business conditions in most countries. Private enterprise, without government assistance, could not profitably engage in the construction and operation of most kinds of ocean vessels. The building up of well-balanced merchant marines for the promotion of foreign commerce and for providing adequate naval auxiliaries could be accomplished only by large expenditure of public funds.

The merchant marine policies of the several seaboard countries, while similar in some ways, also differ largely. Each country naturally seeks to meet and improve the conditions peculiar to it, by the adoption of policies which it thinks will be most effective. However, each country, and particularly the United States, in adopting and administering a policy of aid to ship construction and operation, needs to be informed concerning, and to take into account, the merchant marine policies of other countries. If the United States is to enable American ship builders and operators to compete successfully with their foreign rivals, consideration must be given not only to the construction and operating costs of American, as compared with foreign, vessels but also to the amount and kinds of subsidies given by foreign countries to ship builders and owners. This fact is fully recognized by the United States Maritime Commission and is duly emphasized in its administration of the Merchant Marine Act of 1936.

The following discussion is limited to the presentation of data regarding the merchant marine policy of the five leading maritime foreign countries from the World War to 1939. There is such a redundancy of details that the statement regarding each country must be kept within rather strict limits.

*

GREAT BRITAIN AND IRELAND

Great Britain, whose foreign commerce and whose merchant marine are the largest of all countries, has, from the days of Oliver Cromwell to the present, given consistent government support to its merchant marine; but the amount of financial aid that has been necessary has been relatively small as compared with the subsidies and other kinds of assistance to shipping granted by other countries. To meet the adverse conditions in production and trade and in labor employment that prevailed for a time after the World War and that again occurred a decade later, the government of Great Britain and North Ireland have given substantial financial aid to their shipping interests. But the assistance thus given was mainly to meet a situation that was considered to be but temporary. In general, the world-wide commerce of the United Kingdom with foreign countries and with the far-flung components of the British Commonwealth of Nations has provided private enterprise with an opportunity and incentive to create and maintain a large merchant marine. Moreover, there has been a commendable cooperation of British shipping interests with each other and with the government in adopting and carrying out merchant marine policies. This cooperative and financial support of British shipping has also been given by Canada, Australia and New Zealand, as well as by the London government of Great Britain.

The government aid to British shipping consists, first of all, of contracts for the carriage of ocean mail. There are such contracts with five large steamship companies, the five contracts requiring the relatively small total annual payment of about £750,000. The largest payment is made to the Peninsular and Oriental Steam Navigation Company for mail transportation services from Great Britain to the Far East and Australia. The contract relations with this company have been continuous from 1837 to date. For the transportation of mail from Australia to England the Australian government makes a liberal payment to the Orient Steam Navigation Company. The next largest British mail contract is the one with the Cunard-White Star Line for trans-Atlantic and South American services. From 1840 to 1917, the Royal Mail Steam Packet Company had a series of mail contracts; but in 1917 the company decided that the payment offered by the government did not adequately compensate the company for the additional expenses involved.

Prior to the consolidation in 1933 of the Cunard Line and the White Star Line the two companies each had a contract. Canada pays the Canadian Pacific Line for carrying mail to Great Britain. Another British mail contract is the one with the Ellerman Line for the mail services with Africa. The steamship lines which connect the British ports with the Continent of Europe have government contracts for carrying mail. The other mail payments are for "home services," for the carriage of mail between the different parts of the United Kingdom that are separated from each other by water.

The total amount paid by the British Post Office for these ocean mail services—less than $4,000,000 a year—can hardly be regarded as subsidies. The contracts are of assistance to the participating companies, but are drawn with business-like care, being based upon a careful estimate of the probable volume of mail and adjusted from time to time with increases or decreases in the amount of mail carried.

British merchant shipping receives some aid from the navy, which makes payments to merchant ship owners for the purpose of providing for a reserve force of auxiliary vessels and of naval officers and men that will be available in time of war. Three naval reserves are maintained—the royal fleet reserve, the royal naval reserve and the royal naval volunteer reserve. The total expenditures for these purposes has been about $2,500,000 a year. In Great Britain, as in the United States and other countries, provision is made by the government for having some merchant vessels so designed and constructed that they may be used as naval auxiliaries in times of emergency. The extra construction cost of vessels so designed is borne by the government. Government-aided vessels may, also, be helpful to the navy by affording training for junior officers in the naval reserve and for seamen in the naval volunteer service.

In 1921, Parliament adopted the Trade Facilities Act, and in 1922 the government of North Ireland passed the Loans Guarantee Act. The main purpose of these acts was to increase the industrial employment of labor, by means of a government guarantee of the principal and interest of funds borrowed by manufacturers to obtain the necessary capital. By the British Trade Facilities Act as later amended, the government was authorized to guarantee loans up to £75,000,000 (about $365,000,000) to aid eight sections of industry. The Treasury allotted somewhat more than a third of the total to guarantees for loans to aid

shipbuilding. The loans, approved by the government, were made by banks, and the government guaranteed the payment of principal and interest. The average rate of interest was about 5 per cent. By amortization, the loans are being reduced, the losses by the government to date having been comparatively small. The loans caused the construction of a large number of vessels at a time when they otherwise would not have been built. The same results have followed from the enactment of the Irish Loans Act which was adopted primarily to guarantee loans for ship construction in Ireland. Of the total loans guaranteed, amounting to over £22,000,000 and thus to more than $100,000,000, about one-half has been paid off, and, by replacement of loans, interest charges have been much reduced. The loans have made possible the construction in Irish yards of 87 ships at a cost of £32,000,000.

Near the end of 1933 the Treasury Department of the British government reached a tentative agreement, providing for the merger of the Cunard and White Star companies and for government loans to enable the merger to complete the *Queen Mary* and to construct a sister ship. This agreement was in effect sanctioned by Parliament by the passage of the North Atlantic Shipping Act of 1934 and the Treasury was authorized to loan the Cunard-White Star Company, £1,500,000 for working capital, £3,000,000 for the completion of the *Queen Mary* and £5,000,000 for the construction of a sister ship that was launched in 1938. The company is obligated to repay the loans with interest, and the government is protected by mortgages on the vessels constructed.

February 26, 1935, Parliament enacted the Tramp Ship Act by which substantial government subsidies were provided in aid of the operation and construction of vessels for tramp or charter services. The administration of the act was placed in charge of a British Tramp Shipping Administrative Committee and the Board of Trade. For the years 1935 to 1937 appropriations were made for the payment of an operating subsidy, totaling not more than £2,000,000 per annum for British tramp-ship operations. If the freight rate index for a year averaged more than 92 per cent of the freight rate index for 1929, the total payments were to be reduced £250,000 for each per cent above 92, no subsidy being granted if the tramp freight rates were as high as in 1929. The amount payable to each claimant was calculated by the Administrative Committee which reported to the Board of Trade. The granting of operating subsidies was not continued after 1937, but the Tramp Shipping Admin-

istrative Committee, with the cooperation of tramp ship owners, was able to fix and from time to time prescribe the minimum charter rates to be observed by British ship owners for the main trade routes of the World. Foreign owners of tramp ships cooperated with British owners. A meeting of the International Shipping Conference December 17, 1937, decided that "Cooperation should be based on the voluntary plan adopted by the British tramp shipowners," and at a meeting of the Conference February 10, 1938, a consultative committee was appointed to consider questions arising from the working of the agreement. Apparently the British Tramp Shipping Administrative Committee is receiving the cooperation of British and other tramp shipowners, and the plan is working out successfully.

The Tramp Ship Act of February, 1935, also provided for a fund of £10,000,000 from which government loans, authorized by the Board of Trade, might be made to assist in modernizing British cargo ships. Loans at 3 per cent per annum were to be made for the construction, in the United Kingdom, of a new cargo vessel upon condition that the shipowner would destroy two tons gross of obsolete tonnage for each new ton. Loans for reconditioning vessels were to be made when an equal obsolete tonnage were scrapped. Loans could be made only for a cargo vessel with passenger accommodations for not to exceed 12 persons. The government loan was protected by a first mortgage on the vessel constructed or modernized, and loans were repayable within a period of twelve years. The government-loan fund authorized by the Act of 1935 was intended to be self-liquidating.

From the foregoing somewhat detailed statement, it will be seen that The United Kingdom adopted several temporary measures to assist merchant shipping in meeting conditions resulting from the World War and adverse business conditions. With the exception of the comparatively small amount paid as operating subsidies for tramp shipping for about three years, the temporary government aid to shipbuilders and ship owners consisted of loans that are being repaid. The government has not taken the place of, nor limited the scope of, private enterprise in the construction, ownership and operation of merchant vessels.

FRANCE

The development and maintenance of a merchant marine under the French flag has long required, and is now dependent upon, large government aid. The government now has a contractual, and virtually a partnership, relation to the four large companies by which the freight and passenger line services between France and different parts of the world are performed, each company having its particular field of operations. French tramp vessels are given liberal navigation bounties, and, to aid ship construction in France, the government has underwritten loans and has guaranteed and shared the payment of the interest on loans.

France does not subsidize shipping by large payments for carrying mail. All four government-aided lines are required to carry mail (and mail may also be carried by non-contract vessels). The compensation therefor is fixed by joint action of the Postal Administration and the Marine Ministry. The mail rates established by the Universal Postal Union are those ordinarily paid the ocean carriers, but in some cases the rates may be made somewhat lower by annual contracts with the government. Now that the United States has put ocean-mail carriage upon a cost-of-service basis, Great Britain and Japan—and they to a minor extent—are the only countries of those here discussed that use mail-contracts as a means of granting subsidies.

The four large companies subsidized by the French government and the sections they serve are (1) The Compagnie Des Messageries Maritimes which operates between Marseilles and Indo-China, the Far East, the Black Sea, and Madagascar. The routes over which these services are rendered are especially long, and the subsidies received for the services amount to nearly half the total subsidies (approximately the equivalent of $27,000,000) that have latterly been paid annually to the four companies. (2) The Compagnie Generale Trans-Atlantique (the C.G.T.), or the "French Line," as it is usually named, which receives somewhat more than a third of the total subsidies and operates services to the United States, Canada, the West Indies, the West Coast of North America, England, Belgium, and Algeria, Tunis and Morocco. (3) The South Atlantic Navigation Company which has services to Brazil and the River Plate. (4) The Marseilles Navigation Company which operates between Mediterranean France and Corsica.

The present contracts with the companies are for long periods the shortest of which terminates in 1946 and the longest in 1953. The government, by the contracts, is given comprehensive control over the finances, business affairs and operating activities of the companies. This control has been taken by the government not only because it has incurred large liabilities in guaranteeing loans, but also because it has assumed liability for operating losses. As has been stated [1]

In the Far East Contract, the government assumes 80 per cent of the liability for losses and takes 80 per cent of any possible profits, making first allowances for repair funds and normal depreciation, and even some allowances for dividends to stockholders.

In the Brazil and River Plate contracts the same conditions exist, with the difference that the French government in the contract has a 90 per cent element of profit and loss risk.

In the Corsica service, the contracting company owns the ships, charters them to the French government, and the French government in turn hires the owners to manage the ships.

The government's relation to the Compagnie Generale Trans-Atlantique is especially significant. Among this company's fleet of many services are the *Normandie* and some other high-speed vessels. A financial reorganization of the company became necessary in 1932 and was accomplished in 1933. The government has about two-thirds of the stock of the new company, and the larger part of the loans of the company are guaranteed by the state. An annual subsidy of 150,000,000 francs was granted for the years 1933 and 1934, with provision for a gradual reduction to 50,000,000 a year. One-third of the company's administrative board consists of government representatives. The Minister of Merchant Marine, by means of a government commissioner, has supervision of operations, and the accounts of the company are audited by a commission that reports to the Minister.

The provisions of the contracts with the four subsidized companies are detailed, including, among other things, specifications as to the speed and types of vessels to be operated, or constructed if necessary. The gov-

[1] By J. E. Saugstad in his testimony at the Hearing before the Committee on Merchant Marine and Fisheries, House of Representatives. 74th Congress, First Session, on H.R. 7521. The Hearings were published by the Government Printing Office.

ernment has the first claim upon such cargo and passenger space as it may desire to use, and there are reduced rates and fares for services rendered the government.

The loans for ship construction or purchase that have been underwritten by the French government are made by the Credit Foncier, the largest real estate bank in France. By act of Parliament in 1928, this bank was authorized to make mortgage loans up to a total of 200,000,000 francs a year for five years; and at the end of the five years the period was extended for four years. Loans could be made up to 50 to 70 per cent of the cost of the vessel constructed or purchased. The loans may be either short-term loans for five years or long-term loans for not to exceed 20 years. The loans are to be amortized by annual payments covering principal and interest. The government, moreover, contributed half the interest charge at first on half and later on the whole of the loans, with the proviso that the shipowner must pay at least 2 per cent upon loans for cargo vessels and 3 per cent for loans on passenger ships.

Another kind of aid to shipping, also substantial in amount, that France has given is subsidies to tramp vessels. An act of Parliament which was adopted July 12, 1934, and which by later extension will be in effect until the end of 1940, provided for tramp shipping subsidies to be paid from funds obtained from an increase of not to exceed 4 per cent in some import duties. An appropriation of 90,000,000 francs was made for the year 1935. The subsidy paid a vessel is determined by vessel tonnage and days of operation. The rates per ton per day are higher for vessels of small tonnage and lower for large ships. The rates depend upon, and increase with, the speed of vessels, and are also higher for vessels in some trades than for those operated in other trades. The immediate effect of this complicated plan of operating subsidies was to bring into active service a considerable tonnage that had been laid-up.

Effective January 1, 1939, provision was made for small government subventions to oil-tankers having a carrying capacity of more than 6000 tons.

GERMANY

At the close of the World War, Germany was practically without a deep-sea merchant marine. Such commercial vessels, of over 1600 tons gross, as were in German ownership when the War ended were transferred to the allied countries; but a new and more efficient merchant

fleet soon took the place of the one that had been lost. As early as November 7, 1917, the Reichstag took action to provide funds for ship construction upon the restoration of peace; and during the three years following the War, by successive grants, total appropriations, amounting to 30,000,000,000 marks (60 marks being equal at that time to about $1.00) were made, in return for which ship owners agreed to build or buy within a ten year period beginning January 10, 1920, 2,500,000 dead-weight tons of ships, 90 per cent of the tonnage to be constructed in Germany. While the mark still had exchange value, this government aid was a great stimulant to ship building. During the two years 1921 and 1922 more than a million dead-weight tons of shipping were launched in German yards, the construction of most, but not all, of which was the result of the grant of public funds.

Further assistance was given to shipbuilding in Germany in the early part of 1925 when the government provided for a loan fund of 50,000,000 gold marks ($11,900,000). This action was taken to provide employment as well as to aid ship construction. From the fund, loans might be made up to 50 per cent of the cost of a vessel, the rate of interest to be 4 per cent for the first year after completion of a vessel and then to rise to 5 per cent and 6 per cent during the second and third years. The loan fund having been exhausted by October 15, 1926, the government adopted the plan of devoting, from accruing income from interest, the sum of 3,000,000 gold marks per annum for six years to aid new construction. By a somewhat complicated plan the Reich, and the German states in which the shipyards were located, lightened the ship owner's interest burden for several years.

Because of increased unemployment and the effects upon German industry of the unfavorable financial condition of the country, the government, in 1932, granted two kinds of aid to shipping. A fund of 12,000,000 marks was set aside from which to make loans to aid in the scrapping of vessels. Loans free of interest were made to ship owners up to 30 marks per ton gross of scrapped vessels. Aid was also given, both to the owners of line vessels and to tramp ship owners, by extending the government credit or guaranty to their obligations. The government gave its guaranty for 70,000,000 marks of the obligations of the large line companies, and for 7,000,000 marks for obligations of tramp ship owners. The financial condition of the large ship owning companies had become, temporarily, so impaired that they were denied

further credit by the German and Netherland banks until the government's guaranty was provided.

German shipyards have been busy during recent years, but this has been made possible by liberal government aid and by orders from foreign ship owners. In addition to the assistance given by the government measures above referred to, additional public aid has been given in accordance with a policy adopted in 1934, which makes it possible for a ship owner, when government approval is given, to receive a subsidy equal to 20 per cent of the price of a new vessel. The policy also provides that the government may pay 4 per cent interest, for six years, on the remaining 80 per cent of the cost of the vessel. The amount paid by the government as interest is a loan that the ship owner is to repay from profits derived from the operation of the vessel. Funds were set aside for the payment of the construction subsidies and interest advances by the government.

Germany's merchant marine policy has sought successfully to accomplish several results. The war-depleted marine was reconstituted mainly, but not wholly, by ships built in German yards, and the foreign commerce of the country with different parts of the world was served by a national marine. Government aid reduced unemployment in the ship building and tributary industries. A merchant marine was created that provides the navy with efficient auxiliary vessels for service, if and when needed. Just how much this cost and what the current outlays of the government were cannot be stated, but the total must have been relatively large.

At the beginning of 1938, the German Minister of Transport in a statement printed in the publication *Hansa* summarized the German Merchant Marine policy in force in 1938; and the substance of what he said was stated as follows in the *Foreign Shipping News* issued by the United States Department of Commerce: [2]

The principal state grants to German owners are those in respect of currency equalization and new construction, and these are to be continued so long as present conditions exist. The currency grants are intended to cover at least a part of the loss to which German owners are subjected by spending in marks and earning in depreciated currencies, and the need for the building grants lies in the fact that "costs for new construction are 35 per cent higher in German yards than they are in foreign yards." . . . The only service given

[2] Issue of February 25, 1938.

special assistance, over and above the currency and building grants common to all German owners, is the North Atlantic service which receives financial support based on the accounts of the Norda concerns formed by the Hamburg-America Line and the North German Lloyd for this purpose. This assistance, like the currency equalization payments, is an outright and unconditional grant.

ITALY

By the adoption of a policy that was put into effect January 1, 1926, Italy has granted, and is now giving, large public aid to merchant ship construction and operation. This is accompanied by, and conditioned upon, a comprehensive government control of the shipping industry. The kinds of assistance that the government has been giving for 15 years are those that other countries have adopted and that have been described in the discussion of the merchant marine policies of the United Kingdom, France and Germany. The Italian system of aid to vessel operation and construction "embraces (1) contract services, (2) subsidies to tramp shipping, (3) subsidies for scrapping old vessels, (4) construction bounties and interest contributions, and (5) advances of public credit for construction of new ships." [3]

In making subsidy contracts to aid ship operation, the government has classified as "indispensable" lines those connecting the Italian mainland and islands and as "useful" the lines serving the foreign commerce of Italy. Contract provisions are different for the two classes of lines. Not less than 60 per cent of the stock of the companies aided must be owned by Italians. The personnel of the vessels must be Italian, and new vessels must be constructed in Italian shipyards unless the requirement is waived by the government. Large annual subsidies are given each class of lines, the "indispensable" lines receiving the larger aid, and in return the companies are required to assume numerous obligations, one of which is the carriage of mail without compensation. Steamers aided by contracts are required, as a national defense measure, to have an extra captain and an extra engineer. The contracts with "indispensable" lines are for 20 years, most of those with the other lines for 5 to 10 years. There are special reductions in the rates and fares for transportation services for the government. The contracts contain definite require-

[3] J. E. Saugstad. Testimony before House Committee on Merchant Marine and Fisheries, referred to in footnote on page 523. The discussion in this chapter is based largely upon Mr. Saugstad's testimony.

ments as to speed of vessels. The government's control over operations is made complete by a provision in the contracts that vessels of a subsidized line may be taken over by the government and assigned to new operators, the compensation for the vessels thus expropriated being fixed by a board of experts. Such operators as are compelled to build new vessels to perform required services may issue bonds equal to 60 per cent of the subsidy that will be payable to the operator during the remaining period of a contract, the bonds to be amortized during the subsidy period. All subsidy contracts are flexible being subject to changes by the government to meet special circumstances.

For the "useful services," the largest operating subsidy contract, calling for an annual payment of 62,800,000 liras (about $3,300,000), is with the Lloyd-Triestino Company of Trieste. It is for a ten-year period dating from May 21, 1932. The company operates 14 lines in services to India and the Far East. Another important contract is with the Navigazione Libera Triestina which operates 2 services around Africa, 1 to West Africa and 1 to the west coast of North America, its annual subsidy being 19,450,000 liras.

The lines in the "indispensable" services include two groups, one being the lines on the west side of Italy, which receive an annual subsidy of 78,575,000 liras, the other group being the lines of the Adriatic Company which receive 54,880,000 liras, annually, for services to the Eastern Mediterranean and the Adriatic.

The Italian government does not have an operating subsidy contract with the Italian Line to New York and other North Atlantic ports. This Line, which is the combination of three large companies, has been bountifully aided, but the aid has been mainly by grants of construction bounties and of government credit for company loans, to which reference will presently be made.

January 1, 1932, Italy began granting subsidies to operators of tramp ships. The subsidy granted a vessel was based upon the vessel's age, tonnage, and miles of annual operation. The subsidy has been reduced and is now relatively small, but is a form of government aid that the Italian cargo vessels need to enable them to compete with the subsidized tramp ships of other countries.

Beginning with 1931, Italy granted subsidies for the scrapping of old ships. During a period of four years the government authorized the scrapping of 200,000 tons of shipping per annum, the subsidy being

25 liras per ton for the first three years and at the average rate of 22 liras for the fourth year, the total grants for the four years being 19,400,000 liras. The period within which the work of vessel scrapping was to be completed was extended to June 30, 1936.

Government aid for the construction of new vessels in domestic ship yards was a part of the ship subsidy program adopted by Italy in 1926. As modified in 1929, shipbuilding was aided by tariff bounties and bounties for construction, repair and alteration of vessels. Materials for machinery could, within certain limits, be imported free of duty, and on steel plates, shapes, and tubing manufactured in Italy the government granted bounty allowances. Construction bounties were based upon the gross tonnage of vessels and upon the power and weight of engines, boilers and auxiliaries. Appropriations were also made to cover the extra cost of giving steel vessels the strength required for the installation of guns, if such naval equipment should be required.

Italy, like the other countries here considered, has been liberal in assisting ship owners in securing loans for the construction and reconditioning of vessels. A specially-organized bank, the Institute of Maritime Credit, was authorized to make loans, during the seven years 1928-1935, of 1,200,000,000 liras, which at the current rate of exchange would amount to about $102,000,000. The funds for these loans were obtained by the Institute from the sale of its bonds and from the authorized use of various government deposits. The government paid part of the interest on the loans—1 per cent on loans made for the purchase of a vessel built in a foreign country, 2½ per cent interest on vessels built in Italy, and (by action taken in November, 1932) 5 per cent on loans for vessels of a minimum gross tonnage of 45,000 tons and a speed of more than 26 knots. A private bank, the Italian Maritime Credit Institute, which is an especially strong institution, has also made loans for ship construction, and the government has made the same interest payments on such loans as upon those made by the Institute of Maritime Credit.

As would be expected the largest shipbuilding loans made by the Institute of Maritime Credit were made in 1930 to the company that constructed the *Rex* and the *Conte di Savoia*, the loans being for 300,000,000 liras, 150,000,000 upon each vessel. The funds were secured by the Institute by the sale of bonds, and the loans were secured first by the credit and assets of the bank and then by a mortgage not

only on the *Rex* and *Conte di Savoia* but also on the vessel property of the Italia Line, which has a fleet of about 20 ships. The bonds are redeemable, in 6 months' quotas, over a period of 13 years.

JAPAN

Japan has succeeded in building up a merchant marine. Government aid has been necessary there as in other countries. The government has contracts with some 31 lines owned by six companies for what are called "ordered" services. Two-thirds of their line services are between Japanese ports, and between Japan and ports in Asia, while about a third of the services are to Australia, North and South America, Africa and Europe. The total annual subsidies allotted to the lines in the "ordered" system of services usually amount to ten or eleven million yen, or to about $5,000,000. The largest payments are to the Nippon Yusen Kaisya for services to Seattle, San Francisco and South America.

These payments made to the lines in the "ordered" systems are not mail subsidies. With the exception of two lines, those from Japan to Australia and to England, mail payments have not been on a special contract basis. Japan, apparently, realizes that mail subsidies are not the most economical and effective kind of government aid to a merchant marine.

In 1932, Japan adopted a ship-replacement plan that was very successful. By the expenditure of 11,000,000 yen in subsidies over a three-year period, the plan brought about the scrapping of 94 old ships of 400,000 gross tons and the construction of 31 new vessels having a total gross tonnage of 200,000 tons. This program of ship scrapping and construction was very helpful to the Japanese shipbuilding industry, which was also aided, indirectly, by the government subsidies paid the manufacturers of steel. The war that Japan is waging in China also increases shipbuilding activity.

At the present time Japan is subsidizing shipping by the payment of a part of the interest on loans for new construction. In 1937 the Diet made an appropriation of 28,800,000 yen for shipbuilding subsidies. The loans are made by the Industrial Bank of Japan from funds allotted to it, the interest being paid in part by the government. The interest subsidy granted by the government has resulted in applications for loans which

had by June 1938 reached a total of 150,000,000 yen. The Nippon Yusen Kaisya in 1938 announced a program for the construction of 21 vessels, 4 to be completed in 1939, 15 in 1940 and 2 in 1941. The 21 ships will have a total gross tonnage of 221,200 tons.

Shortly before the beginning of the Japan-China war, the Diet of Japan adopted a Deep-Sea Navigation Subsidy Act providing for granting subsidies to tramp ships, but the War has made necessary the use of such ships for transport purposes, and the tramp subsidy program has been postponed.

September 8, 1937, the Diet passed a ship control law giving the government complete authority over shipping as regards transfer of ownership, construction, operation, chartering, freight rates, and changes in equipment. This is presumably a temporary war measure. It was hoped that the shipping companies most of which are members of the Shipping Autonomous Federation might by voluntary action exercise adequate control over shipping but that was found to be impossible, and the enforcement of the ship control law has been necessary.

The need of the Japanese merchant marine for more moderate-sized cargo vessels for both line and charter services, is urgent, and, in 1938, the Department of Communications began negotiations with the Finance Department for allotment of funds, as contemplated by the tramp subsidy act, to aid in the construction of freighters of three standard types, of 4300, 2600 and 1900 tons gross with speeds, respectively of 14, 13, and 12 knots. The standard types were recommended by the Shipbuilding Federation and the Shipping Standard Improvement Association. It is interesting to note that, in 1938, the United States Maritime Commission, with the cooperation of marine architects and ship operators, also adopted standard types of cargo carriers; a number of which are being constructed.

The foregoing recital of the numerous and somewhat similar details of the merchant marine policy of five foreign countries indicates that the several policies have many similar provisions, the variations being those responsive to special problems peculiar to particular countries. It will be observed, moreover, that the precedent established by foreign countries was followed by the United States in the Merchant Marine Act of 1936, the fundamental provisions of which are like in principle to those

embodied in the legislation of other countries. Whether government aid to merchant marines, accompanied by an increasing measure of government control, will eventuate in the perpetuation or ultimate termination of private enterprise in the ownership and operation of merchant vessels is an interesting question for which only the future has an answer.

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CHAPTER 44

Federal Regulation of Water Transportation and Carriers

Preceding chapters have discussed the policy of the United States Government concerning the construction and use of inland waterways and the aid given to ocean carriers and the merchant marine. A summary account has also been given of the merchant marine policies of five foreign countries, most of which accompany public aid with comprehensive government regulation of ocean shipping. It remains to consider the scope and character of the regulation of water transportation and carriers by the United States. The present policy and pending problems will be made clearer and more significant by a brief sketch of their background. It will be seen that the Federal regulation of water transportation and carriers is still in the evolutionary stage.

THE BACKGROUND OF PRESENT POLICY

The authority of the Federal Government over carriers by water engaged in interstate traffic was definitely established in 1824 by Chief Justice Marshall and the Supreme Court in deciding the case of Gibbons v. Ogden (9 Wheaton); but, with the exception of stipulating and enforcing the requirements to be met by vessels seeking American enrolment or registry, Federal regulation of carriers by water did not begin until 1887, and then in but slight measure. The provisions of the Interstate Commerce Act of 1887 applied not only to the railroads but also to the transportation of passengers or property "partly by railroad and partly by water when both are used under common control, management or arrangement for a continuous carriage or shipment." As the Interstate Commerce Commission had no jurisdiction over the port-to-port traffic of carriers operating coastwise or upon inland waterways, it could regulate but a small part of the interstate water transportation. Moreover, it was not until 1910 that the Commission was able to exercise more than nominal authority over transportation rates by joint rail and water routes.

As has been stated in the discussion of the provisions of the several statutes by which the present Interstate Commerce Act has been built up, the Hepburn Act of 1906 gave the Commission authority to establish through rail-water routes. Its power over rates was limited to fixing maximum charges to take the place of rates which upon complaint and after investigation had been found unreasonable. Four years later the Mann-Elkins Act authorized the Commission to act upon its own motion in investigating and adjusting maximum rates. It could also suspend proposed rates until they had been investigated and found to be reasonable. In 1912, the Panama Canal Act gave the Commission power to require rail and water carriers to make physical connections at terminals when this was deemed to be desirable and practicable. Railroad companies were prohibited from operating vessels through the Panama Canal and from operating elsewhere vessels with which they may compete. By the Transportation Act of 1920, the Commission was empowered to prescribe the actual rates that railroads may charge, and to fix the through rates by joint-rail-and-water routes, with the limitation, however, that for the waterway portion of the route the Commission should prescribe only the maximum rate.

The first short step in the general regulation by the Federal Government of carriers by water was taken by the adoption of the Shipping Act of 1916. The Act applied to common carriers operating over regular routes in the foreign commerce, and in domestic commerce coastwise or on the Great Lakes. The law did not apply to tramp services nor to carriers upon rivers and canals. Unfair monopolistic practices and unjust discriminations in rates and fares of carriers were prohibited. The law declared that common carriers subject to the Act should "establish, observe, and enforce just and reasonable rates, fares, charges, classifications and tariffs," but the statute did not provide for giving effect to this requirement. The administration of the Act was vested in a Shipping Board, and domestic carriers were required to publish, and file with the Board, maximum rates, fares and other charges, and to give the public and the Board ten days' notice of a change therein. The Board could not suspend proposed charges, but it could, after investigation, change the maximum charges found to be unreasonable.

The primary purpose of the Shipping Act of 1916 was to prevent monopoly and ensure competition in water transportation. American steamship lines engaged in foreign and coastwise commerce were mem-

bers of "conferences," and the minimum rates charged and the services rendered by the members were subject to conference agreements, the purpose of which was to keep interline competition within desired limits. The Act of 1916 did not prevent American lines from entering into such agreements, but required the agreements to be filed with, and approved by, the Shipping Board before going into effect. This provision of the Act was sound in principle, but not of vital importance, because it has not been monopoly in transportation by water, but the severity of interline and intercarrier competition that in large measure has made government regulation necessary.

The requirement that domestic carriers subject to the Act of 1916 should file maximum rates with the Shipping Board and give 10 days' notice of a change did not give the Board any real control over the charges, because the domestic carriers filed with the Board schedules of maximum rates well above those that the carriers actually charged in competing for traffic. The rates and fares were not stabilized by government regulation, but were left subject to the control of competitive conditions.

The Shipping Act of 1916 contained not only the regulatory provisions that have been referred to but also provisions authorizing the President, in an emergency, to take over the operation and construction of vessels. The United States entered the World War shortly after the Act went into effect. The President exercised his authority, and, in consequence, the Shipping Board was required to devote its efforts mainly, not to the regulation of carriers, but, first, to controlling ship operations during the World War, to constructing a huge transport fleet, and then, when the War was over, to carrying out the requirements of the Merchant Marine Act of 1920 by putting into operation as many as possible of the vessels that the Government had constructed and by bringing about the sale to private companies of government vessels and steamship lines for which purchasers could be found.

However, had peacetime conditions prevailed after the adoption of the Shipping Act of 1916, it would not have resulted in the effective regulation of the carriers by water engaged in the domestic commerce of the United States. Such regulation must begin with a decision by public authority as to what carriers and services are required in the public interest. A carrier seeking to begin service should be required to obtain a certificate of public convenience and necessity or a permit. When

adequate services are being rendered, the carriers in operation, and the public that supports them, should be protected against the creation of surplus facilities and services which are quite certain to bring about ruinous intercarrier competition. The other prerequisite of successful government regulation of carriers whether by water, rail, road or air is the power to fix the rates that may be charged by each carrier and to establish the equitable and advantageous adjustment of the rates of the several transportation agencies.

PRESENT REGULATION: ACTS OF 1933 AND 1938

The Shipping Act of 1916 and the Merchant Marine Act of 1920 required interstate coastwise and Great Lakes common carriers to file maximum rates and authorized the Shipping Board to investigate and report upon such charges. The Board was given power to correct maximum rates found to be unreasonable, but it could not fix actual rates, and it was given no jurisdiction over carriers upon inland waterways other than the Great Lakes. Moreover, these two defects in the Acts of 1916 and 1920 have been but partially corrected by the two statutes enacted in 1933 and 1938. The 1933 Intercoastal Shipping Act required common carriers operating between the two seaboards of the United States via the Panama Canal to file their actual rates, changes in rates to be made upon 30 days' notice. The Shipping Board, upon its own initiative or upon complaint, could suspend the proposed rates pending an investigation and determination of their lawfulness, but the statute provided that "nothing contained herein shall be construed to empower the Board affirmatively to fix specific rates." As might have been expected, not much was accomplished by the Act of 1933.

The Maritime Commission was created by the Merchant Marine Act of 1936, and to it were transferred the powers that had been exercised by the Shipping Board from 1916 to 1933, and by a bureau of the Department of Commerce from 1933 to 1936. The primary purpose of the Act of 1936 in providing for a Maritime Commission was to build up a larger American merchant marine in the foreign trade. The regulation of carriers by water in the domestic commerce of the United States was a minor consideration; but some progress toward an ultimate goal of general regulation of transportation and carriers by water was made by an act approved June 23, 1938, containing several amendments

to the Act of 1936, and two amendments to the Intercoastal Shipping Act of 1933.

The Act of 1938 added two sections to the Act of 1933, one section giving the Maritime Commission power to prescribe rates, maximum or minimum, to be charged in place of those found to be unjust or unreasonable, and another section extending the provisions of the Act of 1933 as amended to "every common carrier by water in interstate commerce, as defined by Section 1 of the Shipping Act of 1916"; i.e., to regular line carriers, coastwise, intercoastal, and, as regards maximum rates, to carriers on the Great Lakes. The Commission was given no jurisdiction over the operations and charges of contract carriers; common or contract carriers might start operations without obtaining a permit or a certificate of public convenience and necessity; and the Commission had no authority over carriers upon inland waterways other than the Great Lakes. The field of government regulation of carriers by water, remained but partially occupied.

The Shipping Act of 1916 prohibited unjust discriminations and unfair practices by carriers engaged in foreign commerce, as well as by those in interstate commerce. Carriers engaged in foreign commerce are prohibited from unjustly discriminating between shippers or ports and from collecting any charges that "are unjustly prejudicial to exporters of the United States as compared with their foreign competitors." If such unjust charges are demanded or collected, the Maritime Commission may "alter the same to the extent necessary to correct such unjust discrimination or prejudice." The regulatory provisions concerning carriers in the foreign trade apply to common carriers and not to tramp services. In order that the rates being charged by carriers in foreign commerce might be known an order was issued July 12, 1935, by the Shipping Board Bureau of the Department of Commerce requiring such carriers to file "schedules showing the rates and charges for or in connection with transportation of property, except cargo loaded and carried in bulk without mark or count, from points in the continental United States, not including Alaska or the Canal Zone, to foreign ports, such schedules to be filed within 30 days from the date they become effective."

In its Report for 1939, the Maritime Commission states that 9,449 rate filings were made in response to the above order; and that, "in addition, 1858 filings were made by conference carriers covering homeward and other trades." The Commission has found that the rate sched-

ules revealed some charges and practices that were prejudicial to the public, such as charges for the issuance of bills of lading, instances of prima facie excessive rates and charges, and too stringent provisions in contracts. "In most cases," the Commission states, "carriers have voluntarily made the necessary corrections upon informal notification by the Commission." The policy of correcting improper rates and practices by intercession rather than by prosecution will, it is expected, be successful in many cases.

PROPOSED REGULATION OF CARRIERS BY WATER

One of the valuable services rendered by the Coordinator of Transportation and his staff, during the three years (1933-1936) the act creating the office of Coordinator was in force, was that of drafting, and urging upon Congress the adoption, of legislation applying to carriers by motor and carriers by water the principles and general scope of government regulation that had been applied to railroads. Bills were submitted to congressional committees in 1934 and again in 1935, and Congress enacted the Motor Carrier Act that was approved by the President August 9, 1935. The water carrier bill was not acted upon in 1935 or 1936 nor was action taken upon a similar bill that in 1937 received favorable consideration by the Senate and House Committees. The Motor Carrier Act of 1935, was an addition to the Interstate Commerce Act and became Part II thereof. The water carrier bill had it been enacted would have been Part III.

THE NEED FOR GOVERNMENT REGULATION OF CARRIERS BY WATER AND CONTROVERSIAL QUESTIONS CONNECTED THEREWITH

While the government regulation of the railroads has long been considered necessary and of advantage to the carriers and the public, and while provision has recently been made for the comprehensive regulation of highway and air transportation and carriers, it has been difficult for the public to approve of applying to carriers by water, especially to carriers upon inland waterways, government regulation like in principle and scope to that to which other kinds of carriers have been subjected. The public has an especially friendly feeling for waterways,

and does not place them in the same category that it places railroads and highways. As has been stated elsewhere,[1] the public feels that

> The rivers, lakes and ocean ways are nature's ways that all may use; they preceded the railroads and improved highways; they were long regarded by the public as its safeguard against the exaction of unfair rates by the railroads; the railroad ownership, control, or operation of vessels or vessel lines with which the railroad does or might compete is prohibited; and transportation by water, even on rivers and canals, is thought to be less expensive than by other means of carriage. Legislation for the regulation of waterways, even the inland waterways that have been provided by nature or constructed at public expense, is advocated by the railroads; therefore, must not such legislation be intended to help the railroads to the detriment of the public? Moreover, why should the public regulate transportation and carriers upon public ways? Such ways should be for the free and unhampered use of the public.

This attitude of the public towards waterways explains why carriers by water have not been subject to government regulation. The policy has been one of non-regulation of transportation and carriers upon inland waterways—other than on the Great Lakes, where there is partial regulation—and of lavish expenditure of public funds upon the improvement of the navigation of some rivers, such as the Missouri, of which slight traffic use will be made, and upon the construction of such canals as the Atlantic-Gulf Intracoastal Waterway, a large part of which has no commercial justification. However, with increasing frequency and emphasis, the question is being asked whether the general tax-paying public should make large outlays to provide, free of charges, transportation facilities to be used by common carriers that serve only a portion of the public, by contract carriers who use the free waterways as business facilities, and by private carriers who use their own vessels in securing materials for their industries and transporting to market the products of their mills and mines. Moreover, having found it to be in the interest of the carriers and the public to regulate railroad, highway and air transportation, the question naturally arises will not government regulation be of advantage to common carriers by water and be a protection to the public against unfair rates and practices?

There is promise of the adoption of a policy of government regulation of carriers upon inland waterways. The Wheeler bill that passed the Senate in 1939, and the Lea bill adopted by the House of Repre-

[1] E. R. Johnson, Government Regulation of Transportation (1938), pp. 477-478.

sentatives in the same session both provide for government regulation of such carriers. The bills went to a joint conference committee of the two houses of Congress. The Committee will report a bill for consideration by the Senate and House of Representatives during the session beginning in January 1940.

The advantages that the general public will derive from the comprehensive regulation of transportation and carriers by water are those that have resulted and are being obtained from the regulation of transportation and carriers by rail, road, and air. Those advantages have been set forth in discussing railroads, and do not need to be restated.

Concerning the controversial question as to whether tolls or other charges should be made for the use of water transportation facilities that have been provided at public expense, the views of an impartial government committee may well be cited. The Mississippi Valley Committee of the Public Works Administration, in a most instructive report that was made in 1934, discussed at length the inland waterways policy of the United States, and among the conclusions reached were the following:

> Generally speaking, reasonable charges should be levied on new projects. This should not be so interpreted as to preclude promotional rates during the development period.
>
> Where making such charges would bring about the disuse of facilities already in existence, and especially where the government is under no material expense for maintenance and operation, it would be unwise to levy charges on such existing projects. The policy should be generally to charge something where special services or special facilities are provided.

One general purpose which the Government should seek to accomplish in the regulation of all kinds of transportation and carriers should be to bring about the coordination of the several agencies and facilities into a general transportation system. It is only by the appropriate and constructive regulation of all the agencies of transportation, those by water as well as those by rail, road, and air, that intercarrier relations can be made really cooperative. With like regulation of the several agencies of transportation, the competition that is desirable within each class of carriers and among the different kinds of carriers will not be eliminated but will be kept within such bounds as to be helpful, rather than destructive, to the carrier, and of benefit to the public they serve. By adherence to sound principles, government regulation can lessen the

financial difficulties and uncertainties of the carriers and enable them to perform their services with increasing efficiency. The genuine coordination of facilities and services made possible by the like regulation of all of the several agencies of transportation—the functioning of each agency in the performance of the services it can best render—that is the goal to be striven for and attained.

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PART VI

HIGHWAY TRANSPORTATION

CHAPTER 45

The Development of Highway and Motor Transportation in the United States

The Growth of Highways in the United States

The growth of highway systems in the United States is both the cause and effect of the development of motor transportation. The advent of self-propelled vehicles created a demand for improved roads, and the construction of modern surfaced highways encouraged the production and facilitated the distribution of motor vehicles.

During the seventeenth, eighteenth, and early years of the nineteenth century, the economic, political and social development of the interior of the American Continent was hampered because of a lack of adequate roads and other transportation facilities. The settlements in the New World were planted at sheltered harbors on the seacoast or along the banks of navigable streams. The hazards of transportation were so great that trade, social intercourse and the exchange of political ideas were carried on only with the greatest difficulties. The crude roads into the interior and even those between the larger settlements were impassable in winter because of the drifted snows. In summer they were dusty and rutted. In the wet seasons they were so muddy as to make transportation virtually impossible. Travelers had to depend upon river boats and coastwise sailing vessels and upon the crude trails or roads for transportation facilities.

As a result, travel was an adventure—slow, costly and perilous. Each settlement was circumscribed by a wall of isolation from one another. The exchange of necessities, ideas and public opinion was restricted to the members of the little communities within the barrier limits imposed by the lack of transportation facilities. Necessity alone impelled travel.

Political problems were multiplied by the isolation of one colony from others. Each grew to be self-governing and self-contained in its political prejudices. Colonies were jealous of their neighbors and could not adjust their ideas through travel among the colonies.

The evils of isolation did not end when American independence was achieved. The new nation did not immediately set out to improve the highways and other transportation facilities, and could not for lack of funds. The new states continued to misunderstand one another, social life was hampered in its development, and commerce, although growing steadily in volume, was limited for the most part to trade over the water routes, coastwise and inland.

Periods of American Highway Development

The development of the highway system falls logically into six periods. The first phase, the pioneer period that has been discussed briefly above, was a time of chaos in road building. Little more need be said of this period except to emphasize the fact that the roads which were built prior to 1790 were built as local enterprises and as local conveniences to serve limited districts.

The Toll Road Period

The second period of development, the period of the toll roads, may be dated from 1790. In that year a company was chartered by the State of Pennsylvania to construct a turnpike or toll road from Philadelphia to Lancaster, in Pennsylvania. The road was begun in 1792 and completed as far as Lancaster in 1794. The "pike" was "stoned" by throwing stones of all sizes upon it. The Lancaster Turnpike from Philadelphia to Lancaster, Pennsylvania, is claimed to have been the first scientifically hard surfaced road in America. The success of this road and the surfaced highways built by Telford and Macadam in Great Britain stimulated road building in the New England and Middle Atlantic states. A number of turnpike or toll road companies were chartered by states in these groups. The Lancaster Pike or Turnpike was included in a system of connecting toll roads reaching from the Delaware River at Trenton, New Jersey, through Pennsylvania and Ohio, to Steubenville on the Ohio River. By 1828, more than three thousand miles of road had been constructed in Pennsylvania by turnpike companies chartered by the state. More than $8,000,000 were expended on roads by 102 Pennsylvania turnpike companies between the years 1790 and 1828. Many of these companies were assisted financially through purchases of stock by the state. Other states followed Pennsylvania in chartering and aiding turnpike companies. The New England states and New York had

granted charters and assistance to 317 companies by 1811. Virginia appropriated funds to be used exclusively for river improvements, canals and public highways in 1816. South Carolina in 1818 voted a million dollars for improvements, the funds to be raised in four annual levies.

During these years the states were opening roads, but the only good highways were the turnpikes constructed by the turnpike companies who placed toll gates every few miles along the way. This resulted in a higher cost of transportation than was desirable—and farmers, manufacturers, merchants and the public as consumers and travelers clamored for free roads. Many of the turnpike companies were not prosperous financially, although some were. All, however, were of great benefit to the commerce of the states.

The Federal Road Building Period

The third phase of road building overlaps to some extent the toll road or turnpike period.

On March 29, 1806, despite the objections of the advocates of the states' rights theory of government, President Thomas Jefferson approved a bill to survey and construct a road from a point on the Potomac River near Cumberland, Maryland, to the Ohio River near Steubenville. The project was popularly known as the Cumberland or National Road. The progress of this road was slow due to financial difficulties and the War of 1812. Gradually, however, Congress came to accept the doctrine of "implied power" of the Federal Government to construct internal improvements with the result that money was more easily appropriated for this and other important projects. The first contract for the National road was let in 1811 for the construction of a section ten miles in length from Cumberland. Contracts for short sections were let from year to year until, by 1817, the road had been built through the Cumberland gateway over the Allegheny Mountains and down the Youghioheny River Valley to a point close to Pittsburgh, thence west and southward through Washington, Pennsylvania, to Wheeling, West Virginia, on the Ohio River. An old Indian trail had been developed by successive stages, into a route for George Washington and his band to Fort Necessity; into General Braddock's road to Great Meadows; into a pack train trail; and, finally, into a finished surfaced highway cleared to a width of 66 feet.

The success of the Cumberland Road to the Ohio River created demand for its extension westward. In response to this demand an ap-

propriation was made by the Federal Government in 1820 to lay out a road 80 feet wide from Wheeling, West Virginia, to the Mississippi River near St. Louis. Despite many objections in Congress and occasional presidential vetoes, the road was pushed on; the last appropriation being made for a portion west of the Ohio River on May 25, 1838. The Federal appropriations for the Cumberland Road amounted to $6,824,919.33. The Road proper was constructed as far as Vandalia in southern Illinois, although it was stone-surfaced only as far as Columbus, Ohio.

The introduction of the steam railway affording cheaper, faster, and more reliable long-distance transportation diverted so much of the traffic from the toll roads as to make them unprofitable to the private turnpike companies and many of them were taken over by the public and maintained by local road overseers or supervisors. Appropriations for Federal roads were not made after 1838.

The National Highway or Cumberland Road, was allowed to fall into disrepair. President Jackson's theory that national money should be expended on roads in the territories alone and the states' rights doctrine that each state should make its own internal improvements prevailed generally during this period.

The Period of State and Local Road Building

From 1838 on, highway construction went into eclipse. The great public interest in canal building and railroad construction put an end to the demand for road development. For fifty-five years the Federal Government did nothing to assist the states and local governments in building or maintaining roads. Roads were regarded as local matters and entrusted to road supervisors appointed to collect local road taxes or require road tax labor of the residents of their districts. The policy of allowing taxpayers to "work out" their road taxes, in vogue in many parts of the United States, was so inefficient that few roads were in good repair. It might be said in passing that this system of working out road taxes is still in vogue in certain rural counties of a few states.

Wagon roads throughout the country were generally very poor. Townships were divided into road districts and each road district was presided over by an overseer of highways, whose duty it was to collect so many days' work or so many dollars from each taxpayer in the district. Of course no taxpayer would pay a dollar when he could work

easily and leisurely on the road all day and visit and chat with the neighbors and save his dollar, too. The result seemed to be that the work was misdirected and not of lasting benefit to the road.

Later, particularly in the last quarter of the nineteenth century, local roads built by counties, townships and other units of local government tended to improve.

The Bicycle and Rural Free Delivery Period

The development of the use of the bicycle served to arouse popular interest in highways in the late 'eighties and early 'nineties of the last century. Cycle clubs were organized throughout the country. These clubs turned their energies toward securing better roads. The efforts of these social clubs in this line were of primary importance in bringing the need of good roads to the attention of state and Federal Governments. The national "League of American Wheelmen" held conventions, interested politicians in the issue and sponsored an exhibition of "better roads" propaganda at the World's Fair in Chicago in 1893.

Another great force for good roads in America was the Office of Public Road Inquiry instituted in 1893. The functions of this organization were: "to make inquiries in regard to the systems of road management throughout the United States, to make investigations in regard to the best methods of road building, to prepare didactic publications on this subject, suitable for distribution, and to assist the agricultural colleges and experiment stations in disseminating information on this subject." [1]

Other good roads organizations came into being during the latter years of the nineteenth century, among them the National Good Roads Association.

One other agency played a conspicuous part in the movement for better roads at this period in highway history, the rural free delivery system. In 1890 the then United States Postmaster-General John Wanamaker recommended the extension of free mail delivery to towns of less than 10,000 population and the United States Post Office Department inaugurated an experimental village delivery. This was discontinued after two years and free delivery on a broader basis was substituted. The first Rural Free Delivery routes were established at Halltown, Uvilla, and Charlestown, West Virginia, on October 1, 1896. Others were established. By the close of 1900 about 4000 routes had

[1] 27 U. S. Statutes at Large, 737.

been established, providing for the daily delivery of mails at the scattered homes of about three and a half million of the rural population.

The revival of public interest in good roads resulted in the establishment of the Office of Public Roads and Rural Engineering in the Department of Agriculture in 1893. In 1904, the Brownlow Bill providing for a Federal appropriation of $24,000,000 for highway construction was introduced in Congress. This bill failed of passage by Congress, but governmental interest in highways had been aroused.

The Early Automobile Period

The next phase of highway history may aptly be called the early automobile period. The development of an adequate highway system was made necessary by the rapid development of the automobile as a pleasure vehicle and as a carrier of merchandise and passengers, and the development of good highways stimulated the wider use of automobiles. The Federal, state, and local governments were compelled to face the problems of highway construction and maintenance. After a lapse of seventy-five years highways again came to be of national rather than of local importance, as arteries of Federal and state as well as local commerce, due to the rise of rapid automotive transportation.

The Federal Government appropriated $500,000 for post roads in 1912. The grant was made contingent upon the appropriation by the states of $1,000,000 for the same purpose. Seventeen states took advantage of this Act to build roads with Federal aid.

The Constitutional authority for Federal aid in highway construction is based upon the clause in the Constitution giving Congress the power "to establish post offices and post roads." [2] The money made available under the Act of 1912 could be expended only on post roads outside of towns "having a population of two thousand five hundred or more, except that portion of any such street or road along which the houses average more than two hundred feet apart." This provision emphasizes the great importance of the connection between improved highways and the rural free delivery system of the United States Post Office Department.

At the same time that the Federal Government was becoming active in road construction, the states and local units of government were not idle. State aid in road building usually took the form of the state bear-

[2] Article I, Section 8, Paragraph 7.

ing a part of the expense of road construction and the locality in which the road was located bearing the rest of the burden.

The Present Period of Road Building

The first state-aid law, passed in 1891 by New Jersey, provided that the property owners pay one-tenth, the state one-third, and the county the remainder of the cost of constructing new highways. Except for the 10 per cent paid by the abutting property holders the burden was borne by all citizens of the county and of the state through general taxation. The office of the Commissioner of Public Roads was created to supervise disbursement of the state funds and to supervise road construction. This law became the pattern followed in substance by many other states. The state-aid principle in general has been adopted by all states, many before Federal aid came, and the others since that time.

The first highways built in what may be called the modern period of highway construction were built by local communities and counties and were designed primarily to meet the requirements of these localities. The states when they entered into extensive road building programs did so in order to connect the local and county roads into state-wide systems of arterial highways. Later the Federal Government extended aid in order to articulate the arterial highways of the state systems into a nation-wide highway system for the improvement of commerce and for national defenses.

The Present Highway System

The present highway system of the United States consists of 3,068,921 miles of local and state roads, a dozen times the mileage of railroads. The state highways aggregate 533,144 miles, and county and local roads total 2,535,777 miles. Of this huge mileage approximately 389,550 miles are surfaced highways or paved streets. The balance of over 2,535,000 miles are secondary roads and local roads or streets. The surfaced highways or streets include the following kinds of roads: sand clay, gravel, water-bound macadam, surface-treated macadam, bituminous macadam, sheet asphalt, bituminous concrete, cement concrete, and brick and other paving blocks.

The last three types named are usually called "high-type" surfaced roads. There has been a rapid increase in the past twenty years in the percentage of surfaced road mileage as compared to the total mileage

of highways. The state highway systems aggregating 533,144 miles have 389,551 miles or 73% of the highways surfaced.

The construction and maintenance of highways in the United States are financed principally by the states. In 1936 the states received $1,031,439,000 in highway income derived from the following sources in order of importance:

Gasoline taxes	$389,125,000	37.8%
Federal aid and grants	322,997,000	31.3%
Motor vehicle fees	188,824,000	18.3%
State bonds	106,235,000	10.3%
Miscellaneous sources	13,458,000	1.3%
Motor carrier taxes	5,667,000	.5%
Appropriations (in three states)	3,756,000	.5%
State taxes (in eight states)	1,377,000	
	$1,031,439,000	100.0%

There has been a significant trend in recent years toward the financing of state highways from current revenues, including principally gasoline taxes and motor vehicle fees, and from Federal aid, and away from financing through the extensive use of bonds.

County and local road income amounted to $488,516,000 in 1936. This income came from the following principal sources:

Gasoline taxes, motor vehicle licenses, and motor carrier taxes	$235,625,000	48.2%
Local taxes and appropriations from general funds	199,059,000	40.7%
Bonds	30,548,000	6.3%
Federal Aid	23,284,000	4.8%
	$488,516,000	100.0%

The counties and local road construction and maintenance agencies are tending towards programs of financing out of current income rather than through the use of bond financing. In some states the important county and local roads have become parts of the state highway systems and are financed by the states.

In order to meet the demands for state roads, many of the states instituted highway construction programs in the early years of the present century. The states spend more than $500,000,000 annually in road and bridge construction and in the acquisition of rights of way for highways. Over $1,000,000,000 is spent each year by the states in high-

way construction, maintenance, policing and retirement of highway obligations. The sum spent in 1936 was $1,371,234,000. This sum was divided 50.7% for construction; 34.2 % for maintenance; 8.5% interest on bonds; 6% miscellaneous expenditures, and 0.6% equipment and machinery. Of the total, $947,085,000 or 69.1% was expended on state highways and $424,149,000 or 30.9% on county and local roads,[3] not including large sums spend on roads in unemployment relief projects.

Federal Aid

From the time of the Brownlow Bill in 1904 to the present time not a session of Congress has passed without the introduction of several highway appropriation bills. A report was submitted by a joint Congressional committee on January 21, 1915, urging the economic importance of good roads, the constitutionality of Federal aid, and the public sentiment in favor of Federal aid. As a result of this report a bill was introduced in Congress, January 6, 1916, which became law, July 11, 1916.[4]

The Federal Aid Act of 1916 authorized the Secretary of Agriculture to cooperate with the states through their respective highway departments in the construction of rural post roads. In order not to invade state sovereignty no money apportioned under the Act could be expended in any state until the legislature of that state assented to the provisions of the Act. The Secretary of Agriculture and the respective state highway departments were directed to agree upon the roads to be constructed in the respective states, the character of roads to be built and method of construction. All roads constructed under the provisions of the Act must be free from tolls of all kinds. The Act also defines the term "post roads" to include any public road over which the United States mails now or may hereafter be transported, excluding every street and road in a place having a population, as shown by the latest available Federal census, of two thousand five hundred or more, except that portions of street or road along which the houses average more than two hundred feet apart.

After deducting the amount necessary for administration, not exceeding 3 per cent, the remainder was to be distributed among the

[3] United States Department of Agriculture, Bureau of Public Roads.

[4] Introduced by Representative Shackelford of Missouri, Chairman of the House Committee on Roads.

eligible states as follows: (1) one-third in the ratio which the area of the state bears to the total areas of all the states; (2) one-third in the ratio which the population of each state bears to the population of all the states; and (3) one-third in the ratio which the mileage of rural delivery routes in each state bears to the total mileage of rural delivery routes in all the states.

The Secretary of Agriculture is to approve only projects which are substantial in character. Items of engineering, inspection and unforeseen contingencies may not exceed ten per cent of the estimated cost. The share paid by the Government shall not exceed fifty per cent of the total cost.

The Act of 1916 appropriated $10,000,000 for the survey, construction and maintenance of roads and trails within the National Forests when such roads were necessary to develop the resources upon which communities within and adjacent to the National Forests are dependent.

The Secretary of Agriculture on September 1, 1916, issued rules and regulations to govern the administration of the Federal Aid Road Act. These regulations define terms, prescribe the sort of information required by the Department of Agriculture, the forms of project statements, surveys, plans, specifications and estimates, project agreements, contracts, construction work and labor, records and cost keeping, methods of payment and submission of documents to the Bureau of Public Roads.

The Act provides that a state, county or district making application for aid must present a project statement to enable the Secretary to ascertain:

(1) whether the project conforms to the requirements of the act;

(2) whether adequate funds or their equivalent are or will be available by or on behalf of the state for construction;

(3) what purposes the project will serve and how it correlates with other highway work of the state;

(4) the administrative control of, and responsibility for, the project;

(5) the practicability and economy of the project from an engineering and construction standpoint;

(6) the adequacy of the plans and provisions for proper maintenance of roads, and

(7) the approximate amount of Federal aid desired.

There must be submitted for approval forms of contract, with documents referred to in them, and the contractor's bond. Maps of surveys, plans, specifications and estimates, showing quantity and cost must have

the approval of the Secretary of Agriculture. The state is required to provide the rights of way and railroad grade crossings shall be avoided where possible. A project agreement between the state highway department and the Secretary is then executed. It must be shown also that adequate means either by advertising or other devices were employed, prior to the beginning of construction, to insure economical and practical expenditures, and rules for submitting and tabulating bids are given. Samples of the materials to be used must be submitted whenever requested, and all materials, unless otherwise stipulated, must be tested prior by the standard methods of the Office of Public Roads. Reports of progress, records and cost accounts must be kept in approved manner.

This Act marked a great forward step toward the development of a national highway system, yet there proved to be one major defect in the plan which became apparent soon after its enactment. This defect lay in the failure of the Act of 1916 to assure the completion of connection arteries in any reasonable time which would actually mark the development of a national or Federal Highway System. Consequently, the states began individually to construct local systems by means of government financial aid with little thought or planning toward the construction of roads leading to a unified Federal system. It was thus that the Act of 1916 permitted too wide a dispersion of the Federal money, but relief soon followed in the adoption of amendments which culminated in the Federal Highway Act of 1921.

The Federal Highway Act of 1921 retained all of the principal features of the Federal Aid Act of 1916, but added the important requirements that before Federal aid would be granted to any state, "such state, through the state highway department, shall select or designate a system of highways not to exceed 7 per cent of the total highway mileage of such state as shown by the records of the state highway department at the time of the passage of this act." This provision was later amended to permit Federal aid to be granted to states for roads in excess of 7 per cent of the total state highway system by permitting aid to be granted to additional roads equal to the mileage of highways in the Federal reservations in the respective states.[5] It further states that the Secretary of

[5] The 7 per cent limitation was amended on June 30, 1930, to provide for an increase in amount equal to the mileage of the designated system in each state lying within the equal boundaries of national forests, Indian Reservations and other Federal reservations. Annual Report of Chief of Bureau (1930), p. 9.

Agriculture "shall give preference to such projects as will expedite the completion of an adequate and connection system of highways interstate in character." [6] The system is divided into two classes of Federal aid roads; the primary or interstate highways, and the secondary or inter-county highways. The Act specifies that the primary roads shall not exceed three-sevenths of the total mileage which may receive Federal aid.

Other important amendments contained in the Act of 1921 provide for additional state aid after the 7 per cent system has been completed; some increase the maximum Federal aid per mile to $25,000 under certain circumstances; some make provisions for reapportionment of Federal funds appropriated for any year; specify how and when payments are to be made by the Government to the states; change the administrative expense percentage deductible before appropriation from 3 per cent to 2½ per cent and provide for highway progress maps, sale of land grants by railways, forest roads appropriations, and other details of organization and administration.[7]

At present the Federal aid highway system consists of 214,409 miles of approved highways outside Federal reservations, and 6,721 miles within Federal territory, or a total of 221,130 miles.[8] Federal highway aid expenditures from 1917 to 1937 amounted to more than $1,540,000,000 and additional sums variously estimated at $750,000,000, or $1,250,000,000, if the amounts expended for flood relief and other miscellaneous relief items are included.

The Hayden-Cartwright Act of 1934 provides that Federal aid may be extended only to states that use at least the amounts derived from state motor vehicle taxation for highway construction, improvement and maintenance and highway administrative expenses. If the states fail to observe this statutory provision and divert funds derived from motor vehicle taxation to other uses, amounts up to a maximum of one-third of the Federal appropriations may be withheld.[9]

The states defray the expenses of highway and bridge construction, acquisition of rights of way, highway maintenance and equipment, highway patrolling, interest on highway bonds, and administrative expenses, from taxation, and the issuance of bonds.

[6] Federal Highway Act, 1921, Section 6.

[7] See Federal Highway Act, 1921, Sections 7, 12, 13, 14, 15, 16, 17 and 21.

[8] Report Chief Bureau of Public Roads (1937), Table 5, p. 12.

[9] Hayden-Cartwright Act, June 18, 1934, Public No. 393, 73d Congress, Section 12.

The principal sources of revenue for highway purposes are taxes upon gasoline, motor vehicle and registration fees, motor carrier taxes, tolls on state highway bridges and ferries, and property taxes upon vehicles and real property.

Highway Taxation

Motor vehicle owners pay in taxes about $1,500,000,000 a year in state motor vehicle registration fees, state gasoline taxes, Federal excise taxes, and personal property city and county taxes. This does not include any of the taxes paid by motor truck, motor bus or taxicab companies, motor terminal companies, or the income and property taxes of individuals or companies engaged in motor vehicle part, body or tire manufacturing, in the operation of garages or repair shops, or in the distribution of motor vehicles or accessories. In each year since 1921, the amount paid by motor vehicle owners in taxes has increased. The average tax paid per automobile has increased from $12.22 per motor vehicle in 1921 to $48.15 per vehicle in 1936.

In 1937, the motor vehicle owner taxes included:

State registration fees and licenses	$399,613,000	
State gasoline taxes	756,930,000	
Federal excise taxes	340,447,000	
Personal property city and county taxes	88,000,000	(*including state motor carrier taxes*)
Total	$1,584,990,000	

Every state in the United States levies gasoline taxes ranging from a low of 2 cents per gallon to a high of 7 cents per gallon. In addition to the state gasoline tax there is a Federal gasoline tax, and in some counties and cities, county municipal gas taxes are also collected.

Special taxes and fees are levied in addition upon motor truck, and motor bus operators by Federal, state and municipal governments, in the form of special license fees or privilege taxes, mileage taxes, gross receipts taxes, income taxes and other special taxes. It is estimated that motor vehicle owners or operators pay between 14 and 15 per cent of all taxes, local, state and Federal.

The Federal courts have held that states and municipalities may impose reasonable taxes and other reasonable regulations that do not have the effects of depriving the owners or operators of the motor vehicles

of property without due process of law, or of imposing undue burdens upon interstate commerce, or upon resident and non-resident owners operating motor vehicles over the highways of the states imposing the regulations or taxes.

These regulations may take any form, including:

1. Motor vehicular license fees and regulations pertaining to the use of the highways [10]
2. Reasonable regulations governing the size and weights of motor vehicles using the highways [11]
3. Reasonable taxes upon mileage operated or gross-receipts of residents or non-residents using the highways as places of doing business [12]
4. Reasonable municipal regulations and reasonable taxes or fees imposed upon the conduct of motor carrier businesses using city streets.[13]

The Development of Automotive Highway Transportation

A new facility of transportation, the automotive vehicle, made its appearance in the United States, in 1895, when 4 "horseless buggies" or motor cars were manufactured and registered for use as passenger vehicles by private owners. The production of motor vehicles during the succeeding five years was small, never exceeding 2,500 cars per annum. The motor car is really the product of the Twentieth Century.

It was not until 1909 that the motor car became important as a means of transportation in this country. The United States Census of 1910 reported that 130,986 motor vehicles were manufactured in 1909 and that 312,000 were then registered in the United States. Between that year and 1927 there was a rapid increase year by year in the production of vehicles broken only by slight decreases in 1918 and 1921, and an unchecked advance in registration. In 1916, 3,512,996 motor cars and trucks were registered in the United States. In 1929 the production of motor cars reached the peak of 4,794,898, and 826,817 motor trucks were sold by factories. The total motor vehicle registration in 1929 was

[10] Hendrick v. Maryland, 235 U.S. 610, 1915; Kane v. New Jersey, 242 U.S. 160, 1916; and Hess v. Pawloski, 274 U.S. 352, 1927.

[11] Morris v. Duby, 274 U.S. 135, 1927; and Sproles v. Binford, 286 U.S. 374, 1932; etc.

[12] Clark et al. v. Poor et al., 274 U.S. 554, 1927, etc.

[13] Fifth Avenue Motor Coach Co. v. City of New York, 221 U.S. 467, 1911; American Transit Co. v. City of Philadelphia, et al., 18 Fed. 2d., 991, 1927; Hodge, etc., et al. v. Cincinnati, et al., 284 U.S. 335, 1932; Packard v. Benton, 264 U.S. 140, 1924; Sprout v. City of South Bend, 153 N.E. 504, 1926; etc.

26,501,443 vehicles. In 1938, after the decreases in production in the years between 1930 and 1934, and the years in which increases were noted in 1935, 1936 and 1937, there were 29,705,220 motor vehicles registered in the United States. By the end of 1939 the motor vehicular registration was 29,485,680 vehicles.

Before 1914, the motor vehicle in private or commercial service was a valuable asset, but since that time, it has become essential to business. The War gave great impetus to automotive transportation as a whole, and practical experience has shown that it is now an indispensable part of the transportation system, especially in the United States where time is an especially important factor in commerce and transportation. The motor freight truck has had a much shorter period of development than the passenger car. Prior to 1914, the annual production of trucks was small and the registry relatively unimportant. The use of motor trucks during the war period, as carriers of freight in military service and in urban and rural services in Europe and in the United States during and after the War, brought the motor truck to the fore.

The automotive manufacturing industries have become leading industries of the United States. In 1937, over 4,000,000 passenger automobiles and nearly 1,000,000 motor trucks were produced and sold by factories in the United States and Canada. The wholesale value of motor vehicles, parts and tires produced exceeded $4,300,000,000. More than $1,350,000,000 is invested in net tangible assets in automobile and motor truck factories in the United States. More than 500,000 persons are employed in motor-vehicle and motor-parts factories. The earnings of these workers exceeds $800,000,000 a year. More than 6,000,000 persons are employed directly or indirectly in highway transportation industries in the United States. There was an appreciable decrease in all of these figures for 1938.

The motor industry is so important in the United States that any substantial recession in this industry has a marked adverse affect upon industrial activity generally. The automobile industry ranks first in importance as consumer of the products of a number of important commodities including steel, 20%; gasoline, 90%; rubber, 80%; plate glass, 73%; nickel, 28%; lead, 31%; and mohair, 45%. In like manner the wide market for automobiles makes the automobile industry vulnerable when recession in industrial employment, commercial activity, and farm incomes cause decreased purchasing by members of these groups.

The relationship of the automobile industry to agricultural prosperity is apparent from the results of a study made by the United States Department of Agriculture, which indicated that 85% of the native white families living on farms own automobiles.

The spread of automobile ownership throughout the world is also of importance to the American automobile industry and through this industry to other American industries. Approximately 80% of the automobiles produced in the world are manufactured in the United States and Canada. Seventy per cent of all the motor vehicles registered in the world are found in the United States. Of the total number of motor vehicles manufactured in the United States in 1937, over 10% of the automobiles and 27% of the trucks were sold outside the United States.

The rise of the automobile industry has not only added an important group of industries to the industrial system of the United States, but it has greatly increased the amount and speed of travel and changed the travel habits and mode of living of a very large percentage of the people of this country. With one passenger automobile registered for each five persons, social and business travel has been greatly increased and the distance traveled by urban and rural dwellers away from their homes has been multiplied. This increased travel has done much to break down the isolation which formerly characterized farm and village life and the unrelieved concentration of life in large cities. Motor vehicles and good roads have woven the parts of the United States together into a more compact pattern.

The motor truck, bus, and private passenger car have made a rich contribution to the economic and social welfare of the United States. Farm production has been increased. The producers of raw materials have been assisted in bringing the products of remote sections to market or to railroad and steamship depots. The motor has aided mining and manufacturing, expedited the delivery of raw materials, the moving of goods within the industries and the distribution of products. Local deliveries from retailer to consumer have been quickened. The whole process of production and distribution has been facilitated.

The private motor passenger vehicle has extended the social and business activities of millions of people, while the passenger bus has become a part of the transportation system of virtually every city and town, and has added a new agency of intracity and suburban commutation and interurban travel. Millions of people now travel "on rubber,"

using motors either solely or as supplements to the other agencies of transportation. A recent estimate placed the amount spent annually in the United States in automobile touring at between two and three billion dollars.

TABLE NO. I

FACTORY SALES AND VALUE OF VEHICLES AT WHOLESALE PRICES FOR SELECTED YEARS, 1895—1938, INCLUSIVE

Year.[14]	*Number of Passenger Automobiles*	*Wholesale Value*	*Number of Motor Trucks*	*Wholesale*[15] *Value*	*Notes*
1895	300	——	——	——	——
1900	4,192	$ 4,899,443	——	——	——
1904	22,419	23,682,492	411	946,947	First year motor trucks were segregated.
1905	24,550	39,030,000	450	970,000	
1910	181,000	215,340,000	6,000	9,660,000	
1915	895,930	575,978,000	74,000	125,800,000	The World War in Europe.
1920	1,905,560	1,809,170,963	321,789	423,249,410	
1925	3,870,744	2,544,528,799	559,056	470,634,763	
1929	4,794,898	2,981,141,842	826,817	595,504,039	Peak year in passenger automobile sales.
1930	2,910,187	1,720,652,014	599,991	405,949,915	
1932	1,186,185	650,781,297	245,282	142,264,003	The low year of the depression.
1935	3,387,806	1,788,635,180	732,005	399,211,522	
1937	4,068,935	2,397,717,534	947,502	573,310,107	Peak year in motor truck sales.
1938	2,124,746	1,331,598,129	530,428	358,652,285	Figures for year ending December 31, 1938.

The number of passenger automobiles and motor trucks produced and distributed in significant years between 1895 and 1938 are shown in Table No. 1.

[14] Figures include United States factory sales and Canada production, 1925 to 1937.

[15] Value of bodies for motor truck chassis sold without bodies not included.

From the standpoint of the development of motor transportation as part of the transportation facilities of the United States the statistics of motor vehicle registration are of greater significance than the data pertaining to production and value. The registration of passenger vehicles and trucks for selected years between 1895 and 1903, and for passenger vehicles only between 1904 and 1938, are shown below in Table No. 2.

TABLE NO. 2

MOTOR PASSENGER VEHICLE REGISTRATIONS IN THE UNITED STATES FOR SELECTED YEARS, 1895—1938, INCLUSIVE

Year	*Number of Motor Passenger Vehicles Registered*	*Notes*
1895	300	Passenger automobiles and motor trucks.
1900	8,000	Registrations of automobiles and motor
1903	32,920	trucks were not segregated prior to 1904.
1904	54,590	Passenger automobiles only 1904 and
1905	77,400	later.
1910	458,500	
1915	2,309,666	
1920	8,225,859	
1925	17,496,420	
1929	23,121,589	
1930	23,059,262	Annual decreases in passenger registra-
1932	20,885,814	tion were recorded in 1930, 1931, 1932
1935	22,562,847	and 1933.
1937	25,449,924	Record year (1937).
1938	25,261,649	

The increase in the registration and use of motor trucks since 1915 has been spectacular. First used extensively during the period of traffic congestion on the railroads during the World War, the motor truck has been used in ever increasing numbers initially in the transportation of high-grade merchandise or freight requiring rapid movement and in recent years in the transportation of almost every type of goods. Certain types of freight movements formerly handled exclusively by railroad freight service are now transported almost exclusively by truck. In other cases, traffic once handled by railroad or steamship is competitive traffic for which railroads, steamship and motor carriers strive. One of the best examples of the numerous items of commodities which have become

competitive traffic, is the movement of live stock to the seventeen primary live stock markets. Prior to the World War virtually all live stock shipments received at these markets were transported by railroad service. In 1935, after 20 years in which the percentage of live stock traffic received by rail declined and the percentage received by motor truck increased, the percentage received by motor truck exceeded that received by rail for the first time. At present motor truck receipts of live stock at these markets exceed slightly the rail receipts.

The increase in motor truck registration in the United States for representative years since 1904, the first year in which "commercial vehicles" were registered separately from passenger automobiles, is shown in Table No. 3.

TABLE NO. 3

MOTOR TRUCK REGISTRATION IN THE UNITED STATES REPRESENTATIVE YEARS, 1904—1938, INCLUSIVE

Year	*Number of Motor Trucks Registered*	*Notes*
1904	410	First year of separate registration.
1905	600	Estimates
1910	10,000	Estimates
1915	136,000	Estimates
1920	1,006,082	
1925	2,440,854	
1929	3,379,854	
1930	3,486,019	Annual decreases in motor truck registration were recorded in 1931, 1932 and 1933, and a substantial increase in 1934.
1935	3,667,987	
1937	4,255,296	Record year.
1938	4,224,031	December 31, 1938.

The Motor Industries and Other Carriers

Motor trucks, as has previously been stated, have captured large amounts of traffic formerly transported by railroads and steamships. Private automobiles have diverted to the highways much passenger traffic which formerly moved by rail or water services.

The automotive industry has, however, contributed much freight to the traffic of railroads and steamship carriers in the United States. The Automobile Manufacturers Association estimates that motor transportation products provide more than four million carloads of freight traffic for the railroads, including shipments of gasoline, lubricating oil, crude petroleum, grease, tires, accessories, coal, steel, lumber, asphalt, cement, sand, gravel, and other road-building materials in addition to a large volume of less-than-carload freight and express traffic. In 1937, the automotive freight traffic of the railroads of the United States amounted to 4,156,000 carloads producing $473,431,000 in revenue. This represented 15.3 per cent of railroad carload traffic. It is estimated that the automotive industries used over 146,000,000 cubic feet of steamship space for shipments of automobiles and parts exported to foreign countries.

As a short-haul carrier within cities, as a carrier of special shipments requiring flexibility in movement, and as a carrier in the immediate vicinity of large cities, the motor renders its greatest services. The railroads and the steamship lines have inherent advantages as the carriers performing mass transportation service, and are equipped to move large volumes of goods for long distances at comparatively low rates. The railroads could haul over their lines a much heavier traffic than they are at present called upon to move, although there is evidence that the saturation point may have been approached in periods of peak traffic in many terminals under present terminal handling methods. The capacity of the entire railroad transportation system is limited by terminal operations. A later chapter will discuss ways in which the motor vehicle has and can be effectively used in increasing the efficiency and capacity of the railroads and other carriers, particularly in the terminal areas, in short-haul traffic, and in movements requiring speed, flexibility of service, and other special types of transportation services. Without doubt the motor vehicles —the automobiles, the motor trucks and the motor busses—have become large parts of the transportation facilities of every country, particularly the United States.

Although the advent and development of motor transportation particularly in the years following 1926 has caused destructive competition among motor carriers and between the motor carriers and other forms of transportation, ultimately the economic sphere of each type of transportation must and can be found by judicious cooperation and coordination and effective public regulation in the public interest. In the march

of progress new methods and new facilities are constantly being acquired and adopted. The new is adopted readily and swiftly, but the old is rarely discarded, and then only very slowly. So it is with the motor vehicle and the railroad. An important rôle of the motor vehicle is to do what the railroad is not fitted and equipped to do successfully or satisfactorily, and to supplement the work done by other instrumentalities of transportation.

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CHAPTER 46

Motor Freight Carriers and Services

The classification of motor freight carriers into types according to the services they offer, the routes or territories served, and the types of traffic transported is a difficult problem, because of the large number of operators, the variety of the operations, the multiplicity of services, and the almost indistinguishable divisions between the various classes. The several hundred thousand motor vehicle operators although they perform varied services and exhibit confusing characteristics should be divided into classes in order to obtain a clearer perspective of motor freight transportation.

TYPES OF MOTOR CARRIERS

The Federal and state laws recognize as one type of motor freight operators those who are engaged as private carriers, or private operators, in the transportation of goods of which the motor vehicle operators are owners, bailees or lessees, in connection with a commercial enterprise. The operators of vehicles engaged in private carriage derive their compensation for the use of the vehicles in the prices received for goods sold, or for bailment or other services rendered in connection with the goods and not in the form of transportation rates or charges. Private operators include those who operate motor vehicles in the production, manufacture, distribution, storage or consumption of goods; in building and other construction and supply services; and many other uses. Common carriers of freight by motor vehicle include those who hold themselves out to serve the public for hire or compensation up to the limit of the capacity of their vehicles and the types of services rendered, offering their services without discrimination to all who desire service.

Contract carriers of freight by motor vehicle are those who transport the goods of others for hire or compensation, not as common carriers but upon contracts or agreements entered into between the carriers and those served.

Another class of persons engaged in motor transportation includes brokers, those who are not common or contract carriers and not employees or agents of carriers, who hold themselves out as principals or agents to sell, or arrange for, motor transportation services. They act as intermediaries between shippers and consignees who have freight to transport and carriers who provide transportation services for hire.

CARRIERS WHOLLY OR PARTIALLY EXEMPT FROM REGULATION

The statutes of a number of states and the Federal Motor Carrier Act of 1935 exempt certain types of motor vehicle operation from regulation or limit the regulation to safety regulations. The types of operation exempted partially or wholly from Federal regulation include motor freight vehicles owned and operated by any farmer and used in the transportation of agricultural commodities, products or farm supplies; trucks operated and controlled by agricultural cooperatives; motor trucks used exclusively in the transportation of unmanufactured agricultural products, fish or livestock; and trucks used exclusively in the transportation of newspapers. Certain types of motor vehicles engaged in purely local terminal services and in the casual or occasional transportation of goods are also exempt until such time as the Interstate Commerce Commission finds it expedient to apply the Motor Carrier Act of 1935 to the operations.

TYPES OF MOTOR FREIGHT CARRIERS ACCORDING TO SCOPE OF SERVICE

One of the most easily identifiable types of motor carriers is the type which operates in regular scheduled service between fixed terminals over regular routes, such for example as a motor trucking company which operates between such points as New York and Boston in daily service each way over a definite route, such as U. S. Highway No. 1. The difficulty inherent in this classification is that many motor carriers which usually operate between fixed terminals and over regular routes sometimes operate over alternative routes because of road conditions or in order to serve communities not directly on the principal route or beyond the regular terminals. The inherent flexibility of motor trans-

portation which is often urged as one of the most important features and advantages of motor transportation makes it difficult to fix motor truck routes with anything like the degree of certainty and definiteness with which railroad routes are fixed.

Another type of operation in motor freight transportation includes the carriers which operate over regular routes, subject to the same qualifications as noted previously, which do not adhere to regular schedules but operate only when and if traffic is available. These operators do not undertake to provide truck service at certain hours each day, or once a day, or one or several truck movements each day or night, but operate between the termini and over the routes served irregularly in point of time depending upon traffic exigencies.

In both of these types of operation the carriers sometimes maintain terminal stations and platforms in the cities or towns at the extremities of their routes, although in many cases no such facilities are maintained, the motor carriers collecting and delivering all shipments at the places of business of shippers and consignees. In many cases, the motor carriers which operate over fixed routes between fixed termini also serve certain intermediate points and sometimes off-route points within a limited number of miles of the regular routes.

Other motor freight carriers fall into a group or class of those who serve a territory surrounding a city or town but do not operate over fixed routes but over any or all routes or highways in the territory served. An example of this type of operation is found in a motor freight carrier who maintains headquarters at a definite city such as Indianapolis, and maintains service in the general territory extending as far, let us say, as Chicago, Ill., and Toledo, Ohio, on the north; Columbus, Ohio, and Huntingdon, W. Va., on the east; Louisville, Ky., and St. Louis, Mo., on the south; and the Mississippi River, on the west. The Bureau of Motor Carriers of the Interstate Commerce Commission classifies this type of operation as "irregular route—radial operation."

Another type of motor freight service includes carriers which perform irregular route services generally in a district or territory but do not operate to and from any fixed territory or base. These carriers are the true "tramp" type of operators comparable to tramp vessel operators who serve any or all points in a territory to or from which traffic is offered for transportation. An example of this type of operation is a motor truck operator engaged in the transportation of goods between

points generally in the New England states without any city or town as the source from which the bulk of the traffic originates.

All of these types of motor carrier operations are "intercity," "long-distance," or "over-the-road" services. Another definite type of operation comprises motor truck operators who serve a single city or group of cities and towns constituting a single metropolitan area. These operators are engaged in a variety of local cartage services within these areas including trucking services between producers and wholesalers, wholesalers and retail distributors, distributors and consumers, between factories and warehouses, warehouses and shops or stores, the depots of carriers and places of business of shippers and consignees, and other trucking services collectively designated as local cartage services. In many cases, motor truck operators engaged in local cartage services are engaged to some extent at least in one of the various types of over-the-road services. A motor transportation company serving metropolitan New York including the Boroughs of that city, and a number of communities in northern New Jersey, is an example of a local cartage operator.

TYPE OF TRAFFIC TRANSPORTED

Another basis of the division of motor operators is the classification according to the types of traffic or commodities transported. Any of the types of motor truck carriers discussed may transport virtually all kinds of goods or may be engaged in the transportation of only one or a few commodities. In some cases, the carriers may have highly specialized vehicular equipment and transport only one commodity, such as milk in tank trucks. The most comprehensive classification devised thus far is that of the Bureau of Motor Carriers of the Interstate Commerce Commission which distinguishes between seventeen classes of carriers according to the types of traffic transported.

The types include the carriers of: general freight, household goods, heavy machinery, liquid petroleum products, liquid refrigerated products, solid refrigerated products, agricultural commodities, motor vehicles, building materials, films and related commodities, forest products, mine ores, explosives or dangerous articles, and other specific commodities, as well as carriers engaged in dump truck, armored car, and retail store delivery services. In the accompanying chart of the

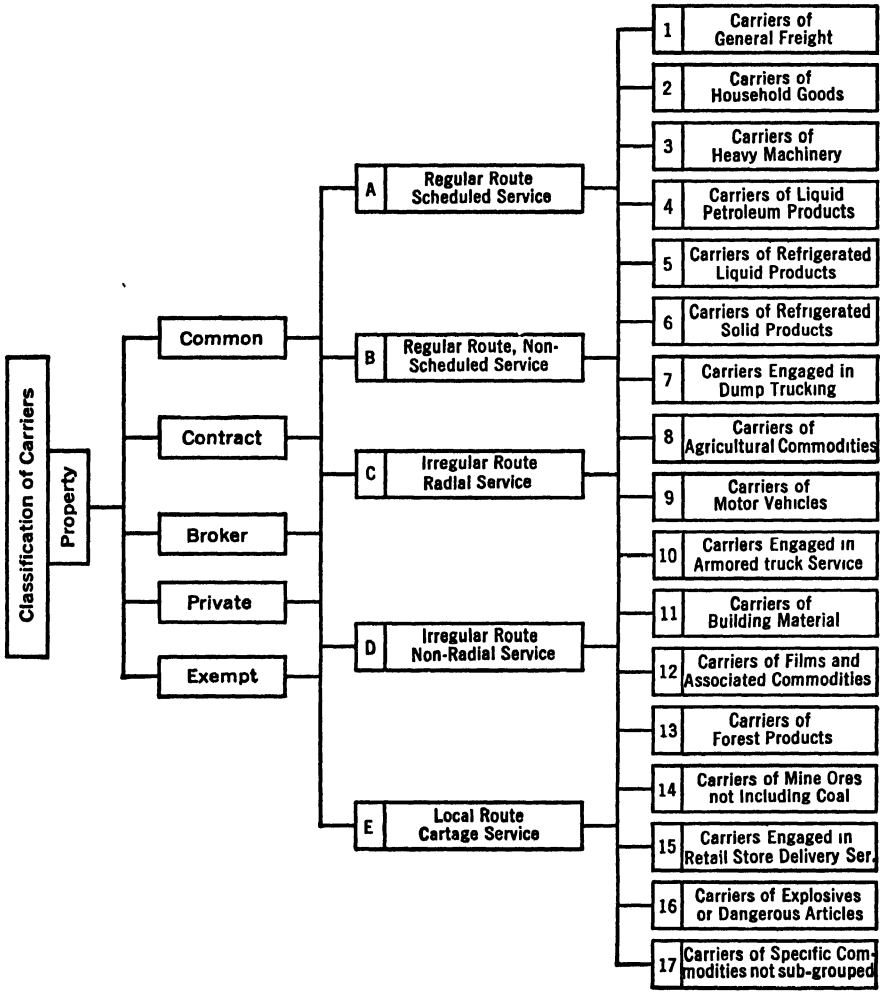

CHART 3

CLASSIFICATION OF MOTOR FREIGHT CARRIERS

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system of motor freight carrier classification used by the Interstate Commerce Commission, the classes are designated by letter to indicate the character of the service with respect to routes or territories served, and by numbers to distinguish the type of service according to character of traffic transported. A D-11 common carrier, for example, is one engaged in irregular route service transporting building materials; and an A-5 contract carrier is a carrier engaged in transporting liquid refrigerated products, such as milk, over regular routes in scheduled service upon the basis of contracts.

LENGTH OF MOTOR TRUCK HAULS

The length of motor haulage has been extended as a result of the improvements in highways and automotive equipment. The demand for rapid motor freight service has been increased by the growing needs of modern industry and commerce for faster freight service. The radius of activity of the independent motor line has lengthened also to meet those changed conditions of demand. Motor carriers now transport some kinds of freight more than 1000 miles. The length of the economical haul of the motor truck has been much discussed during recent years, and numerous studies have been made of this problem. It is not possible, however, to state the exact number of miles within which motor carriers can operate more efficiently than other carriers. The range of profitable haulage is determined by the condition of highway surfaces, grades, types of motor vehicles, wages of drivers and other labor, motor vehicle license fees and taxes, the price of gasoline and oil, gasoline taxes, and speed regulations; also by the kind and value of freight, the weather conditions, snow removal policy of states, the condition of other carriers' lines with reference to congestion, embargoes and service, the rates of freight via competitive carriers—rail, water, express, and parcel post—and the restrictions imposed by competitive carriers to exclude certain classes of traffic from their lines. Long hauls of low-grade commodities by motor truck are usually limited to shipments when expeditious movements are necessary because of exceptional conditions when the type of service cannot be rendered by carriers of other types, or when the costs of transportation are of secondary importance to prompt service.

In a comprehensive study of merchandise traffic made by the Federal Coordinator of Transportation, Section of Transportation Service, it

was found that the time required to complete the movement from the shippers' places of business to the consignees' store-doors or warehouses was a prime essential in merchandise service. It was found that the motor truck was generally superior to railroad freight service in this respect. The motor vehicles were found to maintain an average over-all scheduled speed of 20 miles per hour, including pick-up at origin and delivery at destination, while the railroad freight schedules between depots rarely exceeded this speed, and door-to-door service was much slower due to terminal congestion.

The conclusion was reached that the motor freight merchandise service is generally superior to railroad freight service in speed up to 150 miles origin to destination, but generally inferior for distances in excess of 350 miles. This speed superiority of the motor truck was found to be an important contributing factor to the diversion of a large part of the merchandise traffic formerly moving by railroads to motor transportation facilities, private operation and common and contract carriers. About two-thirds of the traffic formerly handled by railroad less-than-carload freight service and railway express service was discovered to be moving by other agencies of merchandise transport, including motor vehicles, freight forwarders and steamship carriers. It was estimated that the volume of merchandise traffic transported by highway was over twice that carried by railroad less-than-carload freight services, and more than half of the highway merchandise traffic was found to be transported for distances of over 50 miles.[1]

CARRIERS ENGAGED IN LOCAL AND OVER-THE-ROAD SERVICES

A variety of forms of business organizations are engaged in motor transportation, including individual proprietorships, partnerships, limited partnerships, joint stock companies, corporations and associations of various types.

Motor lines serving a typical urban area may vary from those having one man and one truck to organizations with large fleets of trucks and scores of drivers, helpers, and mechanics.

[1] Federal Coordinator of Transportation, Section of Transportation Service, "Merchandise Traffic Report," Washington, D. C. (1934), pp. 4-5, and statistical analysis.

The large and small motor trucking companies and the individual operators serving the shippers of local freight in their respective cities may supplement the trucking services that shippers perform for themselves or they may do all of a shipper's trucking. Local motor haulage companies perform a number of well-defined services: (1) local delivery services for department stores and other retail establishments; independent motor contractors may supplement the delivery services performed by the stores' own trucks in seasons of heavy traffic, although some merchants do not perform any delivery services, but contract for their performance by motor carriers; (2) local distribution services for jobbers, wholesalers, and other traders; (3) city and suburban delivery service from manufacturers to retailers or large consumers; (4) cartage service to and from railroad freight depots and steamship piers for all shippers and consignees requiring such service to supplement that of their own trucks or to take the place of their own motor services, or as agents of the rail or steamship carriers; (5) local baggage services; (6) special contract haulage services in connection with building operations and similar projects; and (7) package express service for the general public between points in metropolitan areas.

Local motor carriers both supplement and compete with other transportation agencies. They add to the facilities of other carriers by performing the cartage between the depots of the railroads and the warehouses and stores in the terminal districts. They also compete with the railroad and steamship lines, express companies and the parcel-post service in short-haul package freight services in and near the metropolitan areas. The motor carriers also compete directly with the express companies and their competition has been effective in the short-haul package service, especially in the carriage of perishables, dairy products, and small package freight.

Competition among local motor cartage carriers is keen in the larger and in many of the smaller cities. The bitter rivalry of all the agencies and their rate-cutting have caused in the past a deplorably large number of business failures. In several large cities local cartage associations or other combinations of local motor truckers or carriers have been formed and have stabilized conditions and helped to improve the relationships among the truckers. Fair competition improves the quality of local motor transportation service, but destructive warfare among carriers, unfair discrimination among shippers, price-cutting below reasonable

rates, and deviation from published schedules of rates, are in the interest neither of carriers nor of the public. The consolidation of motor carriers into larger and stronger companies and the more thorough public regulation of their services and rates will doubtless tend to eliminate abuses and benefit both the suppliers and users of services. Long-distance or over-the-road motor carriers, like those operating local cartage services, may be individuals or organizations with one truck or several or they may be concerns operating large fleets.

Long hauls over highways were not common before the World War when railroad congestion became acute, and when trucks were then called upon to haul freight that had previously moved by rail. In some parts of the United States embargoes were placed against the movement by rail of freight other than that essential to the War industries, and large quantities of freight thus embargoed as well as shipments that were permitted at that time to move by the railroads were handled by motor carriers, who having started to haul freight long distances, have continued to haul the goods in increasing quantities since that time, shippers having become accustomed to using motor freight services.

Before the World War goods were customarily purchased and shipped in comparatively large quantities, frequently in carload lots, by retailers and wholesalers whose usual practice was to keep large stocks of goods on hand. Orders were placed well in advance, and stocks were then not turned over so quickly as they now are. The shortage of many kinds of goods during the War, and the inability of manufacturers to maintain production equal to demand brought about a change in trade methods. Motor trucks came to be used extensively by manufacturers and traders in distributing goods which they had previously shipped in larger lots by rail. Relatively small stocks of goods, fast delivery, and rapid turnover are becoming salient features of distribution in the United States, and this has been brought about partly by motor transportation, and partly by faster freight services of the rail carriers. Virtually every city and town in the United States is served by some types of motor truck transportation service.

Most of the motor transportation companies engaged in all types of motor freight transportation services are small enterprises. The American Trucking Associations, Inc., estimates that over 80% of the for-hire operators in 5 eastern states, and over 85% of those in 5 western states studied are single-vehicle operators. Only 1.3% of the operators in these

eastern states and .3% of those in the same western states operate over 10 vehicles.

One of the many difficulties in the state and Federal regulation of motor transportation is the large number of carriers and the large percentage of the carriers who operate very small fleets.

MOTOR FREIGHT AGENCIES

Instead of maintaining their own stations motor carriers engaged in long distance and cartage services sometimes depend upon joint agents of a number of lines to provide facilities for storage and for the receipt and delivery of goods from and to connecting lines. Several motor lines, each serving its own route, establish a system of motor services radiating from centrally located agencies, both long- and short-haul carriers being served by a typical freight agency.

The joint agent usually provides a building with loading and unloading platforms, storage space for each member line, and equipment for handling freight. The agent receives freight brought by one operator to be turned over to other carriers. The short-haul lines bring into the agencies freight that is to be turned over to other lines for long-distance haulage, and accept from the long-haul lines freight for delivery in the city or suburbs. The agencies often supply clerical and other services needed by the motor lines they serve. The agents also advertise the motor lines, solicit business, assist in making rates, and function generally as business agents. Many shippers look to preferred agencies to attend to all of their motor freight shipments. All freight regardless of destination is turned over to the trucks operated by the agencies or by member lines and hauled to the agency warehouses. Here the goods are segregated according to destination and turned over to the respective lines for delivery. The agents are paid regular fees or commissions for their services and for the use of the facilities, and sometimes they have financial interests in the carriers operating from their headquarters.

REASONS FOR THE INCREASE IN MOTOR FREIGHT TRANSPORTATION

Many causes have contributed to the increased volume of freight traffic moved in intercity services by motor freight services, including those of

proprietary industries, and the services afforded by common and contract motor carriers.

First, the attractiveness of buying goods in smaller units and at less frequent intervals.

Second, the trend away from mass production to style production in some industries.

Third, the reluctance of wholesalers, jobbers, and retailers to maintain large stocks of goods. This emphasized the need for small lot movements, frequent purchases, and fast movement.

Fourth, the speed of transportation afforded by motor service.

Fifth, lower rates or lower total costs of transportation including door-to-door services.

Sixth, the greater convenience of door-to-door freight service by one carrier afforded by motor transport.

Seventh, the availability of service at hours of the day or night when other forms of transportation could not receive freight for transportation or make deliveries.

Eighth, the lower costs of preparing freight for movement by motor service, including exterior and interior packing.

Ninth, the reduction in the risks of loss and damage, found by some industries to be less in the case of goods handled by direct motor services than by other means of transportation, particularly when interchange between carriers was necessary.

Tenth, the greater simplicity and flexibility of motor classifications, rates and charges, particularly in the pioneer period of motor freight transportation.

Eleventh, the desire of many industries to use their own facilities for transportation, so as to obtain services when needed and at costs actually or apparently lower than the rates of transportation charged by rail or other carriers.

The "Merchandise Traffic Report" of the Federal Coordinator of Transportation, referred to previously, reported the consensus of opinion of over 35,000 shippers of freight with respect to their reasons for using motor freight services. These shippers controlled the movement of over 112,000,000 tons of merchandise freight traffic. The responses of these shippers are analyzed in Table No. 1.

The considerations limiting the use of motor vehicles by these same shippers are analyzed in Table No. 2.

TABLE NO. 1

RESPONSES OF SHIPPERS—MERCHANDISE TRAFFIC REPORT

REASONS FOR USING MOTOR TRUCKS

Reasons	*Number of Shippers* (35,468)	*Percentage of Shippers*	*Tons of Merchandise Freight* (112,142,038)	*Percentage of Tonnage*
1. Simpler classification or rates	5,664	16%	28,185,610	25%
2. Cheaper packing	7,521	21%	30,522,851	27%
3. Store-door pick-up	18,027	51%	60,293,671	54%
4. Store-door delivery	23,008	65%	74,933,479	67%
5. Cheaper total cost	18,665	53%	74,671,901	67%
6. Faster service	23,095	65%	82,302,031	73%
7. More flexible or convenient service	15,118	43%	68,512,668	61%
8. Late acceptance of shipments	7,328	21%	29,512,565	26%
9. Less damage to or loss of freight	4,062	11%	16,018,451	14%
10. Personal friendship or interest	956	3%	3,230,367	3%

TABLE NO. 2

RESPONSES OF SHIPPERS—MERCHANDISE TRAFFIC REPORT

REASONS LIMITING USE OF MOTOR TRUCKS

Reasons	*Number of Shippers* (35,468)	*Percentage of Shippers*	*Tons of Merchandise Freight* (112,142,038)	*Percentage of Tonnage*
1. Charges too high	3,495	10%	12,932,038	12%
2. Lack of uniform or definite rates	4,125	12%	17,505,764	16%
3. Lack of responsibility	8,936	25%	32,034,207	29%
4. Failure to maintain regular schedule	5,511	16%	16,980,547	15%
5. Pick-up or delivery inconvenient	2,540	7%	6,143,000	5%
6. Excessive loss or damage	903	3%	2,598,186	2%

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CHAPTER 47

Highway Passenger Transportation Services and Charges

Highway passenger transportation is performed chiefly by private passenger automobiles. The owners of the 24,600,000 passenger automobiles registered in the United States used these vehicles in the performance of approximately 500,000,000,000 passenger-miles per year. This estimate is based upon the number of automobiles, the average number of gallons of gasoline consumed per automobile per year, the average number of automobile miles per gallon of gasoline, and the average number of passengers transported per automobile.

The number of busses in operation in the United States as of December 31, 1938, is estimated at 132,600 busses. It is estimated that 29,400 of these vehicles were operated by motor bus carriers, and over 100,000 busses were used in various other services. The rapid growth in the number of independent motor carrier lines, in passengers carried, and of miles of routes over which passenger busses are operated in the past 20 years, is due to the motor vehicles' greater economic advantages, their flexibility or mobility whereby routes can be quickly altered, expanded, or contracted, as well as the competitive rates established by motor bus carriers. The census compiled by "Bus Transportation" of busses operated during the year 1938, shows that busses were used in the following classes of service:

REVENUE SERVICES:		
City services	29,200	
Intercity services	20,000	
Total busses used in revenue services		49,200
Sight-seeing and charter line services		2,300
Total		51,500

These figures include busses operated as common carriers and contract carriers by motor carriers, and by electric and steam railroads and their subsidiaries. The distribution of the number of busses operated in revenue carrier services is estimated by "Bus Transportation" to be:

By motor carriers	29,400
By electric railways	18,000
By steam railroads	1,800

Busses used in so-called "non-revenue" services are as follows: by hotels, 300; by industrial concerns, 500; school busses, 80,100, and miscellaneous 200; total non-revenue services 81,100 busses. Many school busses are operated by the school districts, but others are operated by common or contract carriers who charge the students or their parents for the transportation service.

Types of Independent Motor Bus Service

Motor bus transportation operations that are conducted independently of other transportation agencies may be divided conveniently into a number of fairly well-defined classes of service, including: (1) urban services in competition with steam and electric railroads; (2) urban services coordinated with or auxiliary to street railway, steam railroad, subway or elevated lines; (3) urban services of miscellaneous character, including boulevard sight-seeing or semi-sight-seeing services, school, hotel, factory and charter bus services; (4) suburban services; (5) intercity services, supplementary to other transportation systems; (6) intercity services partially or wholly in competition with other facilities; (7) motor tour services; and (8) rural motor passenger services.

Common carrier motor bus operators, like common carrier motor truck operators, hold themselves out to serve the public for hire in either regular route or irregular route services, usually the former. Contract motor bus carriers are engaged in transporting persons as a result of contracts of various types usually but not always in irregular services. In some cases busses are operated in private services in connection with other enterprises.

Motor passenger carrier services of an independent nature may be divided for convenience into three principal classes—urban motor passenger services, interurban services, and rural services.

Urban Bus Services

Motor passenger transportation in the large cities of the United States is often conducted as a part of the service operated by the electric railways that serve the cities. Over 800 motor carriers are engaged in urban service exclusive of 365 companies engaged in sight-seeing and

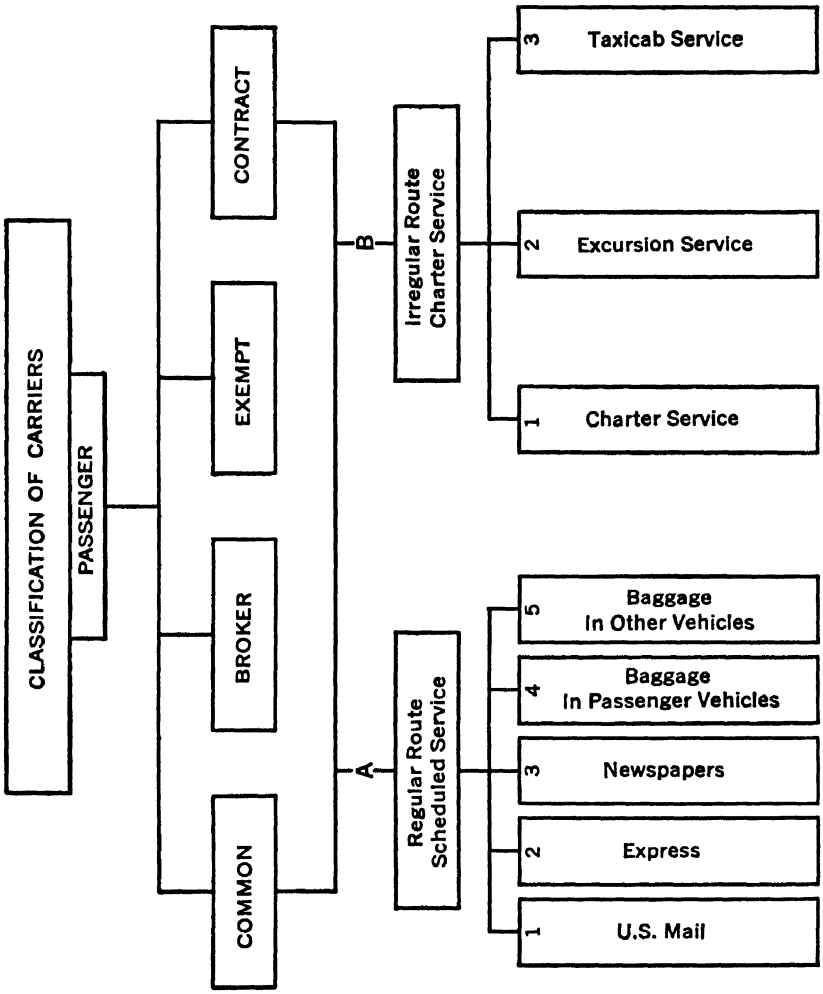

CHART 4

CLASSIFICATION OF MOTOR PASSENGER CARRIERS

tour services. Directly competitive urban services have, however, been operated in the past by independent motor bus companies, competing directly with the electric street railways.

Jitneys and passenger busses were frequently operated over routes which paralleled and sometimes coincided with the street car lines. The motor vehicles' schedules, ofttimes, were so arranged that the motor cars preceded the street cars by a few minutes at each stopping point, and waiting passengers were taken away from the street railways by this practice. In other instances, motor passenger lines operated over routes which more or less paralleled important street-car lines, but which were on other streets. These forms of direct competition between electric railway and motor bus lines, common enough in the past, have been eliminated in many cases by the acquisition of the motor lines by the street car systems, by forcing jitneys and bus lines from the streets of many cities, and by the action of state and municipal authorities in arranging the competing services so that the public may be adequately served without permitting the rival utilities to compete ruinously with each other.

There are, however, several important examples of independently operated motor bus lines in the United States. The Fifth Avenue Coach Company of New York City and the Chicago Motor Coach Company are noteworthy cases. Routes are maintained by the busses over streets paralleling the existing surface and highspeed electric lines and in some cases over identically the same streets. In several other cities the demand for motor bus service is met by busses operated by independent bus companies and also by the street railway company. In a number of cities and towns in the United States motor busses have completely replaced street car facilities.

Motor busses are extensively used to provide urban service into sections that are inadequately served by existing transportation facilities. Service of this character is sometimes afforded by the use of motors by street railway companies, and in other cases by independent operators. The busses act as feeders to the electric lines, and the operations, whether maintained by independents or by the proprietors of the traction utilities, are much the same in character. In Philadelphia, the Philadelphia Rural Transit Company operated a number of bus routes to supplement the services of the surface car lines and of the subway and elevated railways which latter were owned by the municipality but operated by the

Philadelphia Rapid Transit Company. All of these facilities are now operated by the Philadelphia Transportation Company. In Detroit, Cleveland, Los Angeles, Washington, Newark, and New York, the traction companies or the municipalities have developed motor bus routes auxiliary to or replacing electric railway routes. A number of steam railroads have undertaken the use of motor busses to supplement or replace their local passenger trains.

In many urban districts as well as in rural sections, motor busses are extensively used to convey children to and from schools where the electric and steam railway services are not available or are inconvenient. Bus services of this type are operated by public school districts, private schools and by private busmen. In 1938 busses were used to transport over 3,000,000 persons to and from schools. Many hotels, especially the tourist resort hotels, operate their own busses to and from railroad stations and steamship terminals for the accommodation of their patrons. Factories located in off-railway places operate busses, or retain busses which are run by independents, to carry their employees between their homes and places of employment. Sight-seeing busses, which are to be found in virtually every large city and resort, differ from the semi-sight-seeing busses operated over the boulevards of larger cities. The former are used primarily to take tourists about, while the latter are used partly for tourists and visitors and partly to augment the services of street railways. Sight-seeing bus services are operated, for the most part, by independent companies while the semi-sight-seeing lines are operated, in some cases, by independent companies, and, in others, by the local traction utilities.

Passenger busses are available in nearly every town and city for charter service to transport groups of persons to and from picnics, conventions, exhibitions, athletic events, and other gatherings. These vehicles are usually owned by individual or independent companies, although some street railways own fleets of busses and have departments to develop party traffic.

The suburban and semi-suburban districts surrounding the larger cities of the United States have developed more rapidly, in many instances, than the urban traction facilities have expanded. New homes have been built on the outskirts of cities and towns often at a considerable distance from electric and steam railways. The high cost of construction and maintenance of electric lines has prevented the expansion

of street railways into many of these suburban areas where the traffic density is comparatively light, and motor busses have been extensively used to serve the new districts.

In other suburban sections, motor busses have been extensively used to supplement other facilities. Bus lines have been organized to radiate from important railway junctions, and are also operated over routes parallel, and in competition, with rail lines.

Suburban development services by motor are operated by steam railroads, electric railways, and independent motor bus operators. Bus lines started by independent companies have frequently been acquired by utility companies; but there are still many independent operators doing an important work in relieving urban congestion by providing rapid transit into suburban districts. The lines of the steam and electric railways in metropolitan areas surrounding the larger American cities resemble spokes radiating from the hub of a wheel. The motor bus has made possible the settlement of suburban tracts between these radial lines. The highways as well as the railway lines have now become arteries of suburban commutation travel.

Urban passenger busses perform about 715,000,000 miles of revenue transportation service, and earn over $192,000,000 in revenue. Annually they transport more than 2,800,000,000 passengers. Approximately 13,000,000,000 passengers are transported annually by all means of transportation in urban communities. The distribution of these passengers among the agencies of urban transportation is:

Surface electric railways	56.49%
Motor busses	22.46%
Rapid transit, subways and elevated lines	18.27%
Electrified suburban railroads	1.49%
Trolley busses	1.29%

Intercity Bus Services

The field in which the independent motor bus has been the most prominent is the intercity or interurban service. Approximately 3600 motor bus companies are engaged in intercity passenger services of various types. The scope of interurban bus services is very broad, including both those that border on the suburban services discussed above, where the route mileages are relatively short, and those important services between large centers of population separated from one another

by several hundred miles. The intercity lines have been developed to provide rapid, comfortable and economical long-distance highway transportation. Intercity bus operations are often directly competitive with the services of established steam and electric railways, and have made considerable inroads upon their revenues.

The successful operations of motor busses over intercity routes have been facilitated by the impoverished financial condition of many electric interurban lines. These roads have in many cases been facing bankruptcy and have allowed their roadbed, rolling stock, and general standards of service to deteriorate. This situation made it possible for independent bus lines with new busses run on attractive schedules to attract a large share of the electric interurban passenger traffic away from the rail carriers.

Few new electric interurban railways have been built within the past ten years and the extension of the steam railroads into new territory has been infrequent. Motor bus lines have been used to develop new interurban routes. A large number of electric lines and certain steam railroads have been active in acquiring competing motor bus lines or in developing their own passenger bus services.

Intercity motor bus services have been developed between virtually all large cities of the United States, and through or connecting services make it possible for persons to travel by bus over routes ranging from a few hundred miles to those which are transcontinental in character. These services are directly competitive with railroad passenger services. Sleeper busses are used in a few overnight runs.

Intercity independent motor bus lines as well as those operated within the larger urban districts have developed touring services in addition to their regular scheduled runs. The tours are conducted by the motor lines or by interests which employ the motor lines to conduct the tours. The service includes transportation by bus, hotel accommodations, and meals. In Florida, California, New England, and many other sections of the country, especially in the National Parks, extensive motor trips have been developed successfully.

The intercity public carrier busses operate over 345,050 miles of highway route. They perform 1,359,000,000 revenue bus-miles of service, transport 627,000,000 passengers and earn $298,000,000 in revenues annually.

Rural Motor Bus Services

The motor bus is in many respects an ideal rural passenger carrier. The small initial investment has made bus service possible where steam or electric lines could not have been profitably operated. Light traffic, the freedom from peakloads, and the ability to meet relatively infrequent service demands profitably, make possible the operation of rural district routes. Fixed charges are relatively low and operating costs may be reduced by conducting the rural business as a part-time service where the traffic is light, the proprietors devoting the rest of their time to other pursuits.

The bus can often meet the requirements of rural service better than the electric railway can, because the fixed charges are less for the bus operators. Busses in such areas are often operated in connection with a public garage and repair shop. The men who operate the busses are employed in the garage between trips, and labor costs are proportionately reduced.

Irregular and Sight-Seeing Services

The public motor busses employed in sight-seeing and irregular or miscellaneous services operate over 26,000 miles of route. These busses, it is estimated, transport 3,360,000 passengers and earn over $8,400,000 in operating revenues annually.

Taxicab Service

One of the types of motor passenger transportation that cannot be overlooked is taxicab service. Taxicabs have become important parts of the passenger transportation facilities in every city and in many smaller communities of the United States. These vehicles may be operated by individual owner drivers, by taxicab companies or by associations. They are operated over irregular routes upon call and demand of the public, either at flat, zone, or metered rates of fare. In many states the services and fares of taxicab operators, as common carriers, are regulated by the state regulatory commissions. In some cases the taxicab operators solicit patronage from designated stands at or close to railroad stations, steamship piers, motor bus terminals, airports, hotels, theatres, or similar places where prospective users are to be found. In other cases, the taxicabs cruise the streets for business. Cruising is prohibited or restricted

in some cities as a factor contributing to traffic congestion or to highway accidents.

Motor Passenger Fares

The bases upon which fares for motor bus passenger services are calculated vary so widely according to the types of service, that generalizations with respect to all motor passenger fares are impossible. The bases vary depending upon the geographical nature of the services, whether they are urban, short-distance interurban, or relatively long-distance intercity services. They vary also with the status of the motor passenger services whether they are coordinated with other forms of transportation or operated as independent services. There are variations in fare bases also depending upon whether or not the bus services are operated in direct competition with other passenger services.

Urban Passenger Fares

The rates of fare charged by motor bus companies in urban services are of several varieties. Motor busses operated as supplementary services to urban street car or rapid transit companies are usually operated by the local transit companies or by the municipalities. The rates of fare charged in such cases are often the same as the fares of the transit companies, although in several cities a slightly higher fare is charged for bus than for street car, subway or elevated services. For example, in cities where the cash electric railway fare is 8 cents or two tokens or tickets for 15 cents, the bus fare is 10 cents straight. When the motor bus services are operated by the transit companies, motor bus companies subsidiary to the transit companies, or by the municipalities, transfer or exchange ticket privileges are afforded in order to encourage the use of combinations of electric railway and bus or combinations of bus routes. In some cases an extra charge of a few cents is made for exchange tickets. Frequently when the interchange is from an electric railway car or rapid transit service to busses, an extra charge is made to equalize the bus fare. Thus, if the street car fare is 7 cents and the bus fare is 10 cents, a transfer from street car to bus is sold at 3 cents.

Motor bus services have replaced entirely certain street car services either completely or in parts of cities or towns. In such cases, it is usual to find the motor bus fares the same as the rates of fare charged by the street car companies. In New York City, where motor busses have been

substituted for street cars on Broadway, the motor bus fare is 5 cents, the same as the street car fare formerly charged for the street car service in the district and for rapid transit service generally in New York City.

A further complication is introduced by the adoption by street car companies in some cities of weekly fares or "passes" good for unlimited rides during the week in which the pass is purchased. In some cases, the weekly pass is honored on all street car or motor bus routes. In other cases a different charge is made for passes good on street cars only and a slightly higher rate is charged for passes good on both street cars and busses. In some cases passes are not honored on suburban motor bus routes where the rates of fare are higher than the fares within the cities proper. The Capital Transit Company of Washington, D. C., sells a weekly pass at $1.25 per week good for fare on any street car route or motor bus route excepting two long-distance suburban routes where the cash fares are higher than the street cars or bus fares charged on other routes.

In urban services a number of motor bus companies are operated independently of the street car or rapid transit services. Two radically different types of fares are charged under these conditions. In many communities where this competition exists the electric railway and motor bus fares are identical. In other cases, particularly when the motor bus companies serve a slightly different area or perform services considered to be superior to those of the electric railway, the motor bus rates are somewhat higher than the electric traction fares. Examples of this latter situation are found in the motor bus services which are operated in sections of the cities not served by street cars or rapid transit, and where de luxe motor busses are operated between residential sections and down-town office buildings and shopping districts. In New York City, the Fifth Avenue Motor Coach Company, which is independently operated, performs services on Fifth Avenue, Riverside Drive and certain other major arteries and connecting streets at a 10 cent fare. The street car, subway, elevated, and supplemental bus fares are, as has been stated previously, 5 cents. One of the explanations of this rate of fare is the extensive use of the Fifth Avenue Motor Coach service for sight-seeing. It may be classed as a boulevard de luxe or special service.

School and factory busses are operated, in some cases, without any fare being charged for the services. The busses in such cases are owned and the operators employed by the school districts or industrial con-

cerns and used only to transport the students to and from the schools or employees to and from the factories. In other cases, independent operators contract with the school districts or industries for the bus and chauffeurs at a flat rate per week or month. In still other cases the pupils or workmen are charged a flat single trip or weekly fare by the independent operators. The charges in such cases approximate trolley rates. Hotel busses are usually operated without fare; they are used to solicit patronage for the hotels, and the expenses of operation are absorbed out of the general hotel revenues.

Fares of bus lines in the suburban field, like the charges for auxiliary services, tend toward street railway fares for comparable services, with the exception that when the suburban motor bus routes extend outside the cities or into the more remote suburbs within the cities, or where the motor bus services are superior to the electric railway in directness of route, or speed, or quality of accommodations there is a tendency for the motor bus rates to be higher than the electric railway fares.

Taxicab Fares

Although taxicabs cannot be classified as types of motor busses, their services and rates should be considered briefly in connection with urban transportation fares. Taxicabs supplement and compete with other forms of urban transportation. This competition is particularly acute in cities where taxicab rates are relatively low and where a number of persons can ride in a taxicab at the same rate of fare as that charged for one person.

Taxicab rates are usually made upon one of three principal bases. The bases used in many large cities is a metered mileage basis, usually with a comparatively large initial rate and rates graded upward by shorter metered mileage distance units. For example, 15 cents may be charged for the first quarter mile or fraction of a mile and 5 cents additional for each one-quarter mile, as measured by the taxi-meter. This type of taxicab fare is used in New York City and in many other large cities.

Another basis of taxicab fares is the zone system of fares in which the city is divided into zones or districts with a flat rate of taxi fare applying in each zone and the highest zone fare applying in cases of service from zone-to-zone. This system of taxicab fare is used in several cities, including Washington, D. C., where the District of Columbia is

divided into several zones, each with a different rate of taxicab fare. Outside the District of Columbia the fares are graded upward according to distance.

A third type of taxicab fare basis is found usually in smaller communities where flat rates are charged between all points within the established limits of the communities.

Extra service charges are customarily made for the transportation of trunks or heavy baggage, for waiting time, and other extraordinary services.

Interurban Motor Bus Fares

In interurban motor bus services the rates of fare are influenced by the nature and extent of competition among motor carriers, by competition with interurban electric railways, and by competition with steam railroads. The interurban motor bus services engaged in operation between points within approximately one hundred miles of each other often have direct competition of other bus lines, electric interurbans or steam railroads, or several or all of these competitors. In such cases the bus fares tend to be equal to the lowest of these competitive rates. In cases where competition exists at extremities of the lines or at certain intermediate points, the fares between the terminals tend to be fixed to meet the competition, while rates at non-competitive points tend to be higher than they would otherwise be. The fares to or from the non-competitive points as a rule are not higher than the rates to or from the more distant competitive points, although they are usually higher per mile of service.

When interurban electric or steam railroad competitors offer commutation rates upon lower bases than the straight one-way or round trip fares, similar rates are usually made by bus lines.

Intercity or Long-Distance Motor Bus Fares

Motor bus services connecting the large cities and intermediate points on the principal highways of the United States are in direct competition with railroad and, in some cases, with steamship passenger services, as well as with other motor bus operators. Indirect but nevertheless potent competition is offered also by the operators of automobiles who transport paying guests and by private automobile owners. The fare-controlling factor is usually the competition of the railroad coach

service. Motor bus fares for long-distance services have tended to be lower than railroad coach fares between the same points. The amount of the differential between railroad coach fares is not uniform now nor has it been in the past. With increasingly comprehensive state regulation and with Federal regulation of interstate motor bus fares and the fares of other passenger carriers, the tendency toward stabilization of motor passenger fares has been marked—much more so than in the case of motor truck rates. There are relatively fewer motor passenger carriers than motor freight carriers and the motor bus operators are usually larger and more easily located companies than those engaged in highway freight transportation.

It may be said in general that intercity or long-distance motor bus fares are usually about 2 cents or slightly less per passenger mile.

Some of the long-distance motor carriers of passengers are completely controlled by individual railroads or by several railroads jointly or occasionally by managements composed of motor bus and railroad interests. In cases of this type, the fare policies of the motor bus companies tend to be fixed with reference to railroad passenger fares, generally slightly lower than the railroad coach fares between competitive points. At intermediate points there is a tendency to spread or blanket the fares to or from the terminal points for considerable distances.

In certain parts of the United States, in national or state parks or reservations, or in other areas where no railroad or electric railway or other bus competition is present, motor bus rates are usually much higher per mile of service rendered. The fares in such cases tend to be fixed by consideration of costs of operation, fixed charges, maintenance, and a return upon the capital invested.

Care should be exercised not to draw conclusions as to the relative reasonableness of rates of motor bus fares under competitive and certain kinds of non-competitive services; because in certain of the latter cases, particularly where the seasons of operation are short, relatively heavy annual fixed charges must be carried by operations which are conducted only part of the year. The costs per unit of service rendered are apt therefore to be materially higher than unit costs under normal conditions of operation.

The rates of fare for motor tour services including bus fares, hotel accommodations, meals, and baggage services tend to be set at lump sum prices to include the transportation services at rates equal to or

lower than competitive railroad or steamship fares and amounts sufficient to cover the costs of hotel services, meals, baggage and other incidentals.

The rural motor bus usually does not compete with other public utilities and the fares are presumably so fixed as to cover the cost of operation and yield a fair return upon the investment. Such competition as is rendered in rural motor bus services usually is afforded by private automobiles and motor trucks. The busses used in rural services often transport mail, express matter, packages, and other goods in addition to passenger traffic, in order to augment their revenues.

Charter motor vehicle services, in the local or long distance fields, are performed for groups of persons at rates based upon rental of the busses and services of drivers for the periods of time required for the services. The charges for charter busses are governed by the availability of equipment in route or other charter services, by the advantages of using busses in charter services supplementary to route services, the types and capacity of busses used, and costs of operation, and in addition a return upon the capital investment.

The Regulation of Motor Bus Fares

Motor bus fares are subject to regulation by Federal, state and, in some cases, local regulatory commissions or departments. Interstate common and contract motor bus operators are subject to the jurisdiction of the Interstate Commerce Commission as to rates and fares. These regulations are similar to the powers of the Interstate Commerce Commission in regulating the rates of common and contract motor carriers engaged in the transportation of freight in interstate commerce.

The fares must be reasonable, and free from unjust and unreasonable discrimination or undue preference among persons, places, or types of passenger traffic. Rebates are forbidden. Free or reduced rate transportation is forbidden except to bona fide employees of motor carriers or to certain other classes of persons engaged in charitable work. The tariffs of fares of common carriers and the schedules of minimum charges and contracts of contract carriers must be published, by the carriers, posted in their stations for public inspection, and filed with the Bureau of Motor Carriers of the Interstate Commerce Commission. Changes in the fares may not be made except upon thirty days' notice to the Interstate Commerce Commission, unless the changes are permitted by

the Commission in the exercise of its discretion, upon showing of good cause by the carriers proposing to make the changes. The Commission has authority to require common carriers of passengers to establish reasonable through routes and joint fares and fix reasonable divisions of the fares among the carriers participating in the routes.

The provisions of the Motor Carrier Act regulating the fares and charges of interstate motor passenger carriers do not apply to school busses, hotel busses, taxicabs, motor busses operated under the control of the United States Secretary of the Interior in the National parks, trolley busses operated by overhead trolley wires, or motor vehicles used in the "casual, occasional or reciprocal transportation of passengers by persons not engaged in motor transportation as a regular business." [1]

State regulation of motor passenger transportation fares and charges for intrastate services tends to follow the pattern fixed for interstate services by the Motor Carrier Act and the regulations of the Bureau of Motor Carriers of the Interstate Commerce Commission. This tendency has been particularly pronounced since 1935. At present motor bus services and fares are regulated to greater or less extent by public utility or public service commissions, by state regulatory departments, or other bureaus or boards in 47 states and the District of Columbia.

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[1] Motor Carrier Act, 1935, Section 203 (b).

CHAPTER 48

Motor Freight Rates and Charges

Motor freight transportation is performed upon a great variety of bases of compensation. Private motor freight operators transport the goods which they themselves own or which are in their possession as bailees without specific charges for the transportation services, receiving compensation as part of the sales price or charge made for other services including transportation. There are some very close questions to be decided in distinguishing private motor freight services from common or contract carrier services for which separate transportation charges are made. For example, a manufacturing company sells goods upon a basis of f. o. b. (free on board) the seller's warehouse at the sales point and trucks the goods to the depot of a line-haul carrier for transportation, adding to the invoice price a charge for trucking the goods from the warehouse to the depot of the line-haul carrier. Opinions differ as to whether this is private transportation or contract or carriage for hire. Some manufacturing companies have organized separate subsidiary motor trucking companies to haul such shipments as common or contract carriers, depending upon the conditions under which the trucking is performed. In cases where the motor vehicle operator purchases goods at a place where they are produced or manufactured, transports them to a market, and sells them at a price which includes all costs and profit including compensation for transportation, although no separate charge for transportation service is included, a close question is raised as to whether this should be classified as a carrier service or private transportation incidental to the conduct of some other commercial enterprise.

In the types of services rendered by motor vehicle operators as contract carrier services the charges for transportation or the minimum charges for the services are fixed by the oral or written contracts entered into between the carriers and the owners of the goods. The minimum charges of contract carriers and the contracts or memoranda of the agreement, if the contracts are oral, binding the carriers and shippers

must be filed with many state regulatory commissions, and if applicable in interstate commerce they must be filed with the Interstate Commerce Commission.

The rates and charges of common carrier motor freight operators as a rule are based upon units of weight, piece or package. The rates are published by the carriers and the public is officially notified of the rates and charges by the filing of the tariffs containing the rates with the state regulatory commissions in intrastate commerce and with the Interstate Commerce Commission if the rates are applicable in interstate commerce.

Classification of Motor Freight

Goods transported by motor freight carriers are classified for rate making purposes into class ratings or groups according to the commercial or transportation characteristics of the goods, so that class rates may be made upon all types of goods in order to avoid the multiplicity of commodity rates which otherwise would have to be made upon thousands of different commodities.

Prior to Federal regulation of interstate motor transportation a great variety of systems of freight classification were used by motor carriers. These systems included (1) the assignment of goods into "light" and "heavy" freight classes; (2) the classification of goods into groups depending upon the types of packages containing the goods, whether bales, boxes, crates, barrels or other containers; (3) the classification of goods into related groups of analagous commodities; (4) the assignment of goods into classes according to the space occupied in proportion to weight upon the basis of a fixed number of cubic feet per one hundred pounds; (5) the use of the railroad freight classification; (6) the use of the railroad freight classification modified usually by reducing the number of classes to four classes; (7) the use of individual classifications by carriers; and (8) the use of agency motor freight classifications published by agents or bureaus in which individual participating motor carriers concurred.

Since the passage by Congress of the Motor Carrier Act, 1935, requiring interstate motor carriers to establish and maintain reasonable classifications of goods transported, there has been a tendency toward: (1) the publication of classifications by agencies, including notably the National Motor Freight Classification published by Agent C. F. Jackson, American Trucking Associations, Inc.; and (2) the adoption by

and participation in the Consolidated Freight Classification published by the Consolidated Freight Classification for the railroads, steamship companies, and motor carriers parties to the classification. A number of motor carriers still publish their own individual classifications but the number of carriers maintaining individual classifications in proportion to those participating in agency motor carrier classifications and the Consolidated Freight Classification is decreasing. The tendency toward uniformity in motor freight classification within classification territories has been pronounced since the advent of Federal regulation and increased state regulation during the past few years.

National Motor Freight Classification

The National Motor Freight Classification was originally published in two volumes, one devoted to less-than-truck load shipments and one to volume shipments. The classifications were issued by C. F. Jackson, Agent, National Motor Freight Classification Committee of the American Trucking Associations, Inc., Washington, D. C., to become effective April 1, 1936. Subsequently, effective December 24, 1936, the two volumes were consolidated into one motor freight classification publishing ratings applicable to less-than-truck loads as well as to volume shipments.

The present National Motor Freight classification contains: (1) the descriptions of the articles; (2) the rules and regulations governing the transportation of goods by motor truck service; (3) the forms of the uniform motor carrier domestic and through export bills of lading of the straight, or non-negotiable, and order-notify, or negotiable, types; and, (4) the application of the classification ratings in the East, South, and West Classification Territories. More than 8000 articles are listed, described and rated in less-than-truck load and volume quantities, in the Classification under approximately 40,000 ratings. In some cases the articles are rated identically in the East, South and West Territories, but in other instances different ratings are applied in each of these territories. About 3800 motor freight carriers are now parties to the National Motor Freight Classification.

The Consolidated Freight Classification

The Consolidated Freight Classification to which all railroads, many coastwise and inland water, and an increasing number of motor, carriers

are participating parties, has been discussed in the Chapter dealing with Railroad Freight Classification and Rates (Chapter 11). Over 500 motor freight carriers are participating carriers in the Official, Southern, Western and Illinois Classifications published in one volume, the Consolidated Freight Classification.

Motor and Railroad Classifications and Ratings

The National Motor Freight Classification and the Consolidated Freight Classification have many points of similarity with respect to commodity descriptions, packing specifications, rules and regulations, and volume or carload minimum weights. Due to competition between rail and motor carriers and the coordination of rail and motor transportation each of these classifications has influenced the other and doubtless will continue to do so in the future.

The National Motor Freight Classification publishes the following class ratings: (1) higher than first class,—1¼, 1½, 1¾, D1, 2½, 3t1, 3½t1, 4t1, and 5t1 first class; (2) first class and lower; 1, 2, 3, F or 55% of first class, 4, 45% of first class, 5, 6, and 7; and (3) percentages of first class such as follows: 77½%; 75%; 65%; 60%; 50%; 45%; 40%; 37½%; 37%; and 30% of first class.

The Consolidated Freight Classification publishes ratings: (1) higher than first class; 1¼, 1½, 1¾, D1, 2½t1, 3t1, 3½t1, and 4t1, and (2) first class or lower, in official and Illinois Classification,—1, 2, R.25, 3, R.26, 4. 5. and 6; in Southern Classification classes 1 to 12 inclusive; and in Western Classification 1 to 5, inclusive, and A to E, inclusive.

Motor Freight Rates

The rates of motor freight carriers have undergone great changes in the past twenty years. Prior to and during the World War the demand for transportation service and for fast service was relatively greater than the available supply of motor trucks with the result that motor carriers generally transported relatively high-grade freight traffic at rates that were substantially higher than the prevailing rates of rail carriers. Later, particularly in the period from 1920 to 1929, the number of available motor truck services tended to increase more rapidly than the increase in the total volume of freight traffic, with the result that competition among motor operators and between motor carriers and

other forms of transportation caused the motor carriers to transport virtually all kinds of traffic at rates equal to and sometimes lower than the total charges for rail transportation. Following 1929, the total volume of all freight traffic decreased much more rapidly and substantially than the slight decrease in the number of motor trucks registered. There were slight decreases in motor trucks registered in the years of 1931, 1932 and 1933. Gains in registration were recorded in 1934 and in each subsequent year. The inevitable result was the rapid decline in the levels of motor freight rates throughout the United States and particularly between the large centers of population where the motor carriers often competed for traffic at rates upon bases barely sufficient to cover expenses of returning to the cities where their headquarters were maintained. This ruinous competition often depressed motor freight rates below a compensatory basis.

Since 1935 there have been sustained efforts exerted by many motor carriers and by other competitive carriers to increase rates to levels compatible with increased costs of operation, and to stabilize the rates structures of motor carriers. The provisions of the Motor Carrier Act, 1935, and those of the state regulatory laws are directed toward making motor freight rates reasonable in themselves, free from unjust and unreasonable preference, discrimination or prejudice, and reasonably compensatory to carriers of all types.

The interstate rates, fares and charges of common carriers and the minimum rates or the contract rates of contract carriers are subject to regulation by the Interstate Commerce Commission. The Motor Carrier Act, 1935, provides for different kinds of regulation for the interstate rates of common and contract carriers, reflecting certain essential differences in the services of these two classifications of carriers. The term "rate" as it is customarily used means the price per unit of transportation shipment,—hundred pounds, ton or container. The term "charge" usually means any amount assessed for additional or special services, such as collection or delivery, storage, diversion or reconsignment, special handling, split deliveries, or other accessorial or supplemental services performed by the carriers in addition to the customary transport operations.

Common carriers are required by law to establish and enforce reasonable regulations and practices in classification, rate making and charges for their services. Undue and unreasonable discrimination or

preference among persons, places, or kinds of traffic is prohibited. Joint rates may be established, if mutually agreeable to the carriers, between motor and other regulated carriers—railroad, steamship, or express. The Interstate Commerce Commission has jurisdiction to fix the division of joint through rates among the carriers.

Complaints with respect to classifications, rates or charges of motor carriers may be made to the Interstate Commerce Commission by individuals, regulatory boards, organizations or governmental bodies. The Commission has authority to suspend for an initial period of 90 days and for an additional period of 180 days, motor freight rates either upon complaint or upon its own motion. Refunds or rebates by motor carriers to shippers are unlawful.

The Commission is directed to give due consideration, in the exercise of its power of prescribing just and reasonable rates for the transportation services of interstate motor common carriers, among other factors, to: (1) the inherent advantages of transportation by motor carriers; (2) the effect of the rates upon the movement of traffic by motor carriers; (3) the need of adequate and efficient motor carrier transportation service, in the public interest, at the lowest cost consistent with furnishing the service; and, (4) the need of motor carriers of revenues sufficient, under honest, economical and efficient management, to provide this service.

The elements which must be considered by the Commission in fixing the rates of interstate common carriers by motor are similar to the provisions of the "Rule of Rate Making" as amended in the Interstate Commerce Act, Part I, applicable to carriers subject to Part I, with the additional stipulation that in fixing motor rates, the Commission shall give due consideration to the inherent advantages of motor transportation. The intent of the Motor Carrier Act is to require the Commission to fix the rates of motor common carriers, insofar as possible, upon a basis which reflects the cost of the service and the advantage or value of motor transport service.

The precise factors to be considered in the determination of the reasonableness of the rates of motor carriers are not specified in detail in the Motor Carrier Act, but certain factors are negatively excluded from consideration as rate making factors. The Act forbids the Interstate Commerce Commission to take into consideration, or to allow as evidence of the value of the properties of the motor carriers, such items

as good will, earning power, or the certificates of public convenience and necessity under which the carriers operate.

In case motor carriers attempt to increase their rates, the burden of proof to establish the reasonableness of the rates and the necessity for the increase rests upon the carriers.

Contract Carrier Minimum Rates or Charges

It is unnecessary to discuss in detail the charges of contract motor carriers and their regulation because the principles involved in the construction and regulation of common and contract carrier rates are substantially similar, with several important exceptions. The Motor Carrier Act gives to the Interstate Commerce Commission power to fix the minimum charges of contract carriers, but not the maximum or minimum, or maximum and minimum charges as in the case of interstate motor common carriers. In other words, the power of the Commission is restricted to deciding the lowest figure at which motor contract carrier charges may be set, and not the actual prices, as in the case of common carriers by motor vehicle. The minimum charges of contract carriers may be suspended by the Commission pending a hearing to determine the lawfulness of the minimum charges, for an initial period of 90 days but not for longer than 180 days beyond the time when ordinarily the minimum charges of the contract carriers would have gone into effect. The suspension power, as in the case of the power of the Commission to suspend common carriers' rates, does not extend to the minimum charges initially fixed by the contract carriers under the Motor Carrier Act. Contract carriers are required to operate under bilateral contracts binding upon them and upon their patrons.

Rate Making Factors

The factors considered in making motor freight rates are not substantially different from those which must be given consideration in fixing the charges of any type of carrier for hire. The differences lie in the emphasis to be placed upon the factors.

The factors may be conveniently grouped into four controlling factors: (1) costs; (2) transportation characteristics of the commodities; (3) commercial characteristics of the goods, including competitive conditions; and (4) government regulation.

The cost factors, which in the absence of other influences would be

controlling, include rentals or carrying charges upon property and equipment, insurance, fees and licenses, taxes, solicitation expenses, managerial and supervisory expenses, advertising, depreciation through wear and tear and obsolescence, fuel, tires, lubricants, and wages of drivers, helpers and other employees.

The transportation characteristics of the goods include the density or the space occupied per unit of weight; the susceptibility of the goods to damage, pilferage, theft or spoilage; the liability in the case of delay; the risk of damage to carriers' property or equipment; type of container used; and special services required, such as refrigeration, special deliveries and specialized equipment.

The commercial characteristics include the intrinsic value of the goods; the value of the transportation service to the shippers; competition among motor carriers, between motor carriers and other types of carriers, and commercial competition among places of production, distribution and consumption.

The regulatory factors include the direct and indirect regulations of Federal, state and local governments which are applicable either to rate making or to motor transportation services in such ways as to constitute reflected influences upon rate making.

Motor Carrier Rate Making Organizations

Throughout the United States a number of motor carrier conferences have been organized by groups of motor carriers. These organizations are similar in many respects to the railroad freight traffic associations and to a lesser extent to steamship conferences. In some cases the large territorial motor carrier conferences such as the Middle Atlantic States Motor Carrier Conference, the Central Motor Freight Association, and the New England Motor Rate Bureau, and others, include in their respective memberships carriers operating in sections of the United States which correspond substantially to the major railroad freight association territories. In addition to these organizations there are many small motor carrier freight associations, conferences, or bureaus. There are also local cartage organizations which function in connection with local truckmen, and those which specialize in certain types of traffic, such as furniture-moving organizations.

A typical motor carrier freight rate organization has as its functions the publication of rates and charges, the publication of a classification,

the arbitration of controversies among member carriers, the interpretation of tariffs, and orders of state and Federal regulatory bodies affecting motor transportation, the conduct of cases and interpretation of the law affecting the member motor carriers, and the dissemination of information of interest and value to member carriers. In connection with rate making, the conferences usually have rate committees upon which are represented the carriers serving the routes or territories into which the conference territories are often subdivided. Rates proposed by carriers or shippers are considered by the representatives of the carriers in these committees. The rates so considered are referred for review to a general rate committee, and finally disposed of by a standing rate committee or a rate agent employed by the conference. The organizations formulate rate policy which in turn is applied to the fixing of individual rates by the managers and committees of the organizations.

The organizations are usually supported by dues and assessments paid by the member carriers. The officers are as a rule the officers or traffic employees of the member carriers, with the exception of the officers, agents or managers who are employees of the conferences or associations. The staffs of the organizations include a manager, an attorney or counsel, a tariff publishing agent, a rate expert, and forces of tariff compilers, rate clerks, clerks and stenographers.

Although many motor carriers are members of these conferences or groups the great majority of motor truck operators are not members of any rate making or tariff publication organizations. One of the difficulties in the stabilization of rates and charges of common and contract motor carriers in interstate and intrastate commerce is that of bringing together all carriers engaged in motor trucking services in any territory to effectuate plans looking toward stabilization. The Interstate Commerce Commission, the state regulatory commissions, motor carrier organizations and many individual carriers are working toward this ideal.

Motor Carrier Tariffs and Schedules of Charges

Common and contract motor carriers engaged in interstate commerce must publish, post in their places of business, and officially file with the appropriate Bureau of the Interstate Commerce Commission their actual tariffs of rates, if common carriers, and their schedules of minimum charges, if contract carriers. In intrastate commerce, state

laws contain similar provisions with respect to carriers engaged in intrastate commerce, requiring the filing of tariffs or schedules as prerequisites to operation.

Motor common carriers are required by the Motor Carrier Act to print and file with the Interstate Commerce Commission, in the form prescribed by the Commission's Tariff circulars, tariffs showing all the carriers rates or charges for all transportation or other services performed in connection with interstate or foreign commerce. The tariffs must show all interstate rates and charges including those applicable locally between all points served by each common carrier as well as those applicable jointly between points served by one carrier and those served by other carriers. Joint interstate rates made by motor carriers with railroad, express or water carriers over joint through routes must also be published, filed with the Commission and kept open to public inspection.

It is unlawful for any motor common carrier to charge any one either more or less than its published and filed rates.

The objective of tariff publication toward which these provisions of the Act are directed is that all motor carriers, as units in a transportation system serving the public, shall be operated by reliable and responsible business organizations whose charges for their services may be known, dependable, reasonable, and free from unjust discrimination.

The tariffs of the carriers must state the rates and charges in the terms of United States currency. In exercising its authority under this section of the Act, the Interstate Commerce Commission has issued tariff circulars containing regulations governing the construction and filing of the tariffs of motor freight carriers.

After they are filed with the Commission, the tariffs become effective only upon 30 days' notice unless shorter notice is granted by the Commission. The tariffs may not be changed, cancelled, or withdrawn except upon 30 days' notice, unless a shorter notice is permitted by the Commission. Each carrier must post in all of its offices or stations at which an exclusive agent is employed copies of all tariffs which apply from or to that particular station. In addition each carrier must keep on file at its principal office copies of all of its tariffs. The tariffs must be kept available for examination or inspection by the public at all reasonable times.

The publications containing the minimum rates and charges and

rules and regulations of contract carriers are known as "schedules," to distinguish these publications from the tariffs of common carriers which contain the actual rates or fares, charges, rules and regulations of common carriers.

The Motor Carrier Act requires that the schedules of contract carriers engaged in interstate or foreign commerce must be published, and filed with the Interstate Commerce Commission, and kept open for public inspection in the manner prescribed by the Commission. Substantially similar regulations are imposed by the law upon contract carriers as are imposed by the Act upon common carriers.

The Commission requires also that copies of all contracts to which contract carriers are parties must be filed with the Commission and that copies of the contracts must be made available for public inspection in the carriers' offices. When changes are made in the contracts, copies of the new contracts or memoranda of the substance of the contracts cancelling the old contracts or memoranda must be filed with the Commission. Changes in contracts which have the effect of reducing rates, fares, or charges already in effect and on file with the Commission may be made only upon 30 days' notice to the Commission, unless the Commission grants the carriers permission to make the changes upon less than statutory notice.

The Interstate Commerce Commission is given power to prescribe minimum charges for contract carriers after hearing upon complaint, or upon its own motion, if the Commission finds that the minimum rates or charges are in violation of the motor transportation regulation policy of Congress as declared in the Act.

The minimum charges, rules, regulations or practices fixed by the Commission must not give any advantage or preference to any contract carrier in competition with motor common carriers which the Commission finds to be incompatible with the public interest or the declared policy of Congress.

In fixing the minimum charges to be prescribed for publication by contract carriers, the Commission must give due consideration to the cost of the services rendered by the carriers, and the effect of the minimum charges or the rules, regulations or practices upon the movement of traffic by common carriers.

The Commission cannot fix or set the initial minimum charges of contract carriers, but may approve or disapprove the minimum charges

after they have been fixed by the carriers and filed with the Commission.

As in the case of the tariffs of common carriers, the Interstate Commerce Commission has the power, either upon complaint or upon its own motion, to suspend the schedules of minimum rates of contract carriers pending a hearing upon the lawfulness of the schedules.

The Collection of Charges and Regulation of Credit

Motor common carriers subject to the Motor Carrier Act under ordinary circumstances may not deliver or relinquish possession of the goods transported by them in interstate or foreign commerce until the lawful tariff rates and charges upon the goods shall have been paid. An exception to this general rule is made to permit the carriers to make deliveries in advance of payment under regulations prescribed from time to time by the Interstate Commerce Commission to govern the settlement of the charges periodically and to prevent unjust discrimination or undue preference or prejudice. An exception is made to the application of these regulations also in the case of shipments transported for governmental agencies.

Shippers or consignees, generally speaking, are legally liable to the motor carriers for the freight charges due upon the shipments. Whether the shipper or the consignee of a particular shipment is the party to whom the carrier must look for the payment of the charges depends upon the terms of the transaction and the instructions given the carriers. Carriers by motor vehicle, like other carriers of goods, have a lien upon the goods and may retain possession until the lien is extinguished by the payment of the lawful charges. If the goods are allowed to pass out of possession of the carrier without the charges having been paid, the carrier has the right to proceed against the shipper or consignee for the charges, but subsequent shipments even those from the same shipper to the same consignee cannot be held by the carrier to enforce the payment of charges upon prior shipments.

The Interstate Commerce Commission by orders issued from time to time has fixed the maximum period of extension of credit to shippers or consignees for the payment of transportation charges. The present regulations require billing within seven days of receipt of the goods and payment to be made within seven days after the bills have been rendered. Motor carriers may not discriminate unfairly among

their patrons in extending or denying credit to all who have similar credit standing or who offer surety to guarantee the payment of the charges within the credit period. Fines are provided by law for violations of the provisions of the Motor Carrier Act and the regulations of the commission governing the collection of charges and credit arrangements.

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CHAPTER 49

Local and State Regulation of Motor and Highway Transportation

Local governments in the United States, including cities, boroughs, towns, villages, townships and counties, exercise varying degrees of regulation over highways and motor transportation within their respective jurisdictions. These regulatory functions include the construction and maintenance of highways; the regulation of the use of local streets and roads; and the regulation, under certain circumstances, of motor transportation services for hire.

The local units of government derive their authority and jurisdiction over highway and motor transportation in some instances as a result of the home-rule provisions of local governmental charters granted by the states which confer upon local governmental units of designated classes certain powers which otherwise would be exercised by the states, including the regulation of certain aspects of motor and highway transportation within their geographical boundaries. In other cases, the local units of government have received authority to regulate from the power specifically granted them by the state legislatures.

The cities in exercising these powers, however derived, usually do so through ordinances of councils which are enforced by local police departments, or other administrative agencies charged with the responsibility. In some cities part of the work of the administration is delegated to county, park, or boulevard commissions or departments which have their own regulations and enforcing agencies.

Local Highway Construction and Maintenance

The local units of government have jurisdiction over and responsibility for approximately 2,500,000 miles of highways and streets, or about 82% of the total mileage of 3,068,921 miles of roads in the United States. Of the balance 533,144 miles are state highways and 19,137 miles are connecting streets forming parts of the arterial routes

through cities.[1] In the 93 cities of the United States with population exceeding 100,000 persons, a survey by the Automobile Manufacturers' Association in 1937 indicates that the paved street mileage is 42,504 miles; the unpaved streets, 23,393 miles, a total of 65,897 miles.

About 31% of the total highway construction and maintenance expenditures in 1936 were for local and county roads, a total of over $424,000,000. This sum was divided, 59% for maintenance, 21% for new construction, 11.8% for interest on bonds, and 8.2% for miscellaneous highway expenditures. An income of $488,000,000 spent in 1936 mainly on county and local highways was derived from motor vehicle licenses, gasoline taxes and motor carrier taxes—48.2%; local taxes, appropriations and motor carrier taxes—40.7%; bonds, 6.3%; and Federal aid, 4.8%.[2]

The functions of local and county governments in connection with highway construction and maintenance includes: the financing, planning, and supervising of the construction of new streets and roadways; and the maintenance and repair of existing highways or streets, and general local regulations affecting all types of motor transportation, private as well as public operators. Typical regulations of local governments affecting highway or street construction and maintenance include the authorization, issuance, and marketing of new bond issues; the amortization of local street and road bond issues; the planning of new streets and local roads; the opening and paving of streets and roads; the determination of paving standards and specifications; the letting of contracts for construction, or the actual construction by departments of the local governments; the supervision of local streets and highway construction; the formulation of standards of maintenance; the letting of contracts for maintenance work; the supervision of highway construction and maintenance work; and the taxing of property and persons to defray expenses of street construction and maintenance.

In many cases a large portion of the expenditures upon local streets and roads is made from tax revenues collected by the states. In recent years large sums spent upon local and county road projects have been contributed in part by the Federal Government in the form of unem-

[1] United States Department of Agriculture, Bureau of Public Roads, data as of December 31, 1936.

[2] Walker, John E., Highway Tax Costs, National Highway Users Conference, Washington (1938 Edition).

ployment relief projects. The states and the local governments have participated in these projects.

The construction work and maintenance of local roads and streets is carried on by municipal highway departments, county commissioners, or other local agencies.

Regulation of the Use of Streets and Local Roads

Each political authority, municipality, incorporated borough or town, township, and county, has local police powers which it may exercise in the regulation of vehicles and traffic to protect the highways against improper use, to facilitate traffic, and to minimize accidents to pedestrians, travelers, and property. The regulations governing the use of streets and roads cover numerous details and vary more or less from community to community. They apply to automobiles as well as to other vehicles, and have necessarily been made more comprehensive and stringent in recent years because of the high speed of motor cars and the ever-growing density of traffic.

Restrictions are placed on the use of public and private vehicles on roads and streets in the interest of safety, quiet, or faster movement of traffic. Typical regulations of this sort are: traffic control through systems of light coordination, hand semaphores, or police control; speed restrictions and regulations; parking regulations; restrictions on the use of streets, such as, one-way streets, prohibition of left-hand turns, boulevard traffic, and quiet zones; prohibition of unnecessary or excessive use of horns; restrictions on size and weight of vehicles using certain municipal streets or bridges (usually based on dimensions and weights of trucks or on the weights per unit of tire surface); restrictions on maximum loads of vehicles; and general police regulations governing the use of streets.

The courts have held that local ordinances regulating the use of the highways, if not in conflict with the constructions of the Federal or state governments, and, if a reasonable exercise of local police power, are constitutionally valid.[3] There is evidence of a trend in the direction of greater uniformity in local regulations governing the use of highways and streets, but progress that has been made as a result of the cooperation of various associations of municipal authorities, insurance underwriters, and motor transportation companies has been slow.

[3] See among other decisions 92 W. Va. 611; 258 Ill. 409; 108 Ohio St. 343.

Local Regulation of For-Hire Motor Transportation

Local governmental agencies share with the Federal and state governments some of the responsibility for regulating motor transportation within their respective jurisdictions. In some states the local governments exercise rather broad regulatory powers over motor carrier transportation conducted within and through the communities. The trend, however, is toward state-wide regulation of the operation of motor carrier businesses. This has the effect of limiting local regulatory authority to certain aspects of motor carrier regulation. Within these limits, however, there are many important ways in which the local operations of for-hire motor carriers are regulated by local governments.

In some local jurisdictions special local registration and fees therefor are required of all motor vehicles used in the transportation of passengers within the communities and between the communities and points outside the local government's jurisdiction. Common and contract motor carriers of freight and passengers are required in some localities to have special registration with the local departments of public safety or police departments before they are permitted to enter or leave the communities or operate in them. As prerequisite to such registration the motor carriers are required to submit proof that they have complied fully with the regulations of the state public utility regulatory commissions or with the Interstate Commerce Commission. Identification numbers are assigned to the registered carriers so that they may be recognized and unregistered carriers' vehicles are barred from operation.

The location of taxicab stands, the maximum number of taxicabs permitted to use such stands at a given time, the prohibition or restriction of cruising about the streets in the solicitation of taxicab traffic, and establishment of zone fares or requirement that accurate taximeters be installed in the cabs form another group of local regulations.

In some cities the routes to be traversed by motor busses over city streets, the streets that must be used, regulations prohibiting the standing of persons in motor busses or limitations upon the number of standees in busses, the designation of bus stops and terminals, the maximum time interval between busses, and regulations governing the places and manner in which bus passengers may be received and discharged from busses constitute a group of regulations of another type.

In many communities motor busses or motor trucks or both are forbidden to use certain streets, or cross certain bridges, either because of the sizes and weights of the vehicles or because of the desire to keep certain streets free of heavy-vehicular traffic. In some cases special licenses and fees are required of garages, gasoline service stations, and other businesses related to motor and highway transportation, or which use motor vehicles in the performance of their business activities. A few cities and counties impose local gasoline taxes in addition to the Federal and state gas tax levies.

Local ordinances sometimes require motor carriers to file bonds or other surety to guarantee payment of judgments against the carriers or to assure observance of local regulations and orders affecting the carriers. In some local communities the location of motor freight terminals and warehouses, the parking of freight vehicles on streets, and the sizes and weights of vehicles used in local common carrier freight services are subjects of regulation.

Some cities require motor bus companies engaged in interstate or intrastate operations beyond the cities, but which use city streets, to obtain franchises from the cities in addition to other state or Federal authorization. A few communities require that all motor transportation companies conducted under names other than the full correct names of individual proprietors be registered under their fictitious or assumed names with the officers of the courts, so that the identity of the persons that may be held legally responsible for the conduct of the business may be known.

In a relatively small number of local jurisdictions the rates and fares of common carrier motor transportation companies are subject to regulation by the local governmental agencies. This jurisdiction may be exclusive, or exercised concurrently and supplementary to state regulatory authority.

Broad powers of regulation of the methods of conducting public motor carrier services in the interest of public safety, the reasonable use of city streets and local roads as places of conducting motor carrier businesses, and the assurance of financial responsibility for the consequences of accidents or other liability incurred in the conduct of the businesses have been upheld by state and Federal courts.[4]

[4] For typical decisions of this type see: 221 U.S. 467; 153 N.E. 504; 264 U.S. 140; 284 U.S. 335; 18 Fed. (2d) 991; etc.

State Regulation of Highway and Motor Transportation

The regulation of motor vehicles by the states falls into three categories of regulation: first, the construction and administration of highways; second, the regulation of motor vehicles and operators of all types, including the regulations governing the use of the highways; and, third, the regulation of vehicles which are employed in public services for hire. The classifications may be extended further so as to differentiate between the regulation of freight and passenger motor vehicles. The construction and maintenance of highways and the expenditure of funds raised by the states for these purposes have already been discussed in an earlier chapter. The state regulations applying to vehicles used in all transportation service and those which apply to motor carriers engaged in the service of the public are discussed separately in this chapter.

The Regulation of all Motor Vehicles

The regulations of state governments applying to all motor vehicles apply not only to private automobiles and privately-owned and operated motor trucks but as a rule also to vehicles used in for-hire services, although in case of the latter type of vehicles the standards of regulation are higher than in the case of private vehicles. In addition to the general motor vehicle regulations special regulations are imposed upon vehicles used in transportation for-hire in virtually all of the states of the United States. The general regulations include (1) the issuance of motor vehicle licenses; (2) the licensure of motor vehicle drivers; (3) the limitation of sizes and weights; (4) motor vehicle speed limits; (5) the issuance of title certificates; (6) miscellaneous safety regulations including vehicle inspection and highway traffic control; (7) compulsory assumption of liability of motor vehicle owners and operators; and (8) motor vehicle and operator taxation.

Motor Vehicle Licenses

The laws of every state in the United States require that motor vehicles, whether operated for hire or otherwise, be licensed. In all instances, licenses for the vehicles must be obtained by the owners annually. Differences in state laws are confined to differences in the requirements respecting the renewal of licenses at different times of the year. The usual time for the issuance of licenses in the past has been

January first and in many states this is still the date. The laws of several states, however, fix other dates as the annual license renewal dates, and there is a trend toward dates other than January first in order to avoid the loss of gasoline tax revenue caused by failure to register on January first, a time when many family exchequers are low. The state motor vehicle registration fees have produced between $228,000,000 and nearly $400,000,000 annually in the past fifteen years.

Uniformity in state's requirements that licenses be obtained is not, however, extended to uniformity in the recognition of the licenses issued in one state by other states. In this respect the practices vary widely. Some states accord complete reciprocity to motor vehicles registered in other states. Foreign licenses, the licenses issued by other states of the United States, are recognized as valid for the same period of time as the licenses of the state granting the recognition are recognized in the foreign state upon what is known as a reciprocity basis. Where two states are both operating under the full reciprocity agreement, licenses of one state are valid in the other state for the same length of time that they would be valid in their home state. In other states the provisions of the laws vary with regard to the recognition of foreign licenses. Some hold them valid only for a short period of time, while others grant more extended time limits. Reasonable regulations by states providing for the license of the vehicles of residents and non-residents of the states have been upheld generally by the courts as valid exercises of the police power of the states.[5] Ports of entry or other means of checking the entry of motor trucks and caravans of new automobiles have been established in a few states in order to regulate the use of the roads and to collect taxes.

Motor Vehicle Drivers' Licenses

Another type of license required in most states is the motor vehicle driver's license. In all but a comparatively few states, drivers' licenses are required for private drivers as well as for drivers for hire. The classification of "drivers for hire" includes all who act as the paid chauffeurs of passenger cars or motor trucks. A considerable number of state laws require that licenses be obtained by drivers as a prerequisite for operating any motor vehicle. The remaining states do not require licenses for this type of driver.

[5] See Hendrick v. Maryland, 225 U.S. 610; and Kane v. New Jersey, 242 U.S. 160.

Operator and chauffeur permits or licenses produced over $33,000,000 of revenue to the states in 1937. A number of states require candidates for driver's license to pass an examination of their fitness to operate motor vehicles before the licenses are granted. In some states, nonresidents are required to be registered and to appoint a state official as the statutory agent of the licensee upon whom service may be made in cases of violations of the law or liability suits.[6] There is need for uniform drivers' laws in all states.

Vehicle Size and Weight Limitations

Limitations restricting the sizes and weights of motor vehicles and trailers using the highways are common subjects of regulation found in virtually all states. Most of the states regulate the size of vehicles and all but a few regulate weight. An examination of the provisions of state laws shows that of the states regulating size of vehicles, all regulate the width, and a number the height and the length of the vehicles. The regulations, however, are not uniform among the regulating states. It sometimes happens that vehicles the size and weight of which are legal in one state are not within the lawful size or weight limits in neighboring states. The variations in state laws governing size and weight act as a real impediment to interstate commerce. The laws should be unified as speedily as possible to eliminate any obstacles in the way of free development of motor transportation among the states. The Bureau of Motor Carriers of the Interstate Commerce Commission has made exhaustive studies of motor vehicle sizes and weights which will doubtless contribute to the movement toward uniformity in size and weight regulations.

Special hardships result from varying weight limitations of state motor vehicle laws. An examination of the various state laws shows extreme variations in the regulations applicable to weight.

Some states limit the combinations of equipment which may be used with any given motor unit at one time. These regulations are often modified to permit special or emergency movements which exceed the size and weight limits, especially in cases where a branch of government requests the privilege or where the articles can be moved in no other way than by highway. Extraordinary care must be exercised in such cases to protect the roads from damages.

The American Association of State Highway Officials recommends the

[6] Hess v. Pawloski, 274 U.S. 352.

following maximum size and weight limits, with the proviso that special permits be issued for occasional movements requiring vehicles of sizes and weights exceeding the maximum dimensions or weight limits recommended. The Association recommends overall width of motor vehicles of 8 feet; overall height 12 feet, 6 inches; overall length of tractors and trailers or semi-trailers of 45 feet; overall length of single motor vehicle units of 35 feet; maximum axle weight of 16,000 pounds per axle on high pressure pneumatic tires; and maximum wheel loads of 8,000 pounds per wheel on high pressure pneumatic tires; and 9,000 per wheel on low pressure pneumatics. An absolute maximum weight based upon a formula concerning the gross weight with load and the distance between the first and last axles in the motor vehicle or series of vehicles is recommended.

These recommendations are made in order to establish one of the fundamental prerequisites of highway design, to promote efficiency in the interstate operation of motor vehicles, to secure safety in highway operation, to remove from the highways undesirable equipment and operations, and to stabilize on a definite basis the many relationships between the highway and motor vehicle.

The courts have held valid reasonable regulations governing the size and weight of motor vehicles as applied to the vehicles of resident and non-resident owners and to those using the states' highways in intrastate and interstate transportation as reasonable exercise of the states' police power.[7]

Motor Vehicle Speed Regulations

Regulations limiting the speed at which motor vehicles may be operated are found in almost every state. There is a lack of uniformity in the laws of the different states in this respect. In a few states no maximum speed limit is set by the state, but the speed at which motor vehicles are operated may not be greater than is reasonable under the conditions existing at the point of operation. The cities and towns of one state may regulate speed within the local districts. Other state laws require that speed must be reasonable and proper at all times but the regulation is qualified to the extent that speeds in excess of different designated speeds in the open country, on city streets and on city crossings and corners are considered presumptive evidence of unreasonableness.

[7] Morris v. Duby, 274 U.S. 135.

In practically all of the states lower speed limits are set when motor vehicles pass through cities, towns, or other thickly populated districts. These limits are often set at twenty miles per hour, although there are some instances where ten and fifteen mile limits are specified and still slower speeds at street crossings and corners.

As a rule lower maximum speed restrictions are placed on trucks and heavy passenger vehicles. These maximum speed limits vary widely as between states and also as between classes of trucks and other heavy motor vehicles in the same state. Very elaborate speed limits based on gross weights and types of tires are applied in many states.

The American Association of State Highway Officials recommends minimum speed not so slow as to impede or block normal and reasonable flow of traffic except where necessary for safety. It recommends a maximum speed for busses or trucks at not more than 45 miles per hour, and for passenger automobile maximum speeds "consistent with safety and proper use of the roads." A maximum speed of 10 miles per hour is recommended for solid tire vehicles.

There is a trend toward more rigid enforcement of speed limitation with revocation of operating permits for violation. Another phase of speed regulation is the suggestion that a lower maximum speed limit be set for drivers after dark in an effort to reduce the large number of night highway accidents.

Regulation of Title

In twenty-three states the owner's title to a motor vehicle must be registered with the state in order to establish proof of ownership. Under this plan, a deed of title is issued by the state to each owner of a motor vehicle for each vehicle owned. This title instrument is registered with the state in the same way as deeds to real property are registered with the county authorities. The title papers establishing the ownership of motor vehicles must be transferred in the same way as a deed to land when a transfer is made in the ownership of the vehicle from one person to another. This form of regulation benefits motor vehicle owners greatly as it aids in tracing stolen cars and tends to deter motor thieves, to some extent at least, by making the disposal of stolen cars more difficult than would be the case if evidences of title were not required. It also serves as a source of state motor vehicle revenue. In 1937 the revenue from certificates of title was $9,458,000.

Miscellaneous Safety Regulations

Other regulations by the states are in the nature of safety provisions. The laws include regulations applying to right of way requirements; stopping or slowing down of vehicles at railroad crossings; stop-street regulations; types of headlight lens to be used; candle-power of headlight bulbs and tail light bulbs; the approved methods of mounting license tags; traffic control light regulations; and similar detailed regulations. The direction of traffic streams requires that vehicles keep to the right of the road and pass on the left. This requirement as well as provisions prohibiting the passage of vehicles on hills when both are going in the same direction; prohibiting the passage of a vehicle going in the same direction when a clear view of the road is not available; and providing that the motor or other vehicle on the right of the driver has the right of way at crossings, are contained in the laws of many states. Regulations of different kinds requiring care and caution in driving and providing detailed restrictions and prohibitions are found in all state codes.

Compulsory Assumption of Liability

In several states, laws of different types require that the owners of motor vehicles or of commercial motor vehicles establish their financial ability to pay judgments against them in motor vehicle accident cases by posting cash, securities or bond or policy of personal liability and property damage insurance.

A few states require non-resident motor vehicle operators to appoint residents of the states as agents. In Delaware, non-resident motor vehicle operators who are involved in highway accidents are required to post bond for twice the amount of estimated damage before they are permitted to remove their vehicles from the places where the accidents have occurred. Some states require a bond or insurance to be posted after the first accident involving property damage over a certain amount or after judgment is obtained against motor vehicle owners.

Motor Vehicle Taxation

The taxation of motor vehicles is important not only as a means of financing highway construction and maintenance but also as a means of regulation of highway transportation. Taxation of private motor vehicles

by the states includes the fees charged for the granting of licenses above mentioned, gasoline taxes, and personal property taxes upon motor vehicles. Taxation in the form of license fees varies widely among the several states. In some, the fees are relatively small, while in others motor vehicular taxes of various sorts are relatively large. In the case of passenger vehicles these fees are levied upon a number of bases, including: the rated horsepower of the vehicles; weight, gross or net; value; type of vehicle; privilege of operation; and gasoline consumed; or a combination of several taxes. The bases for the tax rating of trucks include the gross weight of the vehicles; net carrying capacity; the weight on the axles; horsepower; type of tires; width of tire tread; mileage and other bases; as well as gasoline consumed. In some instances additional taxes are levied according to the mileage operated. Complicated scales of determination of the fees for trucks are sometimes worked out, based upon these factors and the engine horse-power rating of the vehicles.

Gasoline or motor fuel taxes are levied in every state in the United States and in the District of Columbia. The tax rates levied in 1938 ranged between two and seven cents per gallon. In addition to the state gasoline taxes, the Federal government levies a gas tax, and some counties and municipalities also levy gasoline taxes. Gasoline taxes in 1936, represented 28.1% of the retail price of gasoline. Production and refining costs represented 28.2%, and transportation and marketing costs represented approximately 43.7% of the price.

All taxes upon motor vehicle owners and operators including gasoline or motor fuel taxes, registration fees, miscellaneous state motor vehicle taxes, Federal excise taxes, and personal property taxes aggregated $1,584,990,000. The average tax paid per motor vehicle was $48.15 in 1936. It is estimated that state motor vehicle or highway user taxes amounted to 40.9% of state tax revenues from all sources in 1937.

State Regulation of Motor Vehicles Used in "For-Hire" Service

All the regulations imposed by the states on private or common carrier motor vehicles apply with equal force to vehicles operated in the service of the general public, and in many cases additional regulations are imposed upon "for-hire" operators. These regulations of carrier motor vehicles discussed here are additional restrictions and regulations

imposed upon motor vehicles and motor vehicle operators in for-hire services. These additional regulations consist in part of placing the common and contract carriers under the control of the state railroad, the public service or the public utility commissions or of some other administration body.

Common Carrier Motor Taxes

All but a few states place special licenses or tax fees upon common and contract carrier motor vehicle operators. Several states levy special taxes in lieu of the regular automotive license fees. The remaining states levy fees of one kind or another upon common carrier motor vehicles in addition to the ordinary motor vehicle licenses.

These special levies take the form of taxes based upon the seating capacity of the vehicles; operators' permits; ton-mileage operated; or the levies may be on mileage; or may be occupational or privilege taxes. Other taxes are based on gross weight or length of vehicles or other unit of size.

In 1937 special motor carrier taxes of various sorts are estimated to have exceeded $16,000,000 in addition to the regular taxes paid by motor carriers in the form of gasoline taxes, motor vehicle license fees, drivers' permits, and other taxes applicable to motor vehicle owners and highway users generally.

Regulation of "For-Hire" Carriers by State Commissions

In all but a few states the authority to regulate motor carriers is vested in state commissions or other administrative bodies. Pennsylvania was one of the first granting such powers to the Public Service Commission under the law creating the Commission which went into effect in 1914. The District of Columbia has administered the affairs of motor carriers for hire since 1913. Between these dates and the present, state after state has granted authority to existing public service, public utility, railroad or other commissions or has created special administrative bodies to regulate the operation of motor vehicles for hire within the states.

Most of the states exercising jurisdiction over common carriers by motor, vest the state commissions with authority to regulate both freight and passenger carriers. The commissions of a few states exercise their rights only over passenger motor carriers and several state commissions

possess only the power to regulate motor carriers of freight. The commissions of half of the states control the operations of motor common carriers.

In nearly all of the states a prerequisite to the operation of motor vehicles in common carrier service is the granting by the regulatory commission of a certificate of public convenience and necessity. This prerequisite is supplemented by the requirement in these states of the posting with the commission or some other state authority of an indemnity bond to protect the public in case of damage claims against the operators of the motor vehicles in public service. Public liability and property damage insurance may in all instances be substituted for this bond. The permission of the municipalities through which the proposed motor lines are to be operated is also necessary to the obtaining of a certificate of public convenience and necessity, in a few states. It is an interesting and significant fact that most of the states requiring the issuance of a certificate as a prerequisite to operation also require that an indemnity bond be filed by the operator. There are several states which do not require the certificate, but do require the bond.

The general nature of the powers vested in the regulatory commissions of the different states in connection with intrastate operation of motor vehicles further include the requirement of certificates of public convenience and necessity of common carriers. Contract carriers are required in an increasing number of states to obtain permits. Licenses are required to be granted to brokers in several states. The hours of service and working conditions of employees of for-hire carriers are regulated in some states. The rates, fares and charges of common carriers and the minimum rates, fares and charges and the contracts of contract carriers are subject to state regulation. For-hire carriers are required by a number of states to maintain uniform accounts, reports and records. Carriers for hire are required by many states to maintain adequate public liability, property damage, cargo, and liability insurance. In some states carriers engaged in for-hire services are required to post bonds to guarantee observance of the state motor carrier regulatory acts and the orders and regulations of the state regulatory commissions. The securities and the assumption of financial obligations of for-hire carriers are regulated in some states. In some of the states where these matters are regulated, the jurisdiction of the commission is restricted to common

carrier operators. The purchase, sale, lease, merger or consolidation of motor carriers, or of motor common carriers only, are regulated in some states.

In virtually all states where regulation of for-hire carriers is undertaken, the schedules, routes, territories served, and types of commodities transported are subject to regulation. The publication, posting for public inspection and filing with the regulatory commissions of the tariffs of the common carriers and the schedules of charges and contracts of contract carriers are usually required. Carriers are usually required to establish and maintain reasonable classification of freight transported. Special speed regulations, the compulsory stopping of busses at railroad crossings and special safety appliances are typical state regulations applying to for-hire motor carriers. The facilities maintained for the service of the public, schedules of operation, and other standards of service are sometimes the subject of state regulation.

Generally, the number of states regulating common carriers of passengers is larger than the number of states regulating common carriers of freight, although the number of states in which common carriers of property or freight are regulated is rapidly increasing. There are, moreover, additional states in which carriers which operate in regular route services are regulated while those which are engaged in irregular operation are not regulated at all or regulated much less strictly. There is also a trend in the direction of the regulation of motor carriers as completely and comprehensively as other transportation public utilities are regulated. Involved in all of these trends in regulation is the growing application of the principles that the services for hire of motor carriers of passengers and property are public utility services and as such they should be and are regulated in intrastate commerce.

Typical State Public Utility Commission Regulations

The rules and procedure of a representative state may be considered in discussing the rules governing the regulation of motor vehicles operated in services for which the operators receive compensation. The jurisdiction of this state commission is sufficiently broad to embrace all types of motor carrier services in typical states. This state's public service commission recognizes several types of motor vehicle common carrier operations, including operation as a common carrier of passengers

between fixed termini over fixed routes; operation as a common carrier of passengers in irregular services upon call and demand such as bus services on irregular routes and taxicab services; operation as a common carrier of freight between fixed termini over regular routes; and operation as a common carrier of freight in irregular services from fixed centers of operation or in territories generally.

Various types of contract carrier operations, and, as in some other states, brokers are made subject to regulation.

The form of application for each type of certificate and permit is virtually the same with the exception of slight differences in the phraseology of the petitions. The applicants must establish the necessity or demand for the type of service sought to be operated.

The state commission's jurisdiction extends to motor vehicle operations into, out of and within municipalities; and embraces the granting and refusing of certificates of public convenience and necessity; the regulation of fares, rates, schedules, equipment and services; the examination of accounts and records; the requirement of reports; and the prescribing of uniform accounts, statistics and records.

Applications for certificates of public convenience and necessity must show complete data with respect to the nature and scope of the proposed services and the identity of the persons proposing to perform the service including:

1. The name and address of the petitioner and of the attorney of the petitioner
2. The powers, rights, franchises and privileges of the petitioner under ordinances, municipal contracts or other authorization
3. The style, manufacturer's number, capacity, and state motor vehicle license of each motor owned by the petitioner which he wishes to operate in the public service
4. A complete statement of the petitioner's financial ability to furnish adequate public service
5. The nature and character of the service to be rendered
6. The persons, partnership or corporations furnishing or having the right to furnish similar service, including steam railroads, electric railways, express companies and other motor operators
7. A statement that the service proposed to be rendered is necessary and proper for the service, accommodation and convenience of the public
8. A statement that the petitioner proposes to begin furnishing service immediately upon the receipt of a certificate of public convenience and necessity.

Applications are executed before notaries public and copies are filed with the public utility commission to be heard at public hearings scheduled by the Commission. A nominal filing fee must accompany the applications.

Applications of substantially similar form are required to be made by applicants seeking the privilege of engaging in service as a contract carrier in all states where contract carriers are regulated. In some states, if the motor vehicle operators serve less than the number of persons stipulated in the state statutes concerning contract carriers, the operators are not subject to legislation. The recent trend in regulation is toward the regulation of common and contract carriers and brokers in intrastate as well as in interstate commerce.

Typical Regulations Governing Certificated Carriers

The holders of certificates in intrastate commerce are required, under the provisions of typical laws, to observe the following regulations provided for in the law or by administrative orders of the state commissions. The certificates of public convenience and necessity of common carriers and permits of contract carriers are limited to the routes or territories for which the certificates or permits are granted. The number of vehicles that may be operated by certificate or permit holders is specified in the certificates or permits, and, if the carriers wish to operate additional equipment, permission must be obtained from the public service commission to do so. The certificates and permits are not transferable excepting under the conditions prescribed by the public service commission and with the approval of it.

The vehicles authorized to be used in common or contract carrier services must show the name of the certificate holder and his certificate or permit number. All vehicles operated by certificated or permitted carriers must be licensed by the State Highway Department and the drivers must be similarly licensed. The holders of certificates or permits are required to file the numbers of the license tags of the vehicles with the public service commission immediately upon receipt of the license from the state highway department.

The vehicles operated by certificated or permitted bus transportation companies often are not permitted to carry a greater number of passengers than the number specified in the certificate or permit.

The certificates and permits are usually issued for a limited period

of time, usually for not more than two years, and at the expiration of that period applications must be made for renewal of the permits or certificates. In some states, if the operators have had the certificates or permits renewed several times, subsequent renewals are made for longer periods. The holders of certificates or permits are required to give to the businesses conducted under these authorizations the personal attention and supervision required to insure that all rules and regulations of the public service commission are complied with. In some states the employment or retention of incompetent or unfit persons to operate vehicles is deemed sufficient grounds for the revocation of certificates or permits or for the refusal to grant renewals. Applicants for the privilege of conducting common or contract carrier services are usually required to demonstrate their financial responsibility and to maintain adequate liability and indemnity insurance coverage. The amount of insurance required is fixed either by the state statutes or determined by the public service commission.

All accidents happening to the vehicles of certificate or permit holders which result in injury to persons or damage to property are required to be reported promptly to the public service commission.

Taxicab operators are usually required to have their vehicles equipped with taximeters in plain sight of the passengers and to post a schedule of rates in a conspicuous position on the inside of the body of each taxicab. Similar regulations with respect to the conspicuous posting of a schedule of rates are found in connection with the requirements pertaining to the operators of motor busses, "jitneys," and automobiles used in public service.

The public service commissions usually reserve the right to cancel or revoke certificates or permits at any time for violation of the law or of the administrative rulings, or for failure to operate vehicles according to law.

An innovation has been introduced in public utility and motor carrier regulation in the past few years in requiring that the utilities bear pro rata the expenses of regulation. The expenses of maintaining the public utility commissions are assessed against the carriers in proportion to their gross operating revenues.

The constitutionality of reasonable and comprehensive regulation of motor carriers who use the highways as places of conducting business in intrastate commerce as contract or common carriers has been upheld

by decisions of state and Federal courts.[8] Contract carriers however may not be converted into common carriers by mere legislative fiat.[9] Common and contract carriers may not be regulated in the same manner as though they were the same, although both may be regulated comprehensively and in substantially similar fashion if the distinctive differences are recognized and appropriately regulated.[10] The status of a motor carrier as a common or contract carrier, or as an agent or broker, is determined not by the provisions or definitions of state laws nor by the orders and regulations of state regulatory commissions or departments, but by the actual manner in which the business is conducted and the ways in which patrons are served.

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[8] Frost v. R. R. Commission of California, 271 U.S. 583; Sproles v. Binford, et al., 286 U.S. 581; Stephenson v. Binford, et al., 287 U.S. 251.

[9] P. U. C. Michigan v. Duke, 266 U.S. 570; Frost v. R. R. Commission of California, 271 U.S. 583.

[10] Smith v. Cahoon, 283 U.S. 553; Stephenson v. Binford, et al., 287 U.S. 251.

CHAPTER 50

Federal Regulation of Highway and Motor Transportation

The Federal Government did not undertake the regulation of interstate transportation by motor vehicles until 1935, although numerous bills proposing the regulation by Congress of motor passenger carriers or both passenger and freight carriers were introduced in Congress between 1920 and 1935. None of these bills became law. Strong support was more than overcome by determined opposition in Congress.

Federal regulation of motor and highway transportation is broader than the regulation of motor carriers, important as is this phase of national control. The regulation of motor and highway transportation includes: (1) the development and aid in the construction of highways for the promotion of interstate and foreign commerce, for the development of the postal service, and for national defense; (2) the formulation and enforcement of the taxation program necessary to support the construction of national highway systems; (3) the regulation of the use of the highways in interstate commerce by all vehicles; and (4) the regulation of those who use the highways in the conduct of business enterprises as common or contract carriers or as transportation brokers.

The first two phases of national highway policy have been discussed in connection with the development of the highway system; the regulation of the use of the highways and the regulation of carriers and brokers will be discussed in the present chapter. Federal regulation of motor transportation did not burst upon motor transportation unexpectedly. The Federal Motor Carrier Act of 1935 was preceded by a number of years in which regulation was discussed pro and con within the industry, in other transportation industries affected by the motor, in hearings before committees of the United States Senate and House of Representatives, among the users of motor transportation, and before Federal regulatory or administrative bodies, including the Interstate Commerce Commission and the Federal Coordinator of Transportation.

Some of the principal reasons for Federal regulation of motor transportation are indicated by the following conditions. Competition among motor carriers was intense and often destructive. The bitter and often ruinous competition between common and contract motor carriers jeopardized the whole transport industry. Unjust discrimination and unfair preference were sometimes shown by motor carriers to certain shippers and consignees. Excessive competition between motor carriers and other carriers, including competition between the unregulated motor carriers and regulated carriers such as railroads, was manifestly unfair to the competitive instrumentalities of transportation. Unregulated competition had unfavorable effects upon the marketing of products such as agricultural products marketed through channels where the volume of the commodities needs to be known in order to stabilize prices in the market centers. The diversion of traffic from railroads and other regulated carriers, particularly in cases where the diversion of traffic was accomplished in whole or in part through the cutting of rates, was particularly disastrous to all types of carriers. The impaired financial condition of many motor carriers was due to insufficient revenues resulting from depressed rates. Shippers and consignees were unable to sell and buy goods with knowledge of what rates they would be obliged to pay or were paying. The unfair and demoralizing competition between irresponsible motor carriers and the better organized and responsible motor truck operators placed an unfair burden upon reputable industries.

Unfair influence was exerted by certain shippers and consignees upon motor carriers to force unreasonably low rates. The competitive struggle among motor carriers, other carriers, shippers and consignees for competitive advantages has an adverse effect upon the public interest in efficient and adequate transportation services at fair rates. Unfair advantage was sometimes taken by certain types of motor transportation brokers of certain motor carriers, particularly small operators. The use of the public highways as a place of conducting transportation services for hire is a public matter, a business affected with a public interest, recognized by the Federal and state courts, by legislative statutes and decisions of regulatory bodies of the states, and by students of national transportation policy.

The regulation of competition, when it becomes excessive and destructive to the participants and injurious to the public, is also a matter of

Federal concern. In an important Federal Court decision on this point the court held that competition, like monopoly, may be restrained by legislation to safeguard the public welfare, the test in each instance being the public good.[1]

The constitutional bases for Federal regulation of motor and highway transportation are found in the commerce and the post office and post roads paragraphs of Section VIII, and in the national defense powers found in this and other sections of the Constitution.

Federal Policy of Federal Regulation

One of the many distinctive features of the Motor Carrier Act is the declaration of the policy of Congress. The policy of Congress is declared to be the regulation of motor transportation, not in the interest of protecting any other type of carriers, but in such ways as to recognize and preserve the inherent advantages of motor transportation and to promote sound economic conditions within the industry and among carriers in the public interest by promoting efficient service, reasonable charges, improved relationships within the industry, the coordination of transportation, and the improved regulation of motor and other types of carriers. The declaration of policy specifically forbids unjust discrimination, undue preferences or advantages, and unfair or destructive competitive practices.

The whole fabric of interstate regulation of transportation, developed since the passage of the Act to Regulate Commerce of 1887 in connection with railroads and other carriers subject to the Interstate Commerce Act, is made applicable, insofar as these regulations are appropriate to motor transportation, by making the Interstate Commerce Act, as amended down to the present time, Part I of the Act; and the provisions of the Motor Carrier Act, 1935, specifically applicable to motor transportation, are made Part II of the Interstate Commerce Act.

The Act applies to all interstate or foreign transportation of persons or property by motor carriers. Interstate commerce includes transportation between places in one state and those in another or between places in the same state by a route that passes through another state, when the transportation is performed wholly by motor vehicles, or partly by motor vehicles and partly by railroad, express or water carriers. Foreign com-

[1] Peoples Transit Co. v. Henshaw, 20 Fed. (2d) 87; certiorari denied, 275 U.S. 553.

merce includes transportation between places in the United States and those in foreign countries, or between points in the United States when the movement is through foreign territory. The broad definitions of interstate and foreign commerce are susceptible of interpretation so as to include many movements of goods by motor vehicles entirely within a single state, city or metropolitan areas, when the freight hauled by the motor vehicles is to move or has moved in interstate or foreign commerce. The exact status of many of these movements must be determined by decisions of the courts in applying the law to particular cases, and by administrative rulings of the Interstate Commerce Commission made in the administration of the Act.

Types of Interstate Motor Carriers Subject to Federal Regulation

The Act recognizes four types of motor vehicle operators and business arrangements. The first type—common carriers—is defined as motor carriers which "undertake, directly or by lease or any other arrangement" to transport for the general public for hire over regular or irregular routes. This classification includes also the motor vehicle operations of railroads, steamship companies, express companies, and forwarding companies. Some railroad motor operations are subject to Part I of the Interstate Commerce Act.

The second category—contract carriers—includes those which conduct motor transport services for compensation "under special and individual contracts or agreements," whether the operations are conducted directly or by lease or other arrangements.

A third classification, private carriers of property by motor vehicles, includes those which transport goods by motor vehicle as owners, lessees or bailees, when the transportation is in the furtherance of any commercial enterprise, including the sale, lease, rental or bailment of the goods.

The fourth division of those subject to the Motor Carrier Act includes brokers, those who as principals or agents, and not as the bona fide agents or employees of any motor carrier, undertake to sell any type of transportation services subject to the Act or who hold out "by solicitation, advertisement or otherwise as one who sells, provides, furnishes, contracts or arranges for such transportation."

Common carriers, contract carriers and brokers are required to obtain authority to operate their services from the Interstate Commerce Com-

mission. In the case of common carriers, the prized authorization documents are known as certificates of public convenience and necessity; contract carriers must obtain corresponding documents known as permits; and brokers must apply for licenses to conduct or continue their operations.

The "Grandfather Clause" of the Act

All common carriers who were in bona fide operation on June 1, 1935, and all contract carriers who were in operation on July 1, 1935, were entitled as a matter of right under the so-called "grandfather clause" of the Act to have the Interstate Commerce Commission issue certificates or permits to them without requiring further proof that public convenience and necessity will be served by their operations and without further proceedings before the Commission, if the carriers applied to the Commission for certificates or permits within 120 days from the effective date of the Act, October 15, 1935. The period of grace for filing applications under the "grandfather clause" expired February 12, 1936. Carriers who were in operations prior to the statutory dates,—June 1 or July 1, 1935,—were permitted to operate for 120 days after October 15, 1935, without certificates or permits, but after February 12, 1936, those who did not file applications no longer had the privilege or right of continuing in business unless prior to February 12, they had filed their applications. All motor transport operators which were established subsequent to October 15, 1936, are required to obtain a certificate, if a common carrier; a permit, if a contract carrier; and a license, if a broker, before engaging in service over any public highway in interstate or foreign commerce. Operation without having obtained certificates or permits in wilful violation of the Act is subject to a fine of $100.00 for the first offense and $500.00 for each subsequent offense. Each day of violation is considered a separate punishable offense.

Carriers Exempt from Regulation

The Motor Carrier Act gives the Interstate Commerce Commission authority to establish and enforce reasonable requirements for the promotion of safety of operation by prescribing the qualifications and hours of service of employees, and the standards of equipment applicable to all motor carriers, private, contract and common carriers alike.

These provisions, but not the rest of the Act, apply to school busses,

taxicabs, hotel busses; motor busses operated under the control of the Secretary of the Interior of the United States in the National parks and monuments; motor vehicles operated and controlled by any farmer and used in the transportation of his agricultural commodities or products or in the transportation of supplies for his farm; trucks operated and controlled by cooperative associations as defined in the Agricultural Marketing Act; trolley busses operated by overhead electric wires; motor vehicles used exclusively in the transportation of livestock, fish, including shell-fish, or agricultural commodities, but not including the manufactured products of agriculture; and trucks used exclusively in the distribution of newspapers. In 1938 the Act was amended to allow carriers of live stock and agricultural products to haul other commodities in their vehicles without compensation and remain exempt from the provisions of the Motor Carrier Act relating to carriers.

The provisions of the Act—excepting those pertaining to employees and safety which, as has been previously stated, apply to all interstate motor operations—do not apply unless the Interstate Commerce Commission shall find that the application of the Act is necessary, to carry out the policy of Congress, to the motor transportation of passengers or goods wholly within single municipalities or between contiguous municipalities. If, however, the motor carriers engaged in such local transportation are under common control or management or are working under arrangements for continuous carriage or shipment to or from points outside the municipal areas, they are subject to all of the provisions of the Act. Purely local movement of freight by truck to or from consignees or shippers both of which are located within the same municipal area, such as movements of lumber from the yards of wholesale to those of retail dealers, would appear not to be subject to the law, but movements within the same areas, when moving as integral parts of through interstate movements by motor, by rail-and-motor, or water-and-motor services, would appear to be subject to regulation. Greater certainty on this score, however, is impossible until the Interstate Commerce Commission has undertaken to determine the status of such movements by decisions or orders interpreting the Act, and until the courts have handed down judicial interpretations of the application of the law to specific cases, and a body of administrative and court made law has been developed.

The Act also exempts, until such time as the Commission finds it

expedient to apply the Act, the "casual, occasional or reciprocal" transportation of passengers or commodities for compensation by persons not engaged in motor transportation as a regular business.

Jurisdiction of the Interstate Commerce Commission

The Interstate Commerce Commission is granted the power and charged with the responsibility of regulating common carrier motor transport operators by establishing reasonable requirements for continuous and adequate service, uniform accounts and reports, preservation of records, qualifications and maximum hours of service of employees, safety of operation and equipment.

In the case of contract carriers, the Commission's jurisdiction is the same as in the case of common carriers, excepting that no provision is made to give the Commission jurisdiction over or responsibility for standards of continuous and adequate service of contract carriers, and the Interstate Commerce Commission has jurisdiction over only the minimum rates of contract carriers, and not over maximum or actual rates, as in the case of common carriers.

The jurisdiction of the Commission is still more restricted in the case of private carriers, extending only to matters pertaining to safety of operation, qualifications of employees, hours of service, and standards of equipment.

Brokers in the field of motor freight transportation are subject to the authority of the Interstate Commerce Commission to the extent of being required to apply to the Commission for licenses, and of establishing their financial responsibility. The Commission also has jurisdiction to regulate the accounts and records of brokers and to require reports, as well as to determine the nature of their operations and business practices.

Certificates of Public Convenience and Necessity

Applications for the certificates of public convenience and necessity required of all common carriers, excepting those qualifying under the "grandfather clause" of the Motor Carrier Act, must be made in writing in the form prescribed by the Commission, and verified under oath. The applicants must show that they are "fit, willing and able" to perform the proposed services and to conform to the provisions of the Act and the rules and regulations made by the Interstate Commerce Commission. It must be shown that the proposed services are required

by the present or future public convenience and necessity. The certificates granted to the successful applicants do not confer any proprietary or property rights over the use of the public highways, but only the privilege of their proper use in the conduct of the business of the certificated carriers.

Permits for contract carriers must be applied for in the same way, and the applicants must prove to the Commission that the proposed contract services are consistent with the public interest and with the declared policy of Congress with respect to motor transportation.

When the applications for certificates or permits involve not more than three states, the Commission is required by the law to refer the applications to joint boards composed of one representative of each public utility commission in the states in which operations are conducted by the applicants. If more than three states are involved the Commission may in its discretion refer the applications to joint boards constituted in the same manner. Matters involving the supervision, change or revocation of certificates, permits or licenses, and other matters may also be submitted to these joint boards. The recommended orders of the joint boards are filed with the Interstate Commerce Commission and become orders of the Commission according to the same procedure as is followed in cases which are heard by members of the Commission or its attorney-examiners who act in cases not referred to the joint boards.

The certificates, permits or licenses granted by the Commission indicate the terms and conditions upon which the privileges are granted, including:

1. The routes to be served
2. The termini between which operations may be conducted, or the territories within which the operations may be carried on
3. Limitations upon the exercise of the privilege
4. Restrictions or limitations upon the extension of routes.

An important provision of the Act stipulates that no terms, conditions or limitations shall restrict the right of motor carriers to add to their equipment and facilities over the routes, between the termini, or within the territories specified in the certificates as the development of their business and the demands of the public require.

Common carriers who operate over regular routes may occasionally

deviate from their routes or the regular termini between which they are authorized to operate under general or special rules that the Interstate Commerce Commission may prescribe. Common carriers engaged in passenger service over regular routes may operate special or charter bus service under similar regulations, and certificates for passenger service may include also authority to transport newspapers, baggage, express or mail in the same vehicles with the passengers, or transport the baggage of passengers in separate vehicles.

Dual operation of a common and contract service in the transportation of freight is prohibited over the same routes or within the same territories unless the Commission finds that such services by the same carriers may be performed consistently with the public interest and the policy of Congress.

The Regulation of Rates and Charges

It is not possible in this brief chapter to discuss all of the matters over which the Interstate Commerce Commission has jurisdiction and for which it has responsibility in the regulation of the affairs of motor carriers. Of outstanding importance, however, is the regulation of the rates and charges of the carriers. The Commission has power to require motor carriers to establish, observe and enforce just and reasonable rates over their own individual lines and over joint routes. This includes the obligation of using proper classifications of freight; packing, marking and shipping regulations; tariffs of rates and charges which must be filed to become effective prior to engaging operation, and which may not be increased or decreased thereafter except upon thirty days' notice to the Interstate Commerce Commission and to the public; and proper bills of lading or freight receipts. The Commission has power to suspend the tariffs or schedules of rates and charges pending investigation into their lawfulness.

Contract carriers are not required to publish and file with the Commission tariffs containing their complete rates and charges, but only their minimum rates, or in the discretion of the Commission, they may be required to file copies of their contracts with those for whom they perform the trucking services, indicating the minimum charges and any rules, regulations or practices affecting the services and the charges for them. The Commission requires that schedules of minimum rates of contract carriers, and copies of their contracts be filed with the Com-

mission. The operating rights of a carrier may be suspended for failing to file tariffs, schedules or contracts.

In determining the reasonableness of the rates or charges of motor carriers in any proceeding the Commission is directed by the Act not to give any consideration, in determining the valuation of motor carriers for rate making purposes, to good will, earning power, or the certificates of public convenience and necessity under which the carriers operate. The Commission is specifically directed to give consideration among other factors to: (1) the inherent advantages of motor transportation; (2) the effect of the rates upon the movement of traffic; (3) the public need of adequate and efficient motor transportation service at the lowest rates consistent with furnishing such service; and (4) the needs of the carriers for revenues sufficient to enable the carriers, under honest, economical and efficient management to provide facilities and services up to this standard.

The charges of motor carriers must either be paid before the goods are delivered at destination or arrangements must be made for the settlement of charges under the credit regulations prescribed by the Interstate Commerce Commission to insure freedom from unjust discrimination or undue preference or prejudice among shippers or consignees.

All of the business affairs of the motor carriers subject to regulation must be conducted subject to uniform sets of accounts and records to be prescribed and enforced by the Interstate Commerce Commission. Failure to keep such accounts, or the falsification, destruction, mutilation or alteration of records—when done knowingly and willfully—are punishable by fines ranging from $100 to $5000. The Commission has prescribed uniform accounts for all motor carriers whose annual operating revenues are $100,000 or over.

Finances and Securities

The Interstate Commerce Commission has the authority and the duty imposed upon it by the Act to require motor carriers to post insurance and surety bonds to indemnify the public and the passengers and owners of the goods transported by the carriers for loss of life, injury or the damage of the vehicles or property of others. The Commission has issued detailed regulations governing insurance and other surety required of motor carriers in the protection of the public.

The Commission is given authority over the consolidation, merger and acquisition of motor carriers subject to the Act, and over the issuance of securities of all motor carriers where the par value of the outstanding securities and those proposed to be issued is $500,000 or more.

Miscellaneous Amendments to the Motor Carrier Act by Amendment of 1938

Several amendments provided for by the Lea Act of 1938 have been discussed above, in connection with the major provisions of the Motor Carrier Act as altered by these amendments. In addition, several additional amendments provide: (1) the Interstate Commerce Commission is required to give motor carriers at least 15 days' notice before suspension of operating rights for cause; (2) the Interstate Commerce Commission may determine, when necessary, what combinations of various types of motor vehicles, such as tractors and semi-tractors, shall be used to constitute a single motor vehicle within the meaning of the Commission's present and future safety regulations; (3) the Commission is granted discretion as to whether a recommended order and report shall be required in motor carrier cases, in order to expedite cases where expedition is necessary; (4) the Commission, in emergency cases, without hearings or other proceedings, may issue to carriers temporary authority to operate for not more than 180 days; and, (5) the Commission may require the display of identification plates upon all motor vehicles used in transportation subject to the Motor Carrier Act. This regulation includes all vehicles used in interstate commerce and not merely the vehicles of carriers required to have permits or certificates.

The Administration of the Act

The administration of the Motor Carrier Act, 1935, is placed by the Interstate Commerce Commission, to whom the general responsibility is delegated by Congress, in its Division 5 composed of three members of the Commission. The Division has general jurisdiction over motor carriers "except as to rates and securities, and approval of consolidations, mergers, purchases of motor carriers . . . formulation of accounts, and enforcement of penalties, which have been transferred to other divisions."

Subordinate to the Interstate Commerce Commission is the Bureau

of Motor Carriers. This Bureau consists of a Director and Assistant Directors, one having general supervision over the sections comprising the headquarters organization, and the other having jurisdiction over the field organization. There is also an Assistant to the Director in charge of administration work of the Bureau.

The Section of Certificates has jurisdiction over certificates, permits and licenses. Surety bonds and insurance are regulated by the Section of Insurance. The Section of Finance has the responsibility for the regulation of the securities of motor carriers and mergers in which they are concerned. The Section of Traffic has the supervision of the tariffs schedules, contracts, the concurrence of carriers in the tariffs of others, the suspension of tariffs, and the divisions of rates and charges. The Section of Accounts has jurisdiction over the uniform system of motor carrier accounting and of the reports and accounts of motor carriers. A Section of Complaints is provided to attend to the formal and informal complaints involving motor carriers and service matters affecting them. The Section of Safety has responsibility for matters pertaining to hours of service of motor carrier employees and motor vehicular safety regulation. The Section of Research is responsible for the development of information desirable for adequate regulation.

The Field Staff of the Bureau of Motor Carriers consists of sixteen district offices under the direction of District Directors. Each District staff has a force of rate agents, accountants and joint board agents. The latter act as liaison agents between the Bureau of Motor Carriers of the Interstate Commerce Commission and the state regulatory commissions. The District Director has jurisdiction over the District Supervisors who act as contact representatives between the Bureau and the motor carriers in the field.

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PART VII

THE COORDINATION OF TRANSPORTATION

CHAPTER 51

Coordination and Consolidation in Transportation

Having discussed the several kinds of transportation in some detail, it remains to consider the bringing of the different agencies and facilities into an integrated national transportation system. The facts that have been presented will be referred to and applied first to a discussion of coordination and consolidation in transportation.

During most of the nineteenth century the general acceptance of the doctrine of laissez faire by the people of the United States caused them to rely upon competition in transportation, as well as in production, as the major incentive to progress and as the safeguard of the public against unjustly high charges. Government regulation of carriers, until the end of the second decade of the twentieth century, was concerned primarily with the maintenance of competition and the prevention of practices that limited competition, the secondary and related purpose of regulation being the protection of the public against unfair personal and place discriminations in charges for service.

The coordination or joint use of facilities of competing carriers, and a coordinated program of services, are a partial substitution of cooperation for competition in the relations of rival carriers. The cooperating carriers continue to provide most of their facilities and perform most of their services independently of each other, whereas when two or more companies, such as railroad companies, consolidate there is unity in the ownership of facilities and in service performance. Consolidation carries with it complete coordination in the activities of the companies that have been unified.

The coordination of transportation facilities and services, whether by voluntary cooperation of the carriers or by requirement of the government, may be either intraagency or interagency coordination. There may be the cooperation of one kind of a carrier with another of like kind—of railroad with railroad, motor company with motor company, water line with water line, of two or more air lines—, or the cooperation or

coordination of facilities and services may be by different agencies of transportation—of railroads with truck or bus operators, of carriers by water and air line companies with other carriers. Of the two, inter-agency coordination is, possibly, of greater significance, because it tends to bring the separate agencies into a unified system of transportation.

The consolidation of carriers may, likewise, be the unification of like agencies, such as two or more railroads, into a single unified system; or it may be the union of different agencies or the performance of different transportation services—rail and motor transportation, or rail and water transportation—by one company or by the common ownership and operation of two different kinds of carriers. Public policy regarding each kind of consolidation and coordination has been definitely embodied in legislation.

PUBLIC POLICY REGARDING COMPETITION AND CONSOLIDATION OF CARRIERS

The faith of the public in the importance of maintaining competition among carriers was shown by the inclusion by Congress, in the original Interstate Commerce Act of 1887, of Section 5 prohibiting competing railroads from pooling their freight traffic or their aggregate or net earnings from freight or passenger services. The Senate would have given the Interstate Commerce Commission authority to permit competing railroads to cooperate by means of traffic and money pools, but the House of Representatives believed that the prohibition of pooling, and of the accompanying joint action of the carriers in rate making, would be better for the public than would freedom of interrailway cooperation. This mistaken theory was adhered to until the Transportation Act of 1920 permitted carriers, with the approval of the Interstate Commerce Commission, to pool competitive traffic or earnings therefrom.

While Congress, in adopting the Sherman Antitrust Act of 1890, had in mind the prohibition of combinations in restraint of trade, and not the cooperation of railroads in rate making, the Supreme Court in the Trans-Missouri Freight Association Case, which was decided in 1896 (166 U.S. 290), held that the prohibition of all combinations in restraint of trade made it unlawful for the railroads, through their traffic associations, to enter into agreements concerning rates upon competi-

tive traffic. While this interpretation of the Antitrust Act of 1890 limited the cooperation of the railroads in rate making and the development of general rate structures, it gave added impetus to the voluntary consolidation of carriers and to the building up of the large railroad systems that were in the process of formation. Intercarrier cooperation was further restricted by a provision of the Clayton Antitrust Act of 1914 which prohibited a person from serving upon the directorate of more than one railroad company, unless permission is given by the Interstate Commerce Commission.

The policy of enforcing competition between railroads and carriers by water was further emphasized by the Panama Canal Act of 1912, one provision of which prohibited a railroad company from operating vessels through the Panama Canal and from owning or operating, elsewhere than via the Canal, vessels with which the railroad does or may compete. The Interstate Commerce Commission was, however, given authority to permit a railroad company to own and operate a vessel line, if such operation would not reduce competition and would be in the public interest. The railroads were compelled to dispose of their package freight lines on the Great Lakes and most of their coastwise lines. The New Haven Railroad was allowed to continue its ownership of the New England Steamship Company and the Southern Pacific Railroad was permitted to retain the Morgan Line by which it connects New York with its terminals at New Orleans, Galveston and Houston.

A considerable change in the policy of enforced competition and dissociated ownership of carriers has been made. The change began with the adoption of the Transportation Act of 1920 which so amended the Antitrust Acts as to permit a railroad company, with the approval of the Interstate Commerce Commission, to acquire control of another railroad company by lease of property or purchase of securities, the company thus taken under control to be continued as an operating company. The 1920 statute also permitted the consolidation and merger of two or more railroad companies, the consolidation to be subject to the approval of the Interstate Commerce Commission and in accordance with a general plan of grouping of the railroads of the United States, which plan was to be promulgated by the Commission in advance of acting upon individual mergers. The assumption that the interested carriers would and could by voluntary action give effect to a general plan

of grouping promulgated in advance by the government has proven to be fallacious; although the plan of consolidation promulgated by the Commission might possibly have been partially accomplished, had it not been for the adverse business and financial conditions that have prevailed since 1929.

The Motor Carrier Act of 1935 has provided for the consolidation, with the approval of the Interstate Commerce Commission, of interstate motor carriers and also for the operation by railroad companies of motor passenger and freight lines as supplements to or extensions of their railroad services. Large-scale bus and truck services are being built up, and the railroads are also engaging increasingly in motor passenger and freight operations, while at the same time desirable competition is being preserved and the interests of the public are being protected by the Commission which has authority to decide who may engage in interstate services and what rates and fares may be charged.

The Civil Aeronautics Act of 1938 creates a Civil Aeronautics Authority which is given power to permit air lines to consolidate when such a consolidation will not create "a monopoly or monopolies and thereby restrain competition or jeopardize another air carrier not a party to the consolidation." The administrative and financial community of interests of air line companies is subject to stringent regulation by the Aeronautics Authority which must decide that the public interest will not be adversely affected by an air carrier having as an officer or director a person who is an officer or director of another air carrier or of a company that has control of another carrier or "is engaged in any phase of aeronautics." Likewise, the Authority's approval must be obtained before a person holding a stock-controlling interest in one air line or aeronautic company may serve as an officer or director of another air carrier company. Moreover, the Authority's approval must be obtained for pooling and other agreements of air carriers as to rates, operations and "other cooperative working arrangements." The general purpose of the consolidation provisions of the statute is to maintain competition while permitting voluntary carrier integration to build up strong air line systems.

PUBLIC POLICY AS TO COORDINATION OF CARRIER FACILITIES AND SERVICES

Every carrier desires to carry traffic as far as possible upon its own lines or route and with its own equipment; but it also wishes to obtain as much traffic as can be gotten from carriers with which it connects and also to secure from shippers traffic that is to be turned over to its connections for delivery at points off its lines. Thus railroads and other carriers are interested in establishing through routes by rail, or by rail and other carriers. Carriers may, however, differ as to the through routes and arrangements they desire, and shippers may wish to ship at joint rates by through routes that carriers may prefer not to provide.

To assure to the public the benefits to be derived from the coordination of the services of connecting carriers, the Hepburn Act of 1906, gave the Interstate Commerce Commission the authority to establish through routes and joint rates not only via connecting railroads but also over a rail-water route. The Commission could also establish the maximum through rate and apportion the same between or among the participating carriers. By the Panama Canal Act of 1912, the Commission was given two additional powers over through routes. It could require a railroad to make physical connection with the dock of a water carrier, or compel the rail and water carriers to share in making such connection, to provide for the interchange of traffic, if such interchange was found by the Commission to be "of public convenience and necessity." The statute also gave the Commission authority to order a railroad that entered into a through traffic arrangement with a "water carrier operating from a port of the United States to a foreign country . . . to enter into similar arrangements with any or all other lines of steamships operating from said port to the same foreign country."

Another kind of coordination of carriers, and one that is not easily brought about, is the joint use by competing carriers of their terminal and other facilities. It is but natural that a carrier that has taken the trouble and incurred the expense of providing itself with terminal or other facilities should not wish to share their use with its competitors, unless such joint use will be to the definite advantage of the owner of the facilities. From the point of view of general public interest and of the economy and efficiency of the transportation system as a whole, the general coordination, and the minimizing of the unnecessary duplica-

tion, of facilities and services are desirable. The voluntary action of privately owned carriers will not bring about the adequate and economical coordination of the facilities and services either of any class of competing carriers or of different transportation agencies. The end desired can be attained only by government action.

Legislation for the compulsory coordination, or common use, of railroad terminals began with the Transportation Act of 1920 which gave the Interstate Commerce Commission the authority when found "to be in the public interest and to be practicable," to require a carrier, over which the Commission had jurisdiction, to permit another carrier or other carriers to use its terminals for a reasonable compensation to be fixed by agreement of the carriers, or, if necessary, by the Commission. This provision of the 1920 statute did not bring about the coordinated use of terminal facilities. Some important passenger terminals were constructed by voluntary joint action of the interested railroads, but it was railroad consolidation, rather than railroad coordination, that was given chief consideration during the prosperous decade ending in 1930. However, the mistaken legislative policy, above referred to, hindered voluntary large-scale railroad consolidations; and, when the business depression that began at the end of 1929 had become severe, the railroads entered upon a period of competitive struggle for survival, a struggle intensified by the increasing loss of traffic to motor carriers. Plans for voluntary railroad consolidations or for the coordination of facilities have received scant consideration since 1932.

An attempt to correct, or at least to improve, this situation was made by Congress by the enactment of the Emergency Railroad Transportation Act of June 16, 1933, which provided for a Coordinator of Transportation, who, with the assistance of committees of the railroad carriers, was "to encourage and promote or require action on the part of the carriers . . . which will avoid unnecessary duplication of services and facilities of whatsoever nature and permit the joint use of terminals and trackage." The Coordinator was, also, "authorized and directed to issue and enforce such orders as he finds to be consistent with the public interest" to compel action by the carriers. These emergency provisions of the Act of 1933, which were to be in effect for only one year, were, by subsequent legislation, kept in force for a total period of three years. The Coordinator and his staff, by their investigations, showed that by numerous terminal coordinations operating and other costs could be

reduced, but both voluntary action by the carriers and compulsion by the Coordinator were blocked by the labor provisions of the Act of 1933 which stipulated that no action should be taken, in carrying out the statute, that would thereby reduce the number of employees on the pay rolls below the number employed in May, 1933, or that would cause a man employed in that month to be deprived of employment or to be reduced in rank or pay. As terminal coordinations would necessarily involve the displacement of employees, and at least temporary unemployment, it was not until the representatives of the carriers and the employees had reached an agreement as to displacement compensation that the provisions of the 1933 Act as to coordination of railroad facilities and services could be enforced. That agreement was made May 21, 1936, but by that time both the carriers and the labor leaders had decided that the emergency provisions of the Act of 1933 had better not be kept in force after June 1936. The labor leaders had become more interested in securing effective and adequate pension and retirement legislation; and the carriers were quite willing to be left to deal with coordination plans by voluntary action without government compulsion.

While the hoped-for coordination of railroad facilities and services has not met with much success during the past decade, real progress is being made in the integration and coordination of the facilities and services of railroads and the motor carriers both bus and truck. Through financial interest in such large motor passenger carriers as the several Greyhound Lines, and through the usual type of subsidiary companies, the railroads are rapidly enlarging the number and scope of motor passenger services, both supplementary and complementary to railroad services. Moreover, as permitted by the Interstate Commerce Commission, the railroads are to an increasing extent—though the process is still in its early stages—extending and rounding out their freight services by the performance, usually through the agency of contract carriers, of motor freight transportation. This is often accompanied by the joint use, by rail and motor carriers, of facilities formerly used only by the railroads. The tie-up of motor passenger terminals with railroad passenger stations is especially close.

HOW CAN CONSOLIDATION AND COORDINATION OF TRANSPORTATION AGENCIES BE ACCOMPLISHED?

As the foregoing discussion suggests, the task of bringing about such consolidation and cooperation of transportation agencies as will be of advantage to the carriers and in the public interest involves mainly the grouping of the railroads into a much smaller number of systems and the coordination of the facilities and services of the railroads and the other agencies of transportation into a unified country-wide system. The most difficult problem to solve, and the one for which an early solution should be found, is how to accomplish the desired grouping and consolidation of the many railroad systems. Railroad consolidation when effected will be followed, or accompanied, by the adequate coordination of railway facilities and services; and the task of integrating transportation by rail, motor, water and air carriers will be simplified.

Any effort to bring about the consolidation of the railroads in the United States must be preceded by a decision as to whether the grouping shall be about existing large and strong systems, or by territories, the country being subdivided into a limited number of districts with one consolidated railroad system for each district; or whether all the railroads shall be put together into one country-wide system owned and operated by the government or by a corporation responsible to the government. Consolidation procedure also involves an advance decision as to the method to be followed. The decision reached by Congress in the Transportation Act of 1920, and which Congress adhered to in adopting the amendatory act of 1933, was that consolidation should be by grouping the railroads into a limited number of systems of relatively equal strength and privately owned and operated. This was to be accomplished by voluntary action of the carriers subject to the authority given the Interstate Commerce Commission to decide whether proposed consolidations were in the public interest. Neither the territorial grouping nor the country-wide consolidation of the railroads has been generally favored by the public; and for equally valid reasons public sentiment has opposed the substitution of governmental, for private, ownership and operation.

It is evident from what has taken place since the enactment of the 1920 and 1933 statutes that those Acts must be amended if the general consolidation of American railroads into systems is to be accomplished

by voluntary action of the carriers. At least two amendments are essential. The present requirement that groupings shall be in accordance with a foreordained comprehensive plan must be eliminated; and power must be given the Interstate Commerce Commission to exercise, or to authorize a purchasing carrier to exercise, the right of eminent domain in acquiring control of a railroad that has been included in a consolidation approved by the Commission, when such control cannot otherwise be obtained at a reasonable and equitable purchase price. Moreover, while voluntary consolidation of the railroads into systems privately owned and operated is the goal to be sought, and while it is hoped that the end desired can be attained over a period of years, past experience makes it seem advisable that Congress should fix a period of sufficient length to enable the reorganization of insolvent companies to be completed. During this period, voluntary consolidation by systems should proceed, and following such period the Government should complete the task of consolidating railroads by systems by means of such compulsory action as may be necessary.

Such consolidation of motor carriers with each other, and of air carriers with each other, as seems desirable has been made permissible, under regulation by the Interstate Commerce Commission and the Civil Aeronautic Authority. The incentive to consolidate will doubtless be strong enough to bring about the growth of large organizations. There are no present problems connected with the consolidation of carriers by water, either coastwise or on inland waterways. There is also incentive for, and public approval of, the integration of the services of water and motor carriers. Their relations are not competitive but are complementary.

The present two-fold problems of transportation consolidation and coordination are (1) the grouping of the many railroads into a limited number of systems, the general coordination of the facilities that they can advantageously to themselves and the public use in common, and such integration of their services as will give them maximum economy and efficiency; and (2) the coordination of the facilities and services of all carriers, those by rail, road, water and air, into a unified national transportation system. Public opinion and legislative policy can and will be of assistance in solving these problems.

While the difficult task of bringing about the desired grouping or consolidation of the railroads is being accomplished, the railroads should

do what they can to substitute coordination for dissociation and competitive practices. Consideration should be given to the practicability, and possible economy, of the pooling of less-than-carload freight, the pooling of freight car equipment, and the more general common use of passenger and freight terminal facilities. The unnecessary duplication of passenger train services can be further reduced by the joint action of competing carriers in the scheduling of trains. These and other means of service coordination are not being overlooked by the railroads, and it is to be hoped the psychological and other obstacles to cooperative action can be surmounted while the evolutionary process of railway consolidation is being worked out.

While the coordination of the facilities and the integration of the services of rail and motor transportation are still but partial, a real beginning has been made; and, inasmuch as interstate rail and motor carriers are now subject to like regulation by the same commission, the trend towards cooperation may be expected to continue. The United States has been adhering to the fallacious policy of not applying to carriers by water, especially those upon inland waterways, regulation of the kind and scope that is exercised over railroad and motor carriers; and the further mistake is being made of denying to railroads the opportunity of engaging freely in transportation by water subject to the same government regulation as carriers by rail are now subject. The facilities of railroad and water transportation should be complementary and the services should be cooperatively rendered.

While the Civil Aeronautic Act of 1938 provides safeguards against the establishment of monopoly in air transportation either by the consolidation of air carriers or by their control by non-air carriers, the statute gives the Aeronautics Authority power to approve a "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." To be "consistent with the public interest," a consolidation or an acquisition of control must not "restrain competition or jeopardize another air carrier not a party to the consolidation." For the most part air transportation is by large companies. There is ample incentive for integration within the service and of the services of air carriers with those of other carriers.

In general the coordination and consolidation of the agencies and facilities of transportation of such kind and scope as will be in the public

interest can be brought about without sacrifice of the advantages that result from private ownership and operation. By wise government regulation of all carriers, and by the cooperation of the government with the carriers, the desired result can be obtained. Government ownership and operation of the railroads or other transportation agencies is not necessary. The end sought should be a coordinated and integrated national transportation system, with private ownership and operation, subject to adequate and constructively helpful government regulation.

REFERENCES

The statutes referred to in the text, especially Section 5 of the Interstate Commerce Act as amended by the Emergency Transportation Act of 1933; the Motor Carrier Act of 1935 which is Part II of the Interstate Commerce Act; and the Civil Aeronautics Act of 1938, Section 408.

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CHAPTER 52

A National Transportation Policy

The foregoing parts of this volume have dealt in turn with each kind of transportation—railroad, air, pipe line, water and highway. The services rendered by each class of carriers have been described; an account has been given of the relation of the carriers to each other and to the public; and government aid and regulation of each transportation agency have been considered. The volume is thus a treatise upon the economic functions and the business of transportation, and upon the public policy that should be followed in furthering the development and coordination of transportation facilities, and in regulating rates and services.

The chapters dealing with government aid and regulation show that, while there is a public policy regarding each kind of transportation and carrier, the public and the government have as yet only partially worked out, and put into effect, a general national transportation policy. We still are apt to think of railroads, pipe lines, waterways, highways, and airways as separate entities that are primarily competitive and but secondarily coordinative, instead of parts of an interrelated and integrated country-wide transportation system. A brief survey and summary of what has been stated concerning present government transportation policies, of their origin, development and present status, will indicate what is yet to be done to develop, and give effect to, a national transportation policy.

PRESENT GOVERNMENT TRANSPORTATION POLICIES

The government's present relation to the railroads is that of regulation plus temporary financial assistance. Although regulation is detailed and comprehensive, its purpose is not only to protect the public against abuses, but also to be constructively helpful to the carriers. The

Commission that fixes the rates, and thus the revenues, of the carriers is directed by the Interstate Commerce Act to "give due consideration, among other factors, . . . to the need, in the public interest, of adequate and efficient railway service." The Commission is also charged with the duty of keeping within nondestructive and reasonable limits—so far as this can be done by regulation—the competition, in rates and services, of the railroads with each other and with other carriers. Another evidence of the purpose of the government to be helpful is the making of liberal loans, beginning in 1932, to many railroads that have been placed in a necessitous condition by the large reduction in traffic caused by a prolonged business depression and by the accompanying diversion of an increasing amount of traffic from railroad cars to automobiles, trucks and ships. The present condition of the railroads evidences the need of a national policy that will more closely interrelate the several agencies of transportation and apply to all of them the same general principles of government aid and regulation.

When railroad construction began in the United States, about 1830, transportation, other than that of local short hauls, was mainly coastwise or by rivers and canals, insofar as they were available. Many states had begun the construction of canals, and for twenty years after the introduction of railroads several states continued to build and operate canals. Some states also aided the construction of long-distance highways. However, by 1850, the railroads had demonstrated their superiority over the barge canals of that time and also over most other inland waterways other than the Great Lakes and the Ohio and Mississippi rivers. Most states, other than New York and Illinois, began withdrawing from aiding canal transportation; and some states for a while assisted in railroad construction.

Shortly after the Civil War, both the states and the Federal Government changed their policy concerning railroads and waterways. The rapid extension of railroad systems was accompanied by intense interline competition and consequent discriminations in rates and services both as between persons and among places. This caused the states, in increasing number from 1869 on, to enact laws for the protection of the public against unreasonable rates and discriminations and to provide for the general regulation of the railroads. State aid to railroads changed to regulation, the state operation of canals was brought to an end, except in New York State, whose canals connected the Great Lakes with the

Hudson River, and in Illinois where canals connected the Illinois and Mississippi Rivers with Chicago and the Great Lakes. These two trans-state waterway systems, which have been given greater depth and capacity, latterly and currently with liberal Federal aid, have become of increasing importance as parts of a general system of inland waterways.

When the states withdrew from the improvement and extension of inland waterways, the Federal Government took on the work. Beginning with 1870, Congress has regularly made appropriations for "rivers and harbors." For a while these appropriations were made biennially; now Congress acts annually providing funds for the improvement of the harbors at the seaboard and on the Great Lakes, for improving the navigation of rivers, and for the construction of canals. The facts as to the great increase in expenditures, from 1932 to the present, for river improvements and canal construction—and the questionable justification for much of this outlay from the standpoint of transportation needs—have been presented in the chapter on Federal Policy concerning Inland Waterways.

The Federal Government began the regulation of railroads in 1887, nearly two decades after the states had begun. As has been explained, this regulation has been broadened in scope and made increasingly effective by a series of amendatory and supplementary statutes and there will doubtless be additional legislation. The most general purposes of the governmental regulation of railroads or other transportation facilities of private ownership and operation have been and always will be (1) the protection of the users of the railroads, and the public in general, against unreasonable rates and unjust discriminations in services; and (2) the assurance, so far as is possible by government regulation, of the provision and development by private enterprise and investment of adequate and efficient transportation services.

Prior to 1920, the emphasis in the Federal regulation of railroads was placed on preventing monopoly that might result from the pooling of competitive traffic or earnings therefrom, or from agreements as to rates on competitive traffic. The maintenance of inter-carrier competition was considered to be of major importance. The public relied mainly on inter-railway competition to keep railroad charges from being too high, while the regulation by the Interstate Commerce Commission was to be concerned largely—though not entirely—with preventing unjust discriminations in rates and services. Legislation was thus devoted

mainly to the prevention and eradication of abuses, for which legislation there was ample justification, not only as regards railroad ratemaking, which has been subject to effective regulation since 1910, but also as regards railroad financial practices, which might well have been brought under government control as early as 1910 instead of as late as 1920.

From 1920 to the present, government regulation, both by the states and by the Federal Government, and not only of the railroads but of carriers by road, water, and air, has sought not only to punish and to eliminate abuses, but also to promote the development of transportation and to be of assistance to the carriers that are subject to regulation. Unfortunately, the degree of promotive assistance given some kinds of transportation and carriers has, as a result of the influences that shape legislative policy, been disproportionately great as compared with other carrier facilities and agencies, with the consequence that there is at present a surplus of transportation and a lack of proper balance among the component parts of the transportation system as a whole.

The major constructive features of the railroad policy adopted by the Federal Government in the Transportation Act of 1920, were (1) the exemption of the railroads, as regards consolidations and pooling, from the inhibitions of the antitrust laws and the permission of railroad consolidations when and as approved by the Interstate Commerce Commission; (2) the adoption of a rule of ratemaking directing the Interstate Commerce Commision so to fix and to adjust rates and charges as to enable the railroads in the aggregate to earn a fair return on the value of their property devoted to the service of the public; and (3) the regulation by the Commission of the issue of securities by the railroads, the two-fold purpose of the regulation being to safeguard both the public and investors against the overcapitalization of the railroads. For reasons that have been adequately set forth, the anticipated results from this constructive policy were only very partially secured. The consolidation of the railroads—large and small, strong and weak—into a limited number of systems of relatively equal strength, in accordance with a plan of grouping decided upon and promulgated by the Commission, has not been accomplished. Nor was the Commission able to—at least it did not—establish and maintain rates, fares and charges that yielded the carriers in the aggregate a fair return upon the value of their property, and in 1933 Congress repealed the rule of rate making that had been adopted in 1920, and substituted therefor the less specific mandate

embodied in a generalized rule that has since been in force. The government regulation of the issue of railroad security issues, in accordance with the provisions of the Act of 1920, has been more successful, especially since the Act of 1933 brought under Commission regulation the financial control of railroads by holding companies. In general, what has taken place since 1920 as regards railroad regulation, and the conditions that have developed in railroad transportation since 1929 as regards traffic, earnings, return on investment, the relations of the railroads with each other and with other carriers, has emphasized the urgent need of the adoption of a constructive national transportation policy by which can be accomplished, along with desirable benefits to other classes of carriers, what Congress sought to do regarding railroad carriers by the Transportation Acts of 1920 and 1933.

Highway transportation is upon public roadways constructed by local and state governments which since 1915 and especially from 1933 to the present have received increasingly large Federal assistance. Highway transportation policy involves the correct answer to two questions: How and from whom should the funds for providing and maintaining highways be obtained, and to what regulation by the states and the Federal Government should the users of the highways be subject?

The rapid development of railroads, from the revival of industry after the close of the Civil War until near the end of the century, provided the necessary facility for long-haul transportation; and rural highways, being of only local use, were provided by the townships in the northern states and usually by the counties or subdivision thereof in the south. The states did not concern themselves with the highways. However, a change from a policy of local roads to state highways began in 1891 when New Jersey provided for a highway authority and for state aid to the counties for construction or improvement of designated highways, in order thereby to bring into existence a system of good roads throughout the state. New York and other states soon adopted state highway policies and programs; and, by 1917, a state highway authority had been created in every state. The states have taken over the construction and maintenance of the main highways outside of the cities, the local roads usually being in charge of the counties and townships, aided in some instances by state funds. North Carolina, Virginia and West Virginia have made practically all roads, local as well as trunk-line, state highways.

It was logical that the development of state highways should be followed by plans for making the main state roads parts of a coordinated national highway system, and in 1916 Congress passed a Federal Aid Road Act by which an appropriation of $75,000,000 was made for aiding the states, during the succeeding five years, in improving roads approved by the United States Secretary of Agriculture. The United States Bureau of Public Roads was established in the Department of Agriculture; and, as has been explained, Congress has provided liberal aid to the states for the construction and improvement of the component parts of a general system of Federal-Aid highways. To provide employment during a prolonged business depression, large allotments have been made from relief funds placed at the disposition of the President. To a considerable extent Federal aid has been given for secondary rural roads as well as for major state highways; and in several instances Federal funds have also been granted for the in-city portions of the state highways that enter or pass through large cities.

Highway policy has developed from one shaped by local governmental authorities to one determined by the states, and now to one that is largely and increasingly influenced by the Federal government. This evolution has largely resulted from the application of mechanical power to highway transportation, and the rapid increase in the use and efficiency of automobiles, busses and trucks which have made the public highways not merely the means of local travel and transport, but business facilities for the extensive services of transportation-for-hire by common and contract carriers and for the still larger use of private carriers in connection with production and with the distribution of their products or wares. This use of the highways by common, contract and private carriers is of advantage to the public as well as to the carriers who profit thereby.

The question of public policy involved is how, and from whom, should the funds be obtained—now amounting to much more than a billion dollars a year for the United States as a whole—to create, develop and maintain the highways. The locally-used highways of the "horse and buggy" days were provided at the expense of local property owners. Today the Federal Government has a tax on gasoline and the states have automobile registration fees and gasoline taxes. Today the larger share of the expenses connected with state highways is borne by the users who pay automobile registration fees and gasoline taxes. A part

of the general tax receipts of many states is also devoted to supplementing the revenues derived from automobile registration fees and gasoline taxes. Numerous states also have constructed or improved highways by borrowing funds, the payments of the principal of the debt and of interest thereon being made from tax receipts. Local highway costs are in most instances borne mainly by local tax payers.

Doubtless there will be general approval of the principle that those who derive benefits from the highways should contribute to the funds required for providing the highways, and proportionately to the benefits received. There has been no better statement made of how this principle should be applied by the states in securing funds for highway purposes than was made by the Joint Committee of Railroad and Highway Users. This Committee was organized in the autumn of 1932 and was composed of six railroad officials selected by the Association of Railway Executives and of six men chosen by the National Highway Users Conference. The conclusion reached by this Committee was that

> Motor vehicles should pay the entire cost of the state highway system. They should also pay a part of the cost of county and/or township highways, that part to be determined by the extent to which such county and/or township highways are in general rather than local use. Furthermore, motor vehicles should contribute in part to the cost of arterial routes through cities. The classification of highways between those of general use and those of local use, and the determination of the extent to which special motor vehicle taxes should be used to pay part of the cost of arterial routes through cities, should be made by the authorities in each state in the light of its local conditions.

The other major phase of state and Federal highway policy is concerned with government regulation of the use of highways and of the carriers that operate upon them. Public policy concerning both state and Federal regulation of highway transportation and carriers has become fairly definite and is being carried out to an increasing extent by appropriate legislative and administrative action. There was and could be no question as to the power of the states to apply to intrastate common carriers upon the highways the same measure of regulation that was applied to carriers by rail, but until the Texas Motor Carrier Act of 1931 was validated by the United States Supreme Court [1] there was doubt

[1] In its decision of the cases of Sproles v. Binford, 286 U.S. 397, and Stephenson v. Binford, 287 U.S. 251.

as to the extent of the authority of the states over contract and private motor carriers and over the use that might be made of the highways. Those doubts, however, were fully removed when the court stated in deciding the Stephenson *v.* Binford case that

> It is well established law that the highways of the State are public property; that their primary and preferred use is for private purposes; and that their use for purposes of gain is special and extraordinary, which, generally at least, the legislature may prohibit or condition as it sees fit.

While the regulation of motor carriers by the several states still varies in scope and character, it is being exercised in increasing measure, year by year, especially over contract and private carriers. Since the enactment of the Federal Motor Carrier Act, approved August 9, 1935, state legislation has been influenced by that statute. It is to be hoped that eventually intrastate motor transportation and carriers may be subject to like regulation in all states; that the laws of the states and federal statute may be based upon the same principles, and may provide for like administrative action in the enforcement of regulation.

The power of the Federal Government over interstate commerce gives it full authority to regulate all carriers engaged therein, those by highways, waterways and airways, as well as those by rail; and by the 1935 Act, just referred to, Congress has provided adequately for the regulation of interstate motor transportation and carriers. The principles underlying railroad regulation have been applied to motor carriers, with such variations in statutory provisions as are appropriate to meet the conditions peculiar to highway transportation. Moreover, by the Act of 1935, provision has been made not only for the regulation of motor carriers but also for bringing about a better adjustment of the relations of rail and motor transportation and carriers with each other. The statute marks progress towards the definition and adoption of a national policy applying alike to the several parts of a coordinated system of transportation.

The goal of a general national transportation policy was, also, brought nearer when Congress adopted the Civil Aeronautics Act, approved June 23, 1938, which provides for the promotion and comprehensive regulation of air transportation by an Aeronautic Authority with the cooperation of a technically equipped Administrator and an Air Safety Board. From 1926 to the present the Federal Government has con-

cerned itself with safety in air transportation, the technical development of equipment and facilities, and with locating and equipping air routes. This work, which, from 1926 to 1938, was done by the Bureau of Air Commerce of the Department of Commerce, has been transferred to the Civil Aeronautics Authority to give administrative unity to activities connected with the supervision, promotion and regulation of air transportation. For a similar reason, the authority to fix rates of pay for the transportation of air mail, formerly vested in the Interstate Commerce Commission, has been transferred to the Civil Aeronautics Authority.

The unification of government agencies having jurisdiction over, or duties connected with, aeronautics was desirable and will be of advantage to air commerce and carriers, but whether the unified jurisdiction should have been vested in a separate authority or in an aeronautics division of the Interstate Commerce Commission is, at least, doubtful. Congress undoubtedly acted wisely in placing with that Commission the regulation of motor carriers, and, if jurisdiction over air transportation and carriers had also been given to the Commission, there might have been greater coordination, not only in administrative regulation but also in the services of rail, road, and air carriers. Presumably it was thought that the problems and duties connected with the technical supervision and promotion of air transportation equipment, and with the construction and improvement and inspection of line and terminal facilities, together with the regulation of carriers and services, constituted a combined task that could be performed better by a special aeronautic authority than by an air transportation division of the Interstate Commerce Commission. It would, however, be possible to set up as a part of a reorganized Interstate Commerce Commission a body with the necessary technical equipment and administrative organization. As will be pointed out presently, the unification of the agencies by which the several kinds of carriers are regulated is essential if a satisfactory national transportation policy is to be adopted and made effective.

Transportation and carriers by water are as yet but partially and inadequately regulated by the government. The extent and nature of the Federal regulation of carriers by water engaged in the domestic commerce of the United States have been stated in Chapter 44. By the Shipping Act of 1916, and the Intercoastal Shipping Act of 1933, as amended by the Shipping Act approved June 23, 1938, the United

States Maritime Commission has authority over the maximum and minimum rates of intercoastal common carriers and like authority over the charges of common carriers in the coastwise services. Only the maximum charges of common carriers on the Great Lakes are subject to commission regulation.

The government control of rates, although important, is only a part of effective regulation which must begin with requiring a carrier proposing to begin services to secure from the regulatory authority a certificate of public convenience and necessity, and must include authority over the accounts and the financial practices of the carriers concerned. Coastwise and intercoastal carriers would be benefited by government regulation that required carriers entering the service to obtain certificates of public convenience and necessity, because such regulation would assist in avoiding an excess in transportation facilities and services and aid in preventing intercarrier competition from becoming destructive. Moreover, both quality of service rendered and the prosperity of the coastwise and intercoastal carriers, as well as that of the railroads with which they compete, are dependent upon the establishment and maintenance of an equitable relationship between the charges of the carriers by water and rail and upon the coordination of services and facilities.

Transportation and carriers upon inland waterways other than the Great Lakes are practically without government regulation. Large and increasing expenditure of public funds is being made for river improvements and canal construction and operation. Some of these waterways thus provided and operated at public expense are used mainly, others largely, not by carriers that serve the public, but by contract and private carriers that use the public waterways in the conduct of their private business enterprises. Moreover, the government is operating the Federal Barge Line on the Mississippi, Missouri and Warrior Rivers and on the Illinois and Michigan Canal with facilities that have been provided mainly at public expense, those served paying only for current expenses for operation and maintenance of floating equipment.

There is no manifest reason why the principles and policy of government regulation that have been applied to other kinds of transportation and carriers should not be adopted for carriers by water, inland and coastwise. Moreover, as regards the free use of inland waterways provided, maintained and operated by the Federal Government or the States, was not the Mississippi Valley Committee correct in the con-

clusion it reached in 1934, as the result of its impartial investigation, that "Generally speaking, reasonable charges should be levied on new projects" and that "The policy should be generally to charge something where special services or special facilities are provided?"

PRINCIPLES AND FUTURE OBJECTIVES

A discussion of the principles and provisions of a national transportation policy necessarily involves a consideration of the emphasis that should be placed upon competition both among the carriers performing a particular kind of transportation and among the several kinds of carriers with each other. One purpose of transportation regulation has always been, and now is, the prevention of the undue limitations of competition by monopoly or "combinations in restraint of trade or commerce." As railroads developed from small to large systems, as these enlarged systems entered into agreements concerning the pooling of traffic or earnings and their rates on competitive business, and as the railroads demonstrated their superiority over rivers and canals for practically all kinds of transportation services, the public naturally adhered to the policy of checking railroad combinations and of keeping the railroads dissociated from competing waterways. For several decades preceding the entry of the United States into the World War and the temporary government operation of transportation facilities, railroad monopoly was considered a danger to be guarded against; but since 1920, and particularly during the past decade, the government's major problem has not been to prevent transportation monopoly but to keep within nondestructive limits interrailway competition and the competition of the railroads, highways, and waterways with each other. The revival and expansion of transportation upon waterways, which began about 30 years ago, and the phenomenal increase in automobile and truck transportation, particularly during the adverse business conditions that have prevailed since 1929, have not only made general and intensified competition, but have given it, especially for many railroads, the characteristics of a struggle for existence.

The question the public is now asking is not how can we maintain competition within each field, and among the several different agencies of transportation, but how can we bring about greater cooperation of carriers and more coordination of their facilities and services. It is be-

lieved, however, that while dissociation should give way to coordination, competition of railroads with each other and with motor and water carriers may give each carrier and each agency of transportation the incentive necessary to the improvement of facilities and to greater economy and efficiency of services. The statutes under which the railroads and the motor and air carriers are now regulated make careful provision for the continuance of competition. The government in regulating transportation has undertaken the four-fold task of promoting coordination, permitting consolidations when approved, continuing competition in and among the several agencies of transportation, and of so regulating the relation of carriers as to make competition a beneficial incentive. The task is a difficult one that may require some time for accomplishment.

The objectives to be attained by a national transportation policy for the United States includes, first of all, the continuance of private ownership and operation. Government regulation when accompanied by public aid may be followed by the partial and, eventually, the complete monopolization by the government of some kinds of transportation. In some countries government ownership and operation of the railroads, and possibly of water and air transportation, may be advisable or necessary; but in the United States there is an abundance of private capital, private initiative is strong, corporate enterprise is highly developed and can carry on business activities with efficiency and economy.

The national transportation policy must, also, have for its objective the adequate and appropriate regulation of each of the several kinds of transportation and carriers, those by rail, road, pipeline, waterways, and airways. This objective has not yet been fully attained in the United States, especially as regards transportation and carriers by water. For the protection of the public interest and for the promotion of the development of a well-balanced transportation system, like principles of regulation should be applied to each agency or kind of transportation with such modifications in statutory provisions as are required by the differences in the characteristics of the facilities and services regulated. Pending legislation for regulation of inland waterway carriers should be enacted.

A third objective to be attained by a national transportation policy is the development of a coordinated general transportation system comprising all the several agencies brought together as complementary as

well as competitive parts of a unified organization. The attainment of this goal is contingent upon the adoption of a consistent and common policy of government regulation regarding each part of the coordinated system. Without such common regulation it will be impossible to establish a really complementary and cooperative relationship among the competing agencies of transportation, each rendering the services it can perform with greater efficiency and economy.

ATTAINMENT OF A NATIONAL TRANSPORTATION POLICY. CHANGES REQUIRED IN PRESENT REGULATION

To bring about a coordinated and integrated national system of transportation will require some changes in the government's policy regarding the regulation of railroads, highways, and waterways, and also a greater realization of the importance of dealing with each kind of transportation and carriers as part of a single system.

The Transportation Acts of 1920 and 1933 should be so amended as to remove the obstacle to the consolidation of railroads by voluntary procedure of the carriers subject to regulation by the Interstate Commerce Commission. It would also be well to fix a statutory period within which the financial reorganization of insolvent railroads may be completed, the statute to provide that, if the desired consolidation or grouping has not been completed by the end of the period, the process shall be completed by such compulsory action by the Government as may be necessary. The statutory mandate as to the regulation of railroad rates and fares and thus of the revenues of the railroads should be so changed as to make it obligatory upon the Commission, so far as possible, to fix rates and fares that will yield the carriers a fair return, over a period of fat and lean years, upon the value of the property used in serving the public, the rate of return during prosperous years being enough above a normal average return to enable the carriers to accumulate a surplus reserve that can be drawn upon when adverse business conditions reduce, below normal, the traffic and revenues and the return on investment. Moreover, to make these statutory changes effective in establishing and maintaining the financial stability of the railroads, it will be necessary to modify the present governmental policy concerning highways and waterways.

It is important to emphasize the necessity of regarding highways, and of developing and regulating them, as a part of a national transportation system comprising several interrelated agencies. The present regulation of interstate motor transportation and carriers, as provided for by the Motor Carrier Act of 1935, is based upon sound principles and is producing good results. The construction and improvement of highways proportionate to traffic needs (but not in excess thereof) should be the work of the states and local governments with appropriate Federal guidance and cooperation. The cost of road building and maintenance should, however, not be borne in any substantial amount by the general tax-paying public, but by those who benefit from having roads adjacent to their property or from using the highways for travel and traffic. It is generally conceded that highway costs should be allotted among beneficiaries proportionately to the benefits received; and it is also generally admitted, except by some of those directly concerned, that, in most states, contract and private carriers, who use the public highways as facilities for the conduct of business activities, do not bear their proportionate share of the expense of providing the facilities used. Transportation and carriers upon the highways, at least some of such carriers, have a part of the costs borne by the public, while those who use the railroads must pay the entire cost of service. This places the railroads at a disadvantage in competing with the highways.

The future transportation policy of the United States should provide for a regulation of transportation and carriers by waterways that is similar in scope and character to that applied to other transportation and agencies. Inland waterways should be improved or constructed as they are needed, and not for other reasons. Appropriate charges should be made for the use of facilities provided, maintained, and operated at public expense. Regulation of carriers by water should preferably be by the same authority that has jurisdiction over the alternative and competitive agencies, the highways and the railroads.

Airways have become a definite and essential part of a transportation system. Although the passenger and other traffic of the airlines is increasing, their services are not yet upon a self-supporting basis. Temporary government aid of air transportation is necessary and is justified, partly because of the value to the public of rapid communication by air mail, but much more because airways and aviation have become an indispensable part of military defense. Expenditures for military pur-

poses are to be deplored, but, as regards public outlays for aviation, there is the consoling consideration, that funds devoted to airways and the promotion of their use yield good returns in social benefits.

When a truly national transportation policy has been attained, sound principles of adequate and appropriate government regulation will be applied to each kind of transportation; and the regulation, and the public aid given, will be such as to make the several agencies correlated parts of one integrated system. This task can be most effectively and satisfactorily accomplished by one general administrative authority including four cooperative divisions, one each for railroads, highways, waterways, and airways. "In union there is strength," common purpose, and harmonized action.

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