RAIL FREIGHT CAR SHORTAGE POLICY: A CRITICAL REVIEW

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ABSTRACT

RAIL FREIGHT CAR SHORTAGE POLICY:
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By

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Railroads have suffered from a declining share of intercity freight tonnage during the past three decades. Freight car supply has been a recurring problem confronting the industry. The federal government recently became directly involved in evaluating proposed financial commitments for freight car purchases as one incentive to aid the ailing railroad industry. The government's attempted solution has centered on expenditures to augment the national freight car fleet. Little attention has been given to the possible effects of improved utilization on freight car shortage problems.

This research investigated the potential impact of improved freight car utilization upon freight car shortages. The underlying hypothesis was that the national freight car fleet may contain a sufficient number of cars. Perhaps a shortage of cars does not, or never did, exist. Rather, car underutilization has created car shortages.

The research methodology was an historical review of measures employed to improve car utilization during critical shortage periods. Attention focused on three major utilization-improving measures: demurrage, per diem, and car service orders. Each measure was traced from its origin and then evaluated as a utilization improvement measure.

The major results of the research indicated the following:

1. Demurrage rate levels were not high enough to discourage user detention. Data suggest that low demurrage rates encourage commodity storage in freight cars as opposed to private warehousing.

2. Per diem rates divided the railroad industry. Disagreement over the per diem charges has never been resolved. Regulating per diem authority was absent and United States Congresses showed no unified desire to resolve the issue. Contemporary ICC per diem prescriptions showed no utilization-improving benefits. Most importantly, there is no clear consensus on the per diem objective to guide decisions. There is a conflict between railroad legal obligation and ability to control freight cars, which must be resolved.

3. Car service orders have not improved car utilization in the long run. Railroad productivity continued to decline. Possible utilization improvements, however, were discovered from the nature of past car service orders. The improvements resulting from proper use of service orders would be greater than that obtainable from any suggested new car expenditure.

The research supported the hypothesis that a freight car shortage does not exist. Each period of historical shortage experienced gross operating inefficiencies, inferring that a freight car shortage never existed. This contention was further supported by other underutilization facets. Current attempts to build an increased national freight car fleet should be delayed until possible utilization improvements are measured. Any federal financial assistance to augment the national freight car fleet is a disservice to the public interest and represents a patent waste of resources.

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Pat James Calabro

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Dedicated to my family

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CHAPTER I

INTRODUCTION

Railroad freight transportation enjoyed prosperity and aided the growth and economic development of the United States throughout the end of the nineteenth and the first part of the twentieth centuries. The railroads' ability to transport large tonnage shipments long distances at low cost fostered expanded frontiers for industrialization and community formation. The dominance of railroads in early commercial development is evidenced by the fact that 74.9 percent of all intercity ton-mileage was hauled by railroads in 1929. The past three decades have experienced a considerable decrease in overall railroad participation in intercity freight transportation. By 1971, market share dropped to 38.6 percent. A review of percentage distribution of intercity freight traffic for major transporters at select intervals is illustrated in Table I-1.

Problems increased as railroads became less dominant in the country's freight transportation network. This once-prosperous industry currently is confronted with

TABLE I-1

PERCENTAGE DISTRIBUTION OF INTERCITY FREIGHT TRAFFIC BY MODE, SELECT YEARS
(Revenue ton-miles)

Year	Rail	Motor	Water	Pipeline	Air
1929	74.9	3.3	17.4	4.4	--
1939	62.4	9.7	17.7	10.2	--
1949	58.4	13.8	15.2	12.6	--
1959	45.0	22.3	15.2	17.5	--
1960	43.7	22.4	16.6	17.2	.1
1965	43.0	22.5	15.6	18.8	.1
1970	39.8	21.3	16.4	22.3	.2
1971	38.6	21.9	16.0	23.3	.2

Sources: Statistical Abstract of the United States
Yearbook of Railroad Facts

eight railroads in bankruptcy and reorganization proceedings.[1] Overall, railroads are seeking abandonments of allegedly unprofitable branch lines, certain to adversely affect economic conditions of the involved communities and possibly increase transportation costs in the impacted areas.

The federal government has become highly concerned with restoring the railroad industry to a healthy condition. The Nixon administration suggested completely restructuring Northeastern railroad operations into three or four major systems.[2] The Interstate Commerce Commission, hereinafter known as the ICC, suggested a 1 percent tax on all surface freight transportation to

rehabilitate ailing railroads.[3] The proposed Surface Transportation Acts of 1972 and 1973 included large financial aid provisions for the railroads.[4] At the present time, no evidence exists that government policy favors nationalization as opposed to recovery on a private-enterprise basis.

Freight Car Supply

Among the major problems facing the railroad industry is the freight car shortage situation. The first direct financial involvement of the federal government in car supply was proposed in 1950.[5] The recommendation was for a $250 million appropriation for government-owned freight cars to augment the national car fleet. In 1957, two congressional proposals recommended a $500 million appropriation to permit low-interest railroad loans on funds deployed for new equipment purchases.[6] Critical freight-car supply problems throughout the latter 1960s precipitated four congressional proposals in 1971.[7] In one, 10,000 boxcars were proposed for purchase at a $120 million cost to be maintained by the United States for shipments tendered by the Department of Defense; two others proposed augmentation of the national car fleet in emergencies or short-supply periods at a $3 billion cost; the fourth proposed to insure railroad debt up to $3 billion on borrowed funds used for new-car purchase. As

typical of the 1950s, none of these proposals passed the legislative process. The proposed Surface Transportation Acts of 1972 and 1973 specifically included a railroad-debt insurance fund up to a $3 billion maximum. Neither bill was approved and the car supply situation continues to deteriorate.

Freight Car Supply Background

Freight car supply problems precede the twentieth century. Railroad pricing and freight car supply favoritism were prime motivating forces leading to the federal regulation of railroad operations through the Act to Regulate Commerce in 1887. The first complaint heard by the ICC after its formation in 1887 concerned a freight car supply problem.[8] The Hepburn Act of 1906 made railroad common carriers responsible to provide freight cars for transportation service.[9] The ICC has conducted numerous car supply deficiency investigations since its inception, the first, in 1907, because railroads were not fulfilling their legal obligation under the Hepburn Act.[10] Notwithstanding the many investigative proceedings throughout the century, the problem remained and has intensified to the point wherein the only resolution appears to be direct government involvement.

Historically, car supply investigations focused on the aggregate fleet size in an effort to determine the

additional cars required to relieve the problem. It has been noted that the underutilization of the fleet has contributed to the shortage. Past and current measures, however, have primarily concerned additional cars with little emphasis on the potential improved utilization of the existing fleet. Additional utilization would naturally diminish new-car requirements, thereby minimizing the investment of fixed capital.

Research Purpose

This research included an historical investigation of the freight car supply problem. Critical shortage periods from the first crisis forward were researched. Transportation problems leading to supply difficulties were noted. Attempts to improve the situation were examined with a view toward longer range and permanent improvement of today's fleet utilization. The historical impact of selected measures was evaluated in terms of potential contemporary national policy. The basic assumption of the research is that recommendations leading to improved utilization would be in the public interest.

Effectiveness of past programs can only be bench marked in terms of freight car supply and utilization. In this study, utilization is the critical area of research concern. Obstacles preventing improved

utilization were noted so that future policy may benefit by removal of major impediments.

Research Results

As a result of this research, recommendations offering potential improvement in rail car utilization are identified. Examples of gross underutilization, particularly during shortage periods, are isolated and substantiated based upon published records. Illustrations are developed to demonstrate the extent of immediate shortage relief obtainable from improved freight car utilization. It is unlikely that a "true" car shortage has ever existed in railroad transportation. The evidence leads to the conclusion that a freight car shortage currently does not or has not recently existed. The suggested utilization improvements and obstacle elimination hypotheses have the potential to alleviate contemporary supply problems and defer any direct governmental freight car supply involvement.

Organization of the Study

This study is organized in five parts. In Chapter II, the history of freight car shortages is traced to its earliest origin. Legislation stipulating railroad car-supply responsibility is described. Critical car supply periods are isolated and related environmental

causal characteristics described. An appraisal is provided concerning continually recurring factors causing freight car shortages.

The next three chapters review major methods traditionally utilized to improve freight car availability. Obstacles inhibiting the effectiveness of these methods are presented. Next, an appraisal of each method is given. The three methods explored are as follows:

Demurrage:	the fee paid per car per day by users for rail-car detention beyond established time limits. Higher demurrage fees are expected to encourage more efficient user rail-car handling and discourage lading storage in freight cars.
Per Diem:	the rental paid by the using railroad to the owner. Higher per diem is expected to encourage maximum rail-car utilization and also expedite freight car turnaround to owners.
Car Service Orders:	temporary ICC directives which vacate contemporary car service rules prescribed by the Association of American Railroads, hereinafter known as the AAR. The ICC directives are issued in emergency situations and are intended to increase efficiency and utilization in the public interest.

The final chapter presents conclusions of the study and recommendations concerning the formulation of revised railroad operating policy. The study concludes with recommended areas for continued research.

Research Methodology

The major research orientation was library research. The study concentrated on the material available at the library systems of Michigan State University, East Lansing, Michigan; the University of Michigan, Ann Arbor, Michigan; Transportation Center Library, Northwestern University, Evanston, Illinois; Michigan State Libraries, Lansing, Michigan; and Cleveland Public Library, Cleveland, Ohio. In addition, the Center for Research Libraries services were employed to secure relevant materials not available at the above-noted libraries. The major source references were ICC Annual Reports, I.C.C. Practitioners' Journals, publications of the American Railway Association, American Railway Car Institute, Association of American Railroads, Railway Systems and Management Association, Transportation Association of America, and the United States Departments of Agriculture, Commerce, and Transportation.

Personal interviews were conducted with representatives of the ICC and several selected rail carriers. Correspondence and telephone conversations transpired with other representatives of the ICC, rail carriers, and several associations.

Limitations of the Study

Railroad freight transportation problems are many and varied. This study was not intended as a panacea to all railroad problems. Research was restricted to evaluation of selected measures available to improve freight car utilization.

This investigation was limited by its inability to conclusively evaluate effectiveness of any specific improvement measure given various economic factors. Many economic factors impinge on the utilization improvement measures. Each economic factor can have a varying degree of effect on improvement measures in different time periods. Thus, the interaction of economic factors and improvement measures could not be related. Also, effectiveness of any combination of improvement measures could not be evaluated and was excluded from the study. The many variables which interact with potential improved utilization, therefore, were not considered in this study.

The study's primary focus was on freight-car utilization. Any ramifications to the freight car's utilization, such as judgmental scarce resource use, were excluded from the study.

FOOTNOTES--CHAPTER I

[1]Association of American Railroads, Information Letter, No. 2056 (February 14, 1973), p. 4. The railroads are: Boston and Maine, Central of New Jersey, Erie Lackawanna, Lehigh and Hudson River, Lehigh Valley, New Haven, Penn Central, and Reading.

[2]"Nixon Proposes Railroad Freight Cutback and Restructuring of Lines in Northeast," Wall Street Journal, March 27, 1973, p. 4.

[3]"ICC Offers Way to Save Railroads of the Northeast," Wall Street Journal, March 26, 1973, p. 4.

[4]Association of American Railroads, Information Letter, No. 2060 (March 14, 1973), p. 1.

[5]U.S., Library of Congress, Legislative Reference Service, Digest of Public General Bills, 81st Congress, 2nd Session (Washington, D.C.: Government Printing Office, 1951), pp. 195-96 (H.R. 9480).

[6]U.S., Library of Congress, Legislative Reference Service, Digest of Public General Bills and Selected Resolutions, 85th Congress, 1st Session (Washington, D.C.: Government Printing Office, 1957), pp. E537, A174 (H.R. 9597, S.2906).

[7]U.S., Library of Congress, Legislative Reference Service, Digest of Public General Bills and Selected Resolutions, 92nd Congress, 1st Session (Washington, D.C.: Government Printing Office, 1971), pp. A180, A246-47, A247 (S.1415, S.1729, S.1730, S.1731).

[8]U.S., Interstate Commerce Commission, First Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1887), p. 86.

[9][Hepburn Act] Statutes at Large, XXXIV, Chap. 3591 (1906), P.L. 337.

[10]U.S., Interstate Commerce Commission, "Car Shortage--Insufficient Transportation Facilities," Interstate Commerce Commission Reports: Decisions of the Interstate Commerce Commission of the United States, November, 1906-December, 1907, XII (Washington, D.C.: Government Printing Office, 1908), pp. 561-71.

CHAPTER II

DEVELOPMENT OF THE FREIGHT CAR SUPPLY PROBLEM

Transportation problems date from the formation and growth of the railroad industry in the nineteenth century. Railroads were able to transport large tonnage shipments long distances and consequently were in a position to affect the country's economic activity. The railroads were unregulated and allowed competitive advantage to some of their more favored patrons. The history of the Granger Movement in the second half of the nineteenth century is replete with situations wherein favoritism was shown to select companies in the form of lower rates to more distant points; higher rates were assessed to smaller companies for shorter distances.[1] Pricing discrimination commonly is emphasized as the motivating force leading to the Act to Regulate Commerce in 1887.

The freight car supply problem has an early role in history. Railroads favored preferred patrons with car supply and withheld cars from others. For example, a

New York State investigation revealed favoritism to Standard Oil Company by the New York Central and Erie railroads while other shippers waited three to four months for tank cars.[2]

The Act to Regulate Commerce, although in vague terminology regarding some aspects of the regulation authority, created the ICC and made it responsible to correct railroad transportation abuses. The first ICC docket was a complaint filed on April 18, 1887, against the Saint Paul, Minneapolis, and Manitoba Railroad Company for failure to furnish cars.[3] Five other car supply complaints were received that year.[4] In 1888, the ICC disclaimed authority to require railroads to supply freight cars when requested.[5] Complaints citing favoritism by the carriers continued through the 1890s and into the twentieth century.[6]

Freight car supply responsibility then was detailed in the Hepburn Act of 1906. The ICC, as enforcement agency, was to insure that the act's provisions were followed. Prior to that time, the ICC's authority was restricted to discrimination prevention. Failure to supply freight cars now became a possible violation of the Hepburn Act.

Critical Periods of Car Shortage

This present study has revealed several critical periods which required direct governmental involvement

to placate the demanding railroad patrons. The first period occurred during the early 1900s. The ICC cited increased production, high prices, and a general level of prosperity as causes of the car shortage[8] and then conducted its first formal car supply investigation.[9] It found existing grievous conditions, such as the lack of coal in a blizzard situation[10] and great economic loss in the wheat industry.[11] Grave railroad operating inefficiencies were cited as the cause of the critical situation.[12] The ICC called for remedial operational improvement,[13] and also requested congressional authority to affect car service.[14] No further action was taken by Congress because of the ensuing business retardation.

The World War I era experienced the next critical period and the ICC conducted its second car supply investigation.[15] The ICC described the problem in the investigation's report, stating as follows:

> In some territories the railroads have furnished but a small part of the cars necessary for the transportation of staple articles of commerce, such as coal, grain, lumber, fruits, and vegetables. In consequence mills have shut down, prices have advanced, perishable articles of great value have been destroyed, and hundreds of carloads of food products have been delayed in reaching their natural markets. In other territories there have been so many cars on the lines of the carriers and in their terminals that transportation service has been thrown into unprecedented confusion, long delays in transit have been the rule rather than the exception, and the operation of established industrial activities has been made uncertain and difficult.[16]

The disproportionate traffic flow from the Southern and Western lines caused the car supply difficulty, resulting in large car accumulations in the Northern and Eastern parts of the country. The ICC ordered mandatory observance of car service rules which provided for the return of cars to, or in the direction of, the owning carriers; previously this procedure had been voluntary.[17] Commissioner Clark's dissenting opinion was based on the ICC's lack of authority to so order, in view of the fact that the ICC expressed its inability to affect operations in several of its annual reports.[18]

Neglect of car service rules was confirmed by the Car Service Commission of the American Railway Association, predecessor of the AAR, which found over 40,000 rule violations during June, 1916.[19] The ICC then requested car service authority in its 1916 annual report to Congress.[20] This request was granted in the Esch Car Service Act of 1917.[21] It allowed the ICC to establish car service rules during emergencies, stating as follows:

> Whenever the Commission shall be of opinion that necessity exists for immediate action . . . at once, if it so orders, without answer or other formal pleading by the interested carrier or carriers, and with or without notice, hearing, or the making or filing of a report, . . . to suspend the operation of any or all rules, regulations, or practices then established with respect to car service for such time as may be determined

> by the Commission, and also authority to make such just and reasonable directions with respect to car service during such time as in its opinion will best promote car service in the interest of the public and the commerce of the people.[22]

The Bureau of Car Service was established on July 9, 1917, to transmit car service directives. The heavy fall traffic and the increased volume of war shipments led to further service deterioration and the federal government assumed control of the country's railway and railway-water systems on December 26, 1917.[23] A Director General of Railroads was appointed under the Railroad Administration and the railroads were operated as a unified transportation system. The increase in car utilization efficiency was attributed to this unification and the Railroad Administration's unilateral actions.[24] The federal government maintained control until March 1, 1920.

With the exception of car shortages attributed to particular circumstances, such as industry strikes or congestions caused by floods, and the seasonal fall harvest car supply difficulties, no further car supply problems existed until the era following World War II. The war years contained instances of car shortages, but the magnitude of the problem was far less than expected. The phenomenon of railroad freight operations during World War II was widely acclaimed. The utmost cooperation of the shippers, receivers, and carriers to improve

freight car utilization was cited as the major factor achieving the excellent performance. Professor Stover stated as follows:

> Complete co-operation among the railroads was essential as they faced the demands of war in December, 1941. The depression thirties plus the competition of rival transport agencies since World War I had forced a substantial decline in railroad facilities. As compared to the end of 1916, American railroads at the end of 1941 had 25 per cent fewer freight cars, 30 per cent fewer passenger cars, and 32 per cent fewer locomotives. The number of rail employees in 1941 was down nearly a third from 1916. However, average freight-car capacity and average locomotive tractive effort had grown significantly in the quarter-century. Thus the 1,703,000 freight cars in 1941 had a total carrying capacity (85,682,000 tons) only 7 per cent below those of 1916, and the 41,771 locomotives actually had an aggregate tractive effort slightly above that available in the earlier year.
>
> With a total carrying capacity certainly no larger than that of World War I, the nation's railroads in World War II moved a total traffic of much greater volume. The total ton-mileage of freight carried in each of the four war years (1942 through 1945) was more than 50 per cent greater than in 1918, and in the peak year, 1944, the 737,000,000,000 ton-miles was 82 per cent above the top year of the earlier war.[25]

The ICC credited the carriers in its annual reports to Congress, stating in 1941 as follows:

> During the first 10 months of 1941, the railroads handled the largest amount of traffic moved in any comparable period since 1930, when the volume was only slightly greater. The number of freight cars available to move the traffic in 1941 was approximately 73 percent of the number available in 1930. To move the same amount of traffic with 27 percent less cars necessitated better utilization. The average turn-around per-car trip in September 1930 was 15.7 days, whereas the average in September 1941 was 12.5 days.[26]

and then in 1943 as follows:

> Although much credit must be given to the various transportation agencies for their efficient handling of the 1942 and 1943 traffic, the volume of that business has been and is so large that no such performance could have been attained without close cooperation among carriers, shippers, State and local governments, and various Federal Government agencies.[27]

Data presented in Table II-1 details freight movements during the two war periods.

Cooperation among all users, carriers, and governmental agencies was not the sole contributor to the increased efficiency. The Bureau of Service issued many orders to avoid crises. Through this medium, the Bureau increased demurrage rates, rerouted traffic to avoid congested areas, directed empty-car flow, and allowed the substitution of available cars to haul commodities not normally permitted in the car types that were in oversupply.

Freight car supply problems next occurred at the war's termination and the conversion to a peacetime economy. The war years' efficiency subsequently was hampered by labor strife, a depleted and aging car fleet, and operational inefficiencies. The ICC conducted two investigations in 1947. In 268 ICC 659, Increased Per Diem on Freight Cars, the per diem rate was increased to encourage prompt handling and car return to owners. The ICC's decision was reversed by the courts, a matter

TABLE II-1

SELECT RAILROAD OPERATING DATA FOR WORLD WARS I AND II ERAS
(Class I Railroads)

Year	Number of Freight Cars Owned	Revenue Freight Originated in Carloads in N.T.'s (000)	Total Revenue Carloads	Revenue Ton-Miles (000)
1917	2,302,059	1,264,016	N.A.	394,465,400
1918	2,325,673	1,263,344	44,592,089	405,379,284
1919	2,361,102	1,096,449	41,832,536	364,293,063
1920	2,322,122	1,255,421	45,118,472	410,306,210
1940	1,653,663	1,009,421	36,357,854	373,253,197
1941	1,703,304	1,227,650	42,352,127	475,072,001
1942	1,745,495	1,421,187	42,771,102	637,983,503
1943	1,756,343	1,481,225	42,439,951	727,075,495
1944	1,769,578	1,491,491	43,408,295	737,246,444
1945	1,760,297	1,424,913	41,918,120	681,000,757

Sources: Statistics of the Railways of the United States
Railroad Transportation
Railroad Car Facts

to be covered in Chapter IV of this work. In 268 ICC 687, Car Service--Freight Cars, the ICC issued service orders effecting expedient terminal operations and later rescinded its order upon the AAR's promise to effect the orders' requirements. This issue will be discussed in Chapter V.

The next crisis occurred during the latter part of 1950 and continued for the succeeding two years. The normal heavy freight car demand in the fall, coupled with increased commerce due to the Korean conflict, caused large car shortages. The ICC issued service orders increasing demurrage, expediting terminal operations, and ordering minimum loading weights.

The first Congressional bill requesting direct federal freight car involvement appeared in 1950. Representative Ellsworth introduced H.R. 9480 to the Eighty-First Congress, Second Session, providing for a Railroad Car Reserve Corporation within the Department of Commerce, with a $250 million capitalization to establish a car pool for use during national emergencies or temporary shortages.[28] After hearings were conducted by the Committee on Interstate and Foreign Commerce, as was typical of the 1950s, no further action was taken.

The business activity lull which followed the Korean conflict's termination was accompanied by an increase in railroad nonserviceable cars, a rising number

of freight car retirements, and an overall railroad efficiency decrease. Car supply problems existed from 1955 through 1957. Again, the ICC exercised its car service authority, ordering prompt car placing and pulling at industry locations, reducing free time allowed at port locations, and allowing car substitution for commodities other than that for which the car type in oversupply was designated.

Congressional representatives introduced two bills in 1957 designed to encourage railroads to augment their diminishing car supply. The Eighty-Fifth Congress, First Session, received H.R. 9597 and S.2906 on August 30, 1957.[29] Identically worded, both bills provided for a Railway Equipment Agency with an initial $500 million capitalization which would provide low-interest railroad loans for new car purchase. Neither bill was reported out of the committees.

A relative calm settled prior to the current, most prolonged car shortage period. The railroads' diminishing transportation role was a contributing factor to the lack of a national freight car crisis for approximately five years. The AAR cited the railroad freight participation decline, stating as follows:

> Between the years 1955 and 1963, the national economic produce increased by 25 per cent; railroad freight ton-miles increased not at all, the 1963 aggregate not quite equalling that of 1955.

> Between the same two years total corporate profits of all industries increased by 18 percent; railroad net income in 1963 fell 30 per cent short of equalling the net in 1955. Had it not been for more realistic depreciation allowances and the resulting income tax adjustments first authorized in 1963, even that disappointing financial showing would not have been attained; nor would it have been attained in the absence of the self-help measures adopted by the railroads to the extent that their limited resources permitted.[30]

Data illustrating railroad activity during this period is presented in Table II-2. The inter-city freight traffic distribution listed in Table II-3, illustrates the constant decline in railroad participation.

The Current Era

The railroad industry entered the longest period of freight car shortage problems thus far experienced in 1963; this period still exists. General business activity continued its acceleration, aided by the demands of the longest period of international strife in United States history. Labor-management difficulties, carrying with them concomitant freight car detention, were common occurrences. The aggregate freight car fleet continued to decline, as did the railroad distributive share of inter-city freight ton-mileage. Railroad operating performance showed no material improvement. The ICC freely exercised its emergency car service authority directed toward increased handling efficiency by increasing demurrage rates, reducing free time of cars

TABLE II-2

SELECT RAILROAD OPERATING DATA, 1955-1971
(Class I Railroads)

Year	Number of Freight Cars Owned	Revenue Freight Originated in Carloads in N.T.'s (000)	Total Revenue Carloads	Revenue Ton-Miles (000)
1955	1,698,814	1,396,339	37,636,031	623,614,866
1956	1,706,843	1,447,422	37,844,828	647,077,041
1957	1,745,721	1,380,327	35,500,148	618,193,517
1958	1,724,228	1,190,353	30,222,145	551,666,710
1959	1,676,386	1,232,201	31,014,549	575,528,773
1960	1,658,292	1,240,789	30,441,415	572,308,838
1961	1,604,241	1,193,740	28,583,780	563,360,761
1962	1,550,067	1,233,597	28,722,437	592,862,417
1963	1,512,306	1,285,060	28,866,619	621,737,176
1964	1,488,385	1,355,738	29,027,186	658,638,722
1965	1,478,005	1,387,423	29,247,637	697,878,030
1966	1,488,115	1,448,902	29,623,115	738,395,160
1967	1,482,161	1,407,628	28,083,751	719,497,949
1968	1,453,883	1,431,308	28,252,541	744,023,096
1969	1,434,824	1,473,457	28,291,939	767,867,099
1970	1,423,921	1,484,919	27,160,247	764,809,021
1971	1,422,411	1,392,000	25,260,858	739,403,930

Sources: Statistics of the Railways of the United States
Railroad Transportation
Yearbook of Railroad Facts

TABLE II-3

PERCENTAGE DISTRIBUTION OF INTERCITY FREIGHT TRAFFIC BY MODE, 1955-1963
(Ton-mileage)

Year	Railroad	Motor	Water	Oil Pipe	Air
1955	49.5	17.5	17.0	16.0	--
1956	48.4	18.4	16.2	17.0	--
1957	46.9	19.0	17.5	16.8	--
1958	46.0	21.0	15.6	17.4	--
1959	45.0	22.3	15.2	17.5	--
1960	43.7	22.4	16.6	17.2	.1
1961	43.4	22.7	15.9	17.9	.1
1962	43.1	23.8	16.0	17.0	.1
1963	43.1	23.8	16.4	16.6	.1

Source: Statistical Abstract of the United States

held at ports, and directing empty-car flow. Eighteen bills concerning the problem were introduced to the Congresses in session from 1963 through 1970.

The diminishing number of freight cars, illustrated in Table II-2, and the increasing complaints received by the ICC prompted another investigation in 1963. At the conclusion of the first stage of that study, the ICC voiced its impatience with the railroads' promises to correct the situation.[31] It continued the study, attempting to determine each railroad's ownership share of the aggregate car fleet. Progress of the study was retarded during the succeeding years because of the infusion of data related to specialized equipment and its capability, a subject discussed in the next section, and because of needed ICC authority to affect the per diem level, a subject treated extensively in Chapter IV.

Freight car supply problems continued through the remainder of the 1960s. The ICC issued service orders to combat congestion and inefficiency. The ICC judged the freight car supply inadequate in Ex Parte No. 241, Investigation of Adequacy of Railroad Freight Car Ownership, Car Utilization, Distribution, Rules, and Practices, and issued an order on September 3, 1969, which required all railroads to observe seven AAR car service rules. Some carriers objected to the decision

and resorted to the courts, a matter which still is pending at the time of this writing.[32] Interestingly, the ICC allowed for skepticism in the validity of its judgment in the 1969 annual report to Congress, stating in part as follows:

> The information submitted in the staff study indicated that much of the difficulty in providing adequate car service to shippers may not be in the number of boxcars but rather in their poor utilization.[33]

Railroad operations showed no material improvement during this period and service order violations resulted in penalty assessments against the carriers totalling $315,700 in 1969 and $569,425 in 1970.[34] Patrons provided ample evidence of unusually poor performance records of the railroads throughout this period.[35]

The United States Senate received four bills in the Ninety-Second Congress, First Session, in 1971, all directly committing large federal financial obligations to resolve the freight car problem. Senator James B. Pearson introduced S.1415 on March 30, 1971, which called for the construction of no less than 10,000 general purpose boxcars to be used to haul Department of Defense freight. A $120 million appropriation was requested.[36] Senator Warren Magnuson and twenty-three other United States senators introduced S.1729 on April 30, 1971,

which provided for a federal Fast Freight Systems Transportation Corporation, authorized to incur government-insured debt not exceeding $3 billion for general freight car purchase.[37] Senator Magnuson introduced S.1730 on April 30, 1971, which differed from S.1729 mainly in the corporation's organization. Otherwise, the two bills were similar.[38] Senator Magnuson also introduced S.1731 on April 30, 1971, which provided for the establishment of a federal Railroad Equipment Obligation Insurance Fund in an amount not to exceed $3 billion. The fund would be used to insure interest and principal on railroad loans made for freight car purchases.[39] Hearings were held on the above bills by the Special Subcommittee on Freight Car Shortages of the United States Senate's Committee on Commerce. Although none of the bills were reported out of Committee, they reflected the growing congressional impatience for a freight car supply solution.

The freight car supply clamor subsided during 1972, partly because of the decline in industrial activity. Spot shortages occurred during the peak harvest season, a perennial reoccurrence, and were met with car service orders relieving the spot crises. The major grain transaction between the United States and the Soviet Union in the fall of 1972 was expected to place a drain on transportation facilities. An inadequate car supply was predicted and materialized in the winter of 1973.[40]

Specialized Equipment

Freight car investigations usually center on the decreasing number of railroad-owned cars. Critics also cite the change in the fleet's composition with an increasing number of specialized cars replacing general purpose equipment.[41] The trend toward ownership of specialized equipment allegedly contributes to the overall supply problem because of a reduced number of all-purpose cars, such as the standard forty or fifty-foot boxcar with a wider variety of uses, to fill the needs of a greater majority of users. This topic has been reserved for special treatment because of its prominence in the growth of railroading and the United States economy, as well as the diatribes lodged against current tendencies.

History of Specialized Equipment

The formation of railroad lines took place in the early nineteenth century and was intended to provide turnpikes for travelers to counteract coach travel inconveniences. Shippers provided freight cars and railroads provided roadbeds, rails, and motive power. The growing freight traffic volume encouraged the railroads to provide all the facilities; this was the situation by 1845.[42] The first attempt to modify the crude, all-purpose freight car was made by the Pennsylvania Railroad, with the introduction of refrigerated cars to haul fresh meat from

Chicago to New York and Boston in the late 1850s.[43] A more efficient refrigerator car was developed by Mr. J. B. Sutherland of Detroit, Michigan, who received the first patent for such a vehicle on November 27, 1867.[44] Shippers returned to more specialized freight cars because of their desire to expand marketing territories. The dressed-beef industry received its start upon further perfection of refrigerator cars in the late 1860s. In his quest to expand the dressed-beef industry, Mr. Gustavus Swift requested the Grand Trunk Railroad to supply refrigerator cars in 1875 and, in the face of reluctance, purchased his own refrigerator cars to further develop the business. Stock car development met with similar railroad opposition and cars ultimately were developed to haul livestock in the early 1880s.[45] Railroads' attitude toward specialized equipment remained adamant when they refused to deviate from the normal practice of hauling barrels of oil in boxcars. During this time period, Standard Oil Company took the lead in the development and commercial use of tank cars.[46] Hopper cars were designed to carry coal, a major railroad freight commodity. Although hopper cars were used for this purpose during the middle of the nineteenth century, it was not until 1880 that all metal hopper cars were being built.[47] It was not until 1900 that the railroad

industry provided specialized equipment to any great degree. In that year, the Chicago, Burlington and Quincy Railroad set up a separate refrigerator-car division to stimulate refrigerated business. Its success encouraged other carriers to follow its direction and provide equipment peculiar to a particular industry.

The railroads made basic rolling stock modifications throughout the first half of the twentieth century. All freight cars which the railroads maintained and reported to the ICC were classified as following: box, flat, stock, coal, tank, refrigerator, and a small number of "others." At the middle of the 1950s, specialized cars were further subdivided and showed an increase in categories. The boxcar classification was split into a general bracket and a specialized or equipped category. The "coal" classification gave way to further subdivision into "gondolas," "open-top hoppers," and "covered hoppers." Automobile multi-level rack cars were added as a separate classification.[48] Design adjustment did not receive a separate record-keeping classification prior to that time.

Professor John F. Stover discussed the growth and diversity of specialized freight cars in 1970, saying as follows:

> The auto rack car was typical of the innovation and diversity found in recent freight equipment. A long generation ago, in the post-war 'twenties, the average freight car had a capacity of 40 tons and cost perhaps $2000 to build. Today, the average cost of new cars is around $15,000 to $16,000, and the average capacity is 80 tons. A typical railroad in the 'forties owned perhaps seven or eight kinds of freight equipment, while today it may own more than three dozen types of cars. . . .
>
> The new generation of freight cars has been tailored to meet the special or particular needs of shippers. Beyond the two fixed limits and standards of height of coupler and track gauge, almost any idea in car design was possible. The larger average size has also permitted heavier loading and "incentive" or lower freight rates. Whale-shaped new tank cars, often called Pregnant Whales, hold 30,000 gallons or more. High-cube box cars became so large as to almost cause clearance problems. "All-door" cars permitted easier loading and unloading. New special covered hopper cars were tailored to hold dry bulk loads of great variety: pumice, salt, cement, grain, dry acids, or ore pellets. The Southern's Big John grain cars were joined by the Southern 100, a four-section articulated hopper with 16 wheels and a capacity of 260 tons--more than half a million pounds. Another innovation is a stock car called a "pig palace" large enough to accommodate more than 300 hogs. Some specially equipped cars have schedules so certain that they permit industries to cut back their inventory. Such are the cars which carry auto parts in special racks and rigs to automobile assembly plants. The diversity of the new freight equipment and service was recently well described by Herman H. Pevler, president of the Norfolk and Western, when he said: "We are selling service the way a barber or a beauty shop sells--how do you want it? Plain or fancy, short or long, all the variations."[49]

The trend toward diversified and specialized equipment was praised by a subcommittee of the House of Representatives of the United States Congress in a 1972 report as follows:

1. One covered hopper holds approximately twice as much grain as a normal box car.
2. Both types of cars, despite significantly different capacities, load in about the same time.
3. Covered hoppers are self-unloading, generally in a matter of minutes, whereas box cars must be manually unloaded, an extremely dirty and time-consuming job for which labor is difficult to obtain.
4. Covered hoppers do not require coopering or other major repairs by the shipper prior to loading, as box cars often do.
5. Covered hoppers clean readily, often with a simple "hosing down" and do not arrive at a loading dock filled with trash and debris because paper grain doors and lining are not used, and
6. Covered hoppers virtually eliminate claims for leakage and weight loss.

. . . . . .

Cars which can unload 100,000 pounds of coal in 12 seconds or unload 100,000 pounds of ore in three seconds are now available. New types of container cars with specialized loading features are being introduced which make greater use of intermodal transportation. This trend should be encouraged.[50]

Perhaps the single most important development in car diversification resulted from the railroads' attempts to recapture volume losses back from the trucking industry. The "new" development was known as "piggy-back" service, or "trailer-on-flat-car" service (hereinafter known as TOFC). TOFC is a combination truck-rail freight movement wherein railroads haul fully loaded truck trailers between terminals. Delivery is completed at the destination by truck service. TOFC was acclaimed during the middle 1950s as being faster than truck shipments in some instances and resulting in less loss and damage.

The advent of TOFC actually occurred in 1926 with less-than-carload shipments loaded in trailer equipment and placed on specially designed flat cars provided by the Chicago, North Shore and Milwaukee Electric Line. The trailers were placed on the flat cars with wheels intact. It was projected that large savings in time and expense could be expected from less handling, loading, and unloading.[52] The idea was relatively unsuccessful and did not receive concentrated attention again until the middle of the 1950s. Published data does not separate TOFC shipments until 1955. Table II-4 illustrates the growth in TOFC usage.

Absence of specialized equipment data isolated from aggregate data prevents in-depth analysis of the effects of this diversified rolling stock on the entire car fleet or on the service factor. There are evidences, however, that the benefits outweigh the disadvantages of one-way traffic and limited use. The Canadian National Railway claimed that turnaround time was improved and damage as well as car supply complaints were reduced.[53] Mr. Patrick Boles, of the Economic Research Service of the U.S. Department of Agriculture, praised the growing use of TOFC shipments in 1966, claiming that turnaround time was three times as fast.[54] The ICC stated that faster TOFC turnaround greatly reduced the general boxcar

TABLE II-4

NUMBER OF TOFC SHIPMENTS, 1955-1971
(Class I Railroads)

Year	TOFC Shipments	Year	TOFC Shipments
1955	168,150	1964	890,748
1956	207,783	1965	1,034,377
1957	249,065	1966	1,162,731
1958	279,071	1967	1,207,242
1959	416,508	1968	1,337,149
1960	554,115	1969	1,344,123
1961	591,246	1970	1,257,471
1962	706,441	1971	1,196,519
1963	797,474		

Source: Yearbook of Railroad Facts

demand.[55] The rapid TOFC increase illustrated in Table II-4 is a testimony to its popularity. More importantly, this trend cannot justifiably be cited as a prime cause of car shortage problems.

Appraisal

Freight car supply problems predated railroad regulation by the federal government. As the economy of the United States grew, railroads experienced increased activity; however, they have suffered a diminishing role in business activity in the past three decades. Freight car unavailability is one of the reasons for the decline. This was verified in an elevator survey seeking grain shipment transportation data conducted during 1958 in 187 counties throughout twelve states.[55] In this survey, 614 of 1,096 respondents listed freight car unavailability as the prime disadvantage of shipping grain by rail.[56] Also, 180 of 512 respondents cited freight car unavailability as the prime factor attributed to the change from rail to highway shipments.[57] Railroad freight transportation has continued its decline since that time.

In this chapter, car supply problems were traced to their origin. The critical periods received major attention. In each of those periods, the ICC implemented temporary emergency measures, the only authority entrusted to that federal body. The ICC removed its service orders

after the crises passed. The nature of those service orders will be explained more fully in Chapter V.

Reoccurrence of the problem during each period of national crisis and/or increasing industrial activity proves that no lasting solution has been found. Recent legislative activity which has evolved from complaints lodged directly to congressional representatives indicates the users' growing impatience. Each of the critical periods witnessed formal investigations by the ICC and/or committees and subcommittees of the Congresses. The latest crisis related to the large grain movement mentioned on page 27 precipitated the latest investigation, held on January 29, 1973.[58] Recurring car supply problems give credence to John P. Doyle's contention that complaints and investigations have accomplished nothing more than fill pages of reports.[59] The increasing number of legislative bills resulted from the inability of the special investigations to arrive at a lasting solution to the problem.

Operational inefficiencies occurred during each freight car shortage period. The investigations are replete with car underutilization examples. Major attention has been given to the diminishing freight car fleet owned by United States Class I railroads. Critics have cited this trend as the cause of car shortage problems

which have plagued the railroad industry. Testimony, which raises a question as to the importance of the number of cars owned and also as to the possible adverse effects of a larger car fleet, dates from the first formal car shortage proceeding in 1907[60] to the ICC's 1969 annual report.[61] Commissioner Rupert T. Murphy, who has become expert in the freight car shortage problem, reinforces this question, stating in 1970 that efficient freight car use would eliminate 70 percent of the delays currently experienced by shippers in all parts of the country.[62] Underutilization was cited as a major problem in the workshop conducted by the National Academy of Sciences--National Academy of Engineering for the Department of Transportation.[63] Mr. John W. Ingram, Administrator of the Department of Transportation's Federal Railroad Administration, testified to the Special Subcommittee on Investigations of the Committee on Interstate and Foreign Commerce of the House of Representatives as follows:

> I cannot emphasize too strongly that utilization is just as important as fleet size, and in the context of the present problem it is probably more important. If poor utilization requires the railroads to maintain an excessively large fleet, then the cost of that car fleet will not only burden the railroads, but in one way or another it will affect rates and service to the shippers.[64]

In that investigation, a 10 percent improvement in utilization was cited as equivalent to the addition of

170,000 cars to the existing fleet.[65] The Committee discouraged the addition of new rolling stock.[66]

Users have criticized the carriers for their tendency toward specialized equipment at the expense of general purpose freight cars. Based on the scanty information available, it seems that this trend has contributed to operating efficiency and prevented larger car shortages.

It becomes clear that increasing the national rail car fleet is not a panacea to the freight car shortage problem and may even contribute to a worse situation. It is equally clear that improved utilization can have a major impact on the problem's resolution. Increased utilization should be possible through an improvement on the 2-1/2 hours per day that a freight car is in movement[67] and in the 21-plus days' turnaround required.[68] The ICC's service orders have had no lasting effect. The railroad companies appear to permit operational inefficiencies while seeking refuge in federal assistance, catalyzed by the users' growing outcries. In its discussion of railroad operating inefficiencies at the 1971 workshop mentioned earlier, the ICC advocated as follows:

> The general conclusion to be drawn from the material that has been developed in this paper is that more, rather than less, regulation is

> necessary. Although it is hoped that carriers and shippers may take voluntary action to relieve the situation, it is clear than an increased staff of car service agents is fundamental to providing the surveillance of carrier and shipper practices contributing to the underutilization of existing equipment. Such surveillance is needed not only for purposes of issuing service orders to abate those practices but also to identify problems that the Commission may wish to consider in formal rule-making proceedings.[69]

Some action is necessary to deter further federal financial involvement or further subsidy to the industry's private enterprise character. If the federal government is to take a further financial role, then it should have further influence to insure more efficient operations to minimize expenditures. There is considerable advocacy that improved operations are possible. The nature of the car service orders which have been employed by the ICC in emergency situations will be reviewed in this work to evaluate the ICC's suggestion. If the ICC is unable to effect improved operations and the carriers are permitted to continue as they have in recent times with federal support, the proponents of nationalized railroads may find the increasing number of advocates sufficient to change the United States railroading structure.

FOOTNOTES--CHAPTER II

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[2]William Larrabee, The Railroad Question, p. 120.

[3]U.S., Interstate Commerce Commission, First Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1887), p. 86.

[4]Ibid. See Docket 22, p. 93; Dockets 87, 88, and 89, p. 109; Docket 99, p. 111.

[5]U.S., Interstate Commerce Commission, Second Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1888), p. 119.

[6]For example, see Frank Parsons, The Heart of the Railroad Problem (Boston: Little, Brown, and Company, 1906), pp. 66-67.

[7][Hepburn Act] Statutes at Large, XXXIV, Chap. 3591 (1906), P.L. 337.

[8]U.S., Interstate Commerce Commission, Twentieth Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1906), p. 16.

[9]U.S., Interstate Commerce Commission, "Car Shortage--Insufficient Transportation Facilities," Interstate Commerce Commission Reports: Decisions of the Interstate Commerce Commission of the United States, November, 1906-December, 1907, XII (Washington, D.C.: Government Printing Office, 1908), pp. 561-79.

[10]Ibid., p. 561.

[11]Ibid., p. 564.

[12]Ibid., pp. 562, 566, 568-70.

[13]Ibid., pp. 577-78.

[14]Twentieth Annual Report of the Interstate Commerce Commission, p. 17.

[15]U.S., Interstate Commerce Commission, "Car Supply Investigation," Interstate Commerce Commission Reports: Decisions of the Interstate Commerce Commission of the United States, November, 1916-January, 1917, XLII (Washington, D.C.: Government Printing Office, 1917), pp. 657-706.

[16]Ibid., p. 661.

[17]Ibid., p. 676.

[18]Ibid., pp. 677-78.

[19]C. O. Ruggles, "Railway Service and Regulation," Quarterly Journal of Economics, XXXIII (Cambridge: Harvard University Press, November, 1918), 151.

[20]U.S., Interstate Commerce Commission, Thirtieth Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1916), p. 91.

[21][ESCH Car Service Act] Statutes at Large, XL, Chap. 23 (1917), P.L. 19.

[22]U.S., Interstate Commerce Commission, Thirty-First Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1917), p. 65.

[23]I. L[eo] Sharfman, The Interstate Commerce Commission: A Study in Administrative Law and Procedure, Part One (New York: The Commonwealth Fund, 1931),

[24]Ibid., pp. 140, 235.

[25]John F. Stover, The Life and Decline of the American Railroad (New York: Oxford University Press, 1970), pp. 202-3.

[26]U.S., Interstate Commerce Commission, Fifty-Fifth Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1941), p. 126.

[27]U.S., Interstate Commerce Commission, Fifty-Seventh Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1943), p. 9.

[28]U.S., Library of Congress, Legislative Reference Service, Digest of Public General Bills, 81st Congress, 2nd Session (Washington, D.C.: Government Printing Office, 1951), pp. 195-96.

[29]U.S., Library of Congress, Legislative Reference Service, Digest of Public General Bills and Selected Resolutions, 85th Congress, 1st Session (Washington, D.C.: Government Printing Office, 1957), pp. E537, A174.

[30]Association of American Railroads, A Review of Railroad Operations, 1963 (Washington, D.C.: Association of American Railroads, 1964), p. 7.

[31]U.S., Interstate Commerce Commission, "Investigation of Adequacy of Railroad Freight Car Ownership, Car Utilization, Distribution, Rules and Practices," Interstate Commerce Commission Reports: Decisions of the Interstate Commerce Commission of the United States, June, 1964-February, 1965, CCCXXIII (Washington, D.C.: Government Printing Office, 1965), p. 60.

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[34]U.S., Interstate Commerce Commission, Bureau of Enforcement, personal correspondence.

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[36]U.S., Congress, Senate, Committee on Commerce, Freight Car Shortages, Hearings before the Special Subcommittee on Freight Car Shortages of the Committee on Commerce, United States Senate, on S.1415, S.1729, S.1730, S.1731: Part I, 92nd Cong., 1st Sess., 1971, pp. 4-5.

[37]Ibid., pp. 6-26.

[38]Ibid., pp. 27-39.

[39]Ibid., pp. 40-50.

[40]"Soviet Grain Order Bogs Down U.S. Rails, Could Foul Up Shipments of Other Goods," Wall Street Journal, January 22, 1973, p. 26.

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[43]L. D. H. Weld, Private Freight Cars and American Railways (New York: Columbia University, 1908), pp. 11-12.

[44]Ibid., p. 12.

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[50]U.S., Congress, House, Special Subcommittee on Investigations of the Committee on Interstate and Foreign Commerce, Inquiry Into Freight Car Shortages, H. Rept. 92-1384, Pursuant to H. Res. 170, 92nd Cong., 2nd Sess., 1972, pp. 25-26.

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[52]"North Shore Handles Trailers Intact," Railway Age, LXXXI (December 18, 1926), p. 1232.

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[54]U.S., Department of Agriculture, The Freight Car Supply Problem and Car Rental Policies, by Patrick P. Boles, Economic Research Service, Marketing Research Report 953 (Washington, D.C.: Government Printing Office, 1972), p. 5.

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[57]Ibid., p. 102.

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[60]U.S., Interstate Commerce Commission, "Car Shortage--Insufficient Transportation Facilities."

[61]U.S., Interstate Commerce Commission, Eighty-Third Annual Report of the Interstate Commerce Commission, pp. 108-9.

[62]Lawrence M. Lesser, "Can the Freight Car Shortage Problem be Solved?" Traffic Management, IX (December, 1970), p. 29.

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[64]U.S., Congress, House, Inquiry Into Freight Car Shortages, H. Rept. 92-1384, p. 22.

[65]Ibid., p. 2.

[66]Ibid., p. 34.

[67]Ibid., p. 23.

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CHAPTER III

THE ROLE OF DEMURRAGE

Rail carriers expect users to load and unload freight cars with reasonable efficiency. The railroads assess a penalty charge when the users exceed established loading or unloading free time. This charge, known as demurrage, is an incentive to obtain maximum utilization of the rolling stock when it is not in railroad control. The absence of any such charge would lead to unnecessary delay in releasing the freight cars to the carriers.

It is impossible to state the harbinger of these detention charges. Coughlin claimed that a $5.00 penalty after twenty-four hours free time was assessed by the Pennsylvania Railroad during the Civil War.[1] Also, the charges became more common during the 1880s when terminals in large industrial centers became congested. Hartman concurs and also advised that demurrage rebating was used as a competitive tool during that period.[2]

The carriers' right to assess detention charges was a matter for the courts to resolve. Court decisions on this issue were rendered as early as 1891.[3]

The Hepburn Act of 1906 required that railroads file their demurrage rules and charges with the ICC. There was no demurrage uniformity established by the various carriers or among the various states, prompting the National Association of Railway Commissioners to initiate a corrective action in 1908.[4] A committee comprised of members from each state and the ICC was formed to establish an harmonious system of intrastate and interstate demurrage rule system. That railroad association opined that the severe car shortage of the previous year was due to user car detention. The committee's results were presented to the National Association of Railway Commissioners' Twenty-First Annual Convention and uniform intrastate and interstate rules and charges were approved. Uniformity opponents desired flexibility in application for competitive reasons. The rules were adopted and provided for a $1.00 per car per day charge after forty-eight hours' loading or unloading free time.[5] The rules were endorsed by the ICC and the American Railway Association and became effective April 1, 1910.[6]

The ICC and Demurrage

Users appealed to the ICC to invalidate any detention charges. The futile attempts ultimately led to the necessity for a court decision on the ICC's decision rendering authority.[7] The United States Supreme Court

ultimately resolved the dispute and repeated its decision several times during the early 1920s.[8]

The ICC was empowered to rule on demurrage legality but was without authority to affect its level. The Esch Car Service Act of 1917 corrected this situation.[9] This authority has been manifested through service orders during emergencies. Two major methods to discourage detention have been the decreasing of free time allowed or the increasing of the daily charge. Free time alteration has only been implemented in isolated instances on select types of equipment. The general forty-eight hour free time allowance, applied since 1910, was never revised until March, 1973. Isolated free time reduction was popular during the 1940s. There was a reduction on cars held at the Mexican border in 1943, a cutback on tank cars, which were in high demand, in 1945, and, on boxcars held at ports during 1946. This action was next employed during the Korean conflict in the early 1950s when a large export volume called for reduced free time at ports throughout 1951 and 1952, and again during 1955 and 1956. Heavy port congestion occurred again during the years 1964, 1966, and 1968. The ICC issued service orders which reduced free time.

The ICC was not concerned with the demurrage level until the World War II era. Higher demurrage rates

were ordered on the popular, high-capacity flatcars in 1943 and then increased on all cars in 1944, 1945, and 1946. The ICC increased demurrage on all cars during the Korean conflict of 1950-52 and then again during 1966-68. At the termination of this latter temporary action, the standard rates prescribed by the industry prevailed. Less than one year later, the ICC issued a service order which increased demurrage to its highest level in history in order to combat the constantly-increasing pressure for a freight car shortage solution.

The Industry and Demurrage

Demurrage represents a higher user distribution cost and agitates the relationship between the railroads and the users. Its assessment was a haphazard, inconsistent, and often-neglected procedure prior to the uniform code of 1910. Various states believed that rigid standards would discourage industrial formation in their territories. The National Association of Railway Commissioners recognized the situation in 1908 and asserted as follows:

> It is to the interest of shippers that many concessions made by the railroads in the way of free time for cars should be withdrawn. The individual shipper who succeeds in using a coal car as a warehouse for ten or fifteen days free of charge may profit thereby, but he does so at the expense of other shippers who are entitled to

> have the use of the car for transportation of their coal. The pressure of the individual shippers to secure additional free time is really directed against the proper use of cars and against the best interests of the shipping public as a whole.
>
> . . . . . .
>
> As the body of freight-car equipment is practically a unit, the system of rules governing its use should be free from conflict. Four days' free time in one State serves simply to give an advantage to the shippers of that State at the expense of all other shippers. Cars held beyond a fair time for unloading in New England are withheld, not merely from other New England shippers, but from shippers in all other States. It is evident that local regulation of this subject must have in mind the general good, or local regulation will find itself compelled to yield to national regulation. Good faith and intelligence on the part of local regulative bodies will secure uniformity of car-service rules without any shifting of jurisdiction.[10]

The ICC called for uniform national rates to remove the discrimination in its annual report to Congress in 1909.[11] It is interesting to note that the absence of demurrage assessment still is used as a competitive tool, as espoused by ICC Commissioner Rupert Murphy in April, 1971.[12]

Unified industry action to increase the demurrage level from a constant $1.00 per car per day charge first occurred in 1916 because of the huge traffic volume increase precipitated by World War I activity and the need for improved freight car utilization. A progressive scale of charges was introduced, with a $1.00 fee for the first day after free time termination, $2.00 for the second day, $3.00 for the third day, and $5.00 for each

subsequent day. These charges were revised in May, 1917, to $2.00 for the first five days and $5.00 thereafter. The Director General of the United States Railroad Administration, responsible for rail transportation during the federal government railroad takeover during World War I, ordered increased rates on February 10, 1918, to $3.00 for the first four days, $6.00 for the following three days, and $10.00 thereafter. After the war, the charges reverted to $2.00 per car per day for the first four days following the free time allowance and a $5.00 assessment for each subsequent day. The next increase was implemented in 1957 with rates rising to $4.00 and $8.00 respectively. In 1964, rates were increased to $5.00 per car per day for the first four days, $10.00 for the next four days, and $15.00 thereafter. The rate level again was increased at the end of 1971 to $10.00, $20.00, and $30.00, respectively.

Appraisal

Demurrage theoretically is an incentive for efficient freight car utilization and should discourage freight car use for storage purposes, as outlined by the American Railway Association in 1933.[13] It has not served this purpose, judging from a study of critical car supply periods. The ICC cited excessive warehousing in freight cars during the first formal freight car

investigation,[14] which was confirmed by the National Association of Railway Commissioners.[15] The same conditions prevailed during the World War I era, as cited by the ICC in its second freight car investigation.[16] The Louisville and Nashville Railroad confirmed excessive user detention at an informal conference in 1916.[17] Professor Moulton discussed car delay even during lax periods in a transportation problem treatise in 1933, adding that terminal congestion was caused therefrom.[18] Professor Muhlfeld cautioned against excessive detention at the start of World War II.[19] The ICC cited innumerable detention examples at that same time.[20]

The practice of excessive detention remained popular during the middle of the 1950s. Freight cars were in short supply and the federal government conducted another investigation to relieve the situation. At the 1955 hearing, Mr. Arthur Gass, Chairman of the Car Service Division of the AAR, presented numerous excessive detention examples.[21] The ICC contributed additional examples during that period.[22] Despite an industry-sponsored demurrage increase in 1964, storage in freight cars continued through the latter part of that decade. The ICC reviewed that period and evidenced countless, wasted car-days because of user detention.[23]

A conclusion may be reached that the demurrage level has not served to discourage user detention and lading storage in freight cars. The multitude of historical examples give ample validity to this contention.

Payments for Demurrage

This study found little attention given to the magnitude of aggregate demurrage charges, save a listing in the yearly statistics reported to the ICC by the individual carriers. Column 1 of Table III-1 lists the yearly aggregate demurrage charges assessed by Class I railroads for the years 1917 through 1971. Before any further reference is made to Table III-1, it is recognized that many infirmities exist when comparisons among years are attempted or when any generalizations are made regarding the totals. The demurrage assessment listing is imposing when consideration is given to the fact that they represent user detention penalties beyond the forty-eight hour loading or unloading allowance. Clearly, warehousing is being provided by the carriers to the benefit of the patrons at the expense of further freight car utilization.

The amounts shown can be reduced to averages, in what may appear to be an oversimplified approach.

TABLE III-1

ASSESSED DEMURRAGE CHARGES, 1917-1971
(Class I Railroads)

Year	Assessed Demurrage Charges (1)	Yearly Revenue Carloads (2)	Average Demurrage Per Car (3)	Revenue Freight Originated in N.T. (000) (4)	Average Demurrage Per Ton (5)
1917	26,401,148	n.a.	n.a.	1,264,016	.0209
1918	37,342,341	44,592,089	.8374	1,263,344	.0296
1919	28,156,471	41,832,536	.6731	1,096,449	.0257
1920	30,505,039	45,118,472	.6761	1,255,421	.0243
1921	18,705,562	39,323,158	.5757	940,183	.0199
1922	17,570,568	43,207,561	.4067	1,023,745	.0172
1923	27,753,122	49,812,113	.5572	1,279,030	.0217
1924	21,032,518	48,534,433	.4334	1,187,296	.0177
1925	20,391,640	51,224,152	.3981	1,247,242	.0163
1926	21,903,157	53,098,819	.4125	1,336,142	.0164
1927	18,472,560	51,635,806	.3577	1,281,611	.0144
1928	16,957,925	51,589,887	.3287	1,285,943	.0132
1929	19,039,773	52,827,925	.3604	1,339,091	.0142
1930	13,505,874	45,877,974	.2944	1,153,197	.0117
1931	9,256,385	37,151,249	.2492	894,187	.0104
1932	6,139,016	28,179,952	.2179	646,223	.0095
1933	5,137,357	29,220,052	.1756	698,943	.0073
1934	5,987,069	30,845,960	.1941	765,296	.0078
1935	6,096,743	31,504,134	.1935	789,627	.0077
1936	6,875,216	36,109,112	.1904	958,830	.0072
1937	9,080,399	37,670,464	.2412	1,015,586	.0089
1938	5,219,221	30,457,078	.1714	771,862	.0068
1939	6,392,648	33,911,498	.1885	901,669	.0071
1940	7,786,497	36,357,854	.2142	1,009,421	.0077
1941	13,649,039	42,352,127	.3223	1,227,650	.0111
1942	19,777,977	42,771,102	.4624	1,421,187	.0139
1943	27,002,237	42,439,951	.6362	1,481,225	.0182
1944	25,970,627	43,408,295	.5983	1,491,491	.0174
1945	29,371,771	41,918,120	.7007	1,424,913	.0206
1946	33,821,565	41,341,278	.8181	1,366,617	.0247
1947	36,518,828	44,502,188	.8206	1,537,546	.0238
1948	31,971,752	42,718,828	.7484	1,506,878	.0212
1949	19,718,876	35,911,261	.5491	1,226,503	.0161
1950	26,571,752	38,902,641	.6830	1,354,196	.0196

TABLE III-1--Continued

Year	Assessed Demurrage Charges (1)	Yearly Revenue Carloads (2)	Average Demurrage Per Car (3)	Revenue Freight Originated in N.T. (000) (4)	Average Demurrage Per Ton (5)
1951	48,295,854	40,499,182	$1.1925	1,477,402	.0327
1952	32,855,641	37,985,155	.8649	1,382,604	.0237
1953	25,085,374	38,215,993	.6564	1,384,301	.0181
1954	18,562,854	33,914,953	.5473	1,223,969	.0152
1955	25,972,045	37,636,031	.6908	1,396,339	.0186
1956	33,658,126	37,844,828	.8894	1,447,422	.0233
1957	37,251,096	35,500,148	1.0493	1,380,327	.0270
1958	33,859,721	30,222,145	1.1204	1,190,353	.0284
1959	39,610,963	31,014,549	1.2772	1,232,201	.0321
1960	39,066,500	30,441,415	1.2833	1,240,789	.0315
1961	34,912,285	28,583,780	1.2214	1,193,740	.0292
1962	38,038,593	28,722,437	1.3244	1,233,597	.0308
1963	41,881,154	28,866,619	1.4509	1,285,060	.0326
1964	53,689,278	29,027,186	1.8496	1,355,738	.0396
1965	67,766,078	29,247,637	2.3170	1,387,423	.0488
1966	88,834,546	29,623,115	2.9988	1,448,902	.0613
1967	82,173,145	28,083,751	2.9260	1,407,628	.0584
1968	76,907,130	28,252,541	2.7221	1,431,308	.0537
1969	97,279,316	28,291,939	3.4384	1,473,457	.0660
1970	109,295,201	27,160,247	4.0241	1,484,919	.0736
1971	134,907,119	25,260,858	5.3406	1,392,000	.0969

Sources: Statistics of Railways in the United States
I.C.C. Transport Statistics of the Railroads
Yearbook of Railroad Facts
Association of American Railroads, personal correspondence

Column 2 of Table III-1 lists the total revenue carloads originated in each year from 1918 through 1971 and Column 3 represents the average demurrage per revenue carload. The average cost per ton declines from the earliest period for which records are available through the lean years of the 1930s and then takes higher proportions until the peak of $5.34 per car is reached in 1971.

The same approach is used to ascertain the average cost per ton. Column 4 in Table III-1 lists the total carload revenue freight originated by Class I carriers for the years 1917 through 1971. Again, the lean years of the 1930s reveal the lowest per-ton cost, as shown in Column 5. The decade of the 1960s represents a noticeable cost increase and most certainly has been affected by the higher demurrage rates which prevailed in the latter part of the decade.

It is stated without reservation that the level of demurrage has not been sufficiently high to generally discourage inefficient freight car utilization. Demurrage rate increases, whether by action of the ICC or the industry, have not reduced aggregate payments, evidenced by rate increases in late 1944 and in 1945, 1949-51, 1957, 1964, and subsequent years. The ICC recently stated that higher demurrage levels only increase railroad revenue,[24] which is confirmed by the data.

This study was an investigation into freight car utilization and the measures used to increase efficiency. The evidence presented implies that past demurrage levels have not fulfilled that purpose. Ex-Secretary of the Department of Transportation Volpe recently advised that the freight car fleet is controlled by the users 40 percent of its available time.[25] Any decrease in that percentage necessarily improves utilization.

Before any attempt can be made to ascertain the required level of industry rail car ownership, utilization must be improved by placing restrictions on the users. Mr. F. A. Pontious, former manager of the Chicago Demurrage Bureau and former supervisor of Demurrage and Storage on the Chicago and Northwestern Railway, declared in 1920 that an increased car supply cannot be used as a substitute for incentive demurrage to improve utilization.[26]

In conclusion, past studies showed that abnormally high demurrage has materially improved utilization. Pontious advised of a 1913 survey during which the interstate rate was $1.00 per car per day and the California intrastate rate was $3.00 per car per day.[27] The study revealed that 12.87 percent of the cars involved in interstate transportation were held beyond the free time allowance, compared to 2.37 percent on intrastate shipments.[28] Another study compared different rate levels in

the same geographic area during different time periods, the validity of which contains more weaknesses than the earlier-mentioned study, but nevertheless is worth citing.

> Comparisons of results at a $3.00 rate in Arizona for the 6 months, ending with July of the present year, with a corresponding period of 1913, when a $1.00 rate applied on Interstate traffic and the same rate on State traffic for three months, or half of the period, show an increase in cars reported of 20,882, or 26 per cent; a decrease in cars held overtime of 2,698, or 57 per cent; a decrease in demurrage charges of $4,418.00, or about 25 per cent.
>
> The percentage of State cars held overtime fell from 03.17 to 00.92; on Interstate cars from 09.80 to 04.04, and on all traffic from 05.87 to 01.99.[29]

Mr. L. F. Loree, former president of the Delaware and Hudson Company and former chairman of the Kansas City Southern Railway Company, related studies which measured higher demurrage rates' effectiveness. In one, California used different rates for various periods. Payments averaged 37.42 cents per car with rates of $1 and $2 per car and fell to 10.43 cents per car with a rate of $6 per car, a decrease in detention charges of 70 percent. A rate decrease to $3 then increased detention 233.78 percent.[30] Loree reported an American Railway Association study in 1916, with varying interstate rates of $1 and $2 and a constant $4 California intrastate rate over the same period. The percentage of detained interstate shipments was 16.2; for intrastate shipments, 1.74. The study projected an 84.24 percent detention decrease

nationally under the California scale, or 1,257,486 cars placed into service.[31] It becomes increasingly clear that only a relatively high demurrage rate will discourage user detention.

A reduction in free time also should improve utilization. The forty-eight hour allowance became standard in 1910 when equipment and technology were not as advanced as in current times. Users in the Soviet Union today are allowed four hours to load or unload cars.[32] And, a House of Representatives report on a 1972 car shortage investigation recommended free-time reduction, and advised of shipper concurrence.[33] Interestingly, the ICC issued its first general free-time reduction emergency order in March, 1973, and subsequently rescinded its order the same month because of user protests.

In summary, it has been suggested that demurrage levels have not sufficiently discouraged freight car user detention. Earlier studies showed that relatively high rates materially improved utilization. It is suggested, therefore, that rates be established by industry action or government fiat to levels higher than contemporary storage and handling charges. Also, it is suggested that free time allowance permanently be reduced to twenty-four hours. The users' cooperation thus is solicited to attain

maximum utilization and further governmental action is deterred. If, however, the freight car is viewed other than as a transportation vehicle, those considerations are beyond this study's purview.

FOOTNOTES--CHAPTER III

[1]E. W. Coughlin, Freight Car Distribution and Car Handling in the United States (Washington: Association of American Railroads, Car Service Division, 1956), p. 141.

[2]Harleigh H. Hartman, Law and Theory of Railway Demurrage Charges (New York: Traffic Publishing Company, 1928), p. 2.

[3]Miller and Co. v. Georgia Railroad and Banking Co., 18 L.R.A. 323 (Ga. Sup. Ct. 1891).

[4]National Association of Railway Commissioners Proceedings of the Twentieth Annual Convention (Washington, D.C.: Government Printing Office, 1909), p. 133.

[5]National Association of Railway Commissioners. Proceedings of the Twenty-First Annual Convention (Washington, D.C.: Government Printing Office, 1910), pp. 207, 217.

[6]Hartman, Law and Theory of Railway Demurrage Charges, pp. 3-4.

[7]Michie v. New York, N. H. and H. R. Co., 151 Fed. Rep. 694 (D. Mass. Cir. Ct. 1907).

[8]For example, see Pennsylvania R. R. Co. v. Kitanning Iron & Steel Co., 253 U.S. 319, 323 (1920); Edward Hines, etc., Trustees v. United States, 263 U.S. 143, 145 (1923); Turner Lumber Co., v. C.M.ST.P. Rwy., 271 U.S. 259 (1926).

[9]John J. Esch, "Regulation of Car Service Under Government Control of Operation," War Adjustments in Railroad Regulation, The Annals of the American Academy of Political and Social Science, LXXVI (Philadelphia: The American Academy of Political and Social Science, 1918), p. 39.

[10]National Association of Railway Commissioners Proceedings of the Twentieth Annual Convention, pp. 132-33.

[11]U.S., Interstate Commerce Commission, Twenty-Third Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1909), pp. 13-15.

[12]U.S., Department of Transportation, Division of Engineering, National Research Council, National Academy of Science--National Academy of Engineering cooperating, "Freight-Car Supply and Utilization: The Regulatory View" [by Rupert L. Murphy], Improving Railroad Freight-Car Service (Washington, D.C.: Office of the Secretary of Transportation, Rept. DOT-OS-00035 Task Order 10, 1971), p. 29.

[13]American Railway Association, The American Railroad in Laboratory (Chicago: American Railway Association, 1933), p. 396.

[14]U.S., Interstate Commerce Commission, "Car Shortage--Insufficient Transportation Facilities," Interstate Commerce Commission Reports: Decisions of the Interstate Commerce Commission of the United States, November, 1906-December, 1907, XII (Washington, D.C.: Government Printing Office, 1908), p. 579.

[15]U.S., Interstate Commerce Commission, Twenty-Third Annual Report of the Interstate Commerce Commission, p. 13.

[16]U.S., Interstate Commerce Commission, "Car Supply Investigation," Interstate Commerce Commission Reports: Decisions of the Interstate Commerce Commission of the United States, November, 1916-January, 1917, XLII (Washington, D.C.: Government Printing Office, 1917), p. 668.

[17]"Car Shortage Information," Traffic World, XVIII (November 11, 1916), pp. 966-67.

[18]Harold G. Moulton and Associates, The American Transportation Problem (Washington, D.C.: The Brookings Institution, 1933), pp. 798-99.

[19]John E. Muhlfeld, The Railroad Problem and Its Solution (New York: The Devin-Adair Company, 1941), p. 45.

[20]U.S., Interstate Commerce Commission, Fifty-Fifth Annual Report of the Interstate Commerce Commission (Washington, D.C.: Gover ment Printing Office, 1941), p. 127.

[21]U.S., Congress, Senate, Committee on Interstate and Foreign Commerce, Freight Car Shortage, Hearings, before a subcommittee of the Committee on Interstate and Foreign Commerce, United States Senate, on the Freight Car Shortage, 84th Cong., 1st Sess., 1955, p. 107.

[22]U.S., Department of Transportation, "Freight Car Supply and Utilization: The Regulatory View," p. 29.

[23]Ibid., pp. 29-33.

[24]U.S., Interstate Commerce Commission, Eighty-Fifth Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1971), pp. 21-22.

[25]John F. Donelan, "Demurrage Study Contract," I.C.C. Practitioners' Journal, XXXIX (November-December, 1971), p. 68.

[26]F. A. Pontious, Demurrage and Car Efficiency (Chicago: La Salle Extension University, 1920), p. 33.

[27]Ibid., p. 34.

[28]Ibid., p. 35.

[29]Ibid., p. 37.

[30]L. F. Loree, Railroad Freight Transportation (New York: D. Appleton and Company, 1922), p. 328.

[31]Ibid., pp. 328-29.

[32]"Russian Railroading: Hungering After Growth," Transportation and Distribution Management, XII (October, 1972), p. 38.

[33]U.S., Congress, House, Special Subcommittee on Investigations of the Committee on Interstate and Froeign Commerce, Inquiry Into Freight Car Shortages, H. Rept. 92-1384, Pursuant to H. Res. 170, 92nd Cong., 2nd Sess., 1972, p. 17.

CHAPTER IV

THE PROBLEM OF PER DIEM

The topic of demurrage, covered in the last chapter, concerns user charges theoretically assessed universally by the railroads when excess delays are incurred. Unified railroad action can be envisioned for two reasons: (1) no individual carrier would be criticized by shippers or receivers by what may appear to be an excessive penalty; and (2) the revenue generated would contribute to the railroads' coffers as a recompense for their opportunity costs. The issue of per diem charges, the payment to an owning railroad by the using railroad, does not present the same monolithic approach. Opposing views regarding the charges' level are diverse and probably more clearly illustrate the divisive character of the railroad industry than any other aspect. Since its inception, per diem has been one of the most perplexing problems facing the industry, the regulating agencies, and United States Congresses.

Early History of Per Diem

Freight shipments in early railroad history involved a cumbersome process. Track gauge differences required lading transfer between freight cars if the consignee was not served by the originating railroad. The second carrier provided its own freight car and rolling stock remained in the possession of its owners. This process caused delay, expense, and avoidable lading damage. Standard track gauge began to appear in 1867,[1] eliminating the need for lading transfer. The receiving railroad paid the owner for the car's use. Car interchange became common by 1872,[2] as did a quasi-standard rate. The rate had been two cents per loaded mile prior to 1872 and was reduced to one cent per mile, loaded or empty, in 1872. Subsequent reductions to three-quarters of a cent and three-fifths of a cent per mile, loaded or empty, occurred during the next three decades.[3] Dissatisfaction with the mileage system grew during this period for many reasons: owning companies had no easy method of verifying the user's mileage contention;[4] a great amount of underutilization occurred as railroads were using other lines' cars for storage purposes;[5] low rental rates removed the new car purchase incentive;[6] and cars located a long distance from the owners' interchange points were speculatively held rather than returned at

large expense.[7] The growing mistrust among the railroads led to the need for a more satisfactory car rental method, which was presented by the American Railway Association's Committee on Car Service and was adopted on July 1, 1902.[8] The approved method was a twenty-cent daily charge with owner recall provisions. After recall, the rate increased to $1.00 per day if on one non-owner's line for thirty days.[9] The ICC's 1902 annual report praised the new daily charge and cited freight car abuses under the previous mileage system.[10] Its 1903 annual report credited the new method for achieving greater utilization.[11]

The rate was increased to twenty-five cents per day on July 1, 1906 and then doubled in 1907 because of car supply problems. This latter action returned cars to their owners. Per diem rate progression to 1949 is shown in Table IV-1.

Authority for Per Diem Rates

Observance of the Code of Per Diem Rules governing freight car usage has been voluntary. It was not until 1970 that the AAR assessed violation penalties against its concurring members. Railroads who would not observe the AAR's rules negotiated rates among themselves. The Twentieth Annual Convention of the National

TABLE IV-1

PROGRESSION OF PER DIEM RATES, 1902-1949

Year		Per Diem Rate
1902		$ .20
1906		.25
1907		.50
1908		.25
1910	(March to July inclusive)	.30
1910	(August to February inclusive)	.35
1913		.45
1916		.75
1917		.60
1920	(March 1, 1920)	.90
1920	(November 1, 1920)	1.00
1945		1.15
1947		1.25
1949		1.75

Sources: 1902-1920, American Railway Association, The American Railroad in Laboratory, p. 386; 1945-1949, Association of American Railroads, personal correspondence.

Association of Railway Commissioners in 1908 condemned the voluntary observation, claiming only strict rules and penalties would return owners' cars.[12]

The ICC had been held powerless to affect per diem rates until the late 1960s. It criticized the voluntary observance in 1907.[13] It cited loaded cars with average moving speed of less than one mile an hour and others standing idle from two to twenty days, solid trains of empty cars standing idle for almost three weeks, and two to three week switching service in Duluth, Minneapolis, and Chicago.[14] It requested remedial car service and per diem authority at that time.[15] Per diem authority was granted in 1966.

Diverse Views on Per Diem

The standard per diem rate agreement in 1902 did not remove the opposing views of its desired level. Eastern railroads terminated more traffic than they originated in a relatively concentrated area. They preferred a low, mileage-based rate. Western roads originated a greater volume and preferred high, daily rates to increase handling efficiency. Mr. Arthur Hale, former chairman of the American Railway Association's Committee on Car Efficiency at the Twentieth Annual Convention of the National Association of Railway

Commissioners in 1908, cited the reduced new-car purchase incentive and the lack of Eastern railroad car ownership when the emergency fifty-cent rate was reduced to twenty-five cents.[16] At the 1916 ICC car shortage investigation, Mr. George A. Hodges, of the American Railway Association, cited 40,000 car service violations by 107 railroads in one month. He alleged that a higher per diem rate would improve car utilization.[17]

The low-rate issue next became prominent after World War II. The earlier described operating inefficiencies prompted an ICC per diem investigation at which the Director of the Bureau of Service, the deputy director of the Office of Defense Transportation, and several car service agents suggested rates as high as $5.50 per day to improve utilization.[18] Notwithstanding the AAR's and the American Short Line Railroad Association's protests of inequity and injustice of penalty per diem, the ICC ordered a $2.00 per car per day rate effective October 1, 1947. Railroad protests resulted in a temporary injunction and a subsequent decision in Palmer v. United States, 75 F. Supp. 63, wherein the Columbia District Court of the United States denied the ICC's authority to prescribe per diem for regulatory purposes.[19]

The ICC, Congress, and Per Diem

The Court's decision prohibited the ICC from prescribing an efficiency producing per-diem level. It also presented a difficult decision making environment for the ICC and permitted continued division in the AAR. For example, the Western roads sought rates of $2.00 to $2.50 in 1949 while the shorter and Eastern lines asked for a maximum $.95 rate during the post World War II era. The contested rates had been $1.15, $1.25, and $1.50 over a three-year period. The ICC's 1949 decision claimed the rates were neither too high nor too low.[20]

In its 1950 annual report, the ICC requested authority to determine per diem levels[21] which included current replacement cost of the equipment.[22] Senate bill S.1018 was introduced to the Eighty-Second Congress, First Session, on March 2, 1951;[23] hearings were held and no further action was taken. The ICC repeated its request in 1951. The Eighty-Second Congress, Second Session, received Senate bills S.2350 and S.2901 on January 10 and March 20, 1952, respectively.[24] They were referred to the Senate Committee on Interstate and Foreign Commerce, but no further action was taken. In that same Congress, the House of Representatives received H.R. 6962. The proposal stipulated that the ICC should establish rates, consider both opportunity and

replacement cost, ignore the user's or owner's financial condition, and double the contemporary rates during emergencies.[25] No further action was taken after the bill was sent to the House Committee on Interstate and Foreign Commerce. The ICC's identical request in 1952 was met by the introduction of H.R. 538 and H.R. 3788 on January 3 and March 9, 1953, respectively, to the Eighty-Third Congress, First Session's House of Representatives.[26] Both bills were similar to H.R. 6962 and had identical results. The ICC's same request in 1953 was ignored.

Railroad industry internal strife continued through 1955. The ICC was called upon to rule on the AAR's $1.75, $2.00, and $2.40 rates which were prescribed over a six-year period, and found them to be reasonable.[27]

The ICC's 1955 annual report requested penalty per diem authority, citing the rapidly-diminishing car fleet.[28] This authority was recommended to the Eighty-Fourth Congress, Second Session, in Senate bills S.2770 and S.3509 on January 5 and March 22, 1956, respectively, and House bill H.R. 9962 on March 15, 1956.[29] After the bills were referred to their respective Interstate and Foreign Commerce Committees, hearings were held on S.2770 and no further action was taken. The ICC complained about congressional inactivity when it repeated its request in 1956.[30] The Eighty-Fifth Congress, First

Session, received H.R. 3626 dated January 24, 1957, in the House of Representatives, and S.942 and S.2030 dated January 29 and May 8, 1957, respectively, in the Senate.[31] Although H.R. 3626 and S.942 resembled the 1956 legislative proposals in the ICC's freedom to establish per diem rates, S.2030 was more specific as to the calculation method. It required a daily charge and included opportunity cost consideration.[32] Again, no action was taken after these bills were directed to their respective committees, although a hearing was held on S.3626.[33]

The ICC pleaded for per diem authority in its 1957 report to Congress, adding the earning power consideration in its recommendation.[34] Nothing was done and the recommendation was repeated in 1958.[35] The ICC's 1955 decision on the reasonableness of the contemporary rates, described on page 73, now was being contested, along with the addition of another AAR-increased rate, and the investigation was reopened.[36] At this point, all rates since 1949 were being contested.

The proposed legislation in the Eighty-Sixth Congress, First Session, took two approaches. The first entrusted the ICC to rule on the reasonableness of the prescribed standards on which contemporary rates were based, including freight car earning power. Senate

bills S.1789 and S.1811, introduced on April 24 and April 27, 1959, respectively, and the following House bills

Date	Bill Number
April 16, 1959	H.R. 6468
April 23, 1959	H.R. 6551
April 29, 1959	H.R. 6789
May 7, 1959	H.R. 7008
May 7, 1959	H.R. 7020
May 14, 1959	H.R. 7130
June 23, 1959	H.R. 7925
June 24, 1959	H.R. 7937

would have achieved that goal.[37] The second approach would have sanctioned a penalty per diem incentive beyond the contemporary rates. It was advocated in Senate bill S.1812 on April 27, 1959, and House bills H.R. 5938, H.R. 6138, and H.R. 6469 on March 23, April 7, and April 16, 1959, respectively.[38] Hearings were conducted by the respective Interstate and Foreign Commerce Committees. The House Committee's favorable report received no further action.[39] The Senate Committee's report acknowledged the AAR's request that no action be taken and its promise of an investigation, expressed skepticism of any intra-industry solution, and strongly recommended complete ICC per diem authority.[40] The bills died on the Senate calendar.

The ICC's unrelenting attempts continued in its 1960 annual report, advising of an increased number of

unserviceable cars and of car underutilization.[41] The Eighty-Seventh Congress, First Session, witnessed four proposals related to the ICC's per diem authority. The Senate received S.886 and S.1840 on February 9 and May 11, 1961, respectively; the House received H.R. 2038 and H.R. 7342 on January 6 and May 25, 1961, respectively.[42] Hearings were held and no further action taken. The recommendation was repeated in the ICC's 1962 report.[43] Senate bill S.1063 on March 14, 1963, and House bill H.R. 2092 on January 17, 1963, were introduced to the Eighty-Eighth Congress, First Session.[44] Hearings were held and the Senate investigating committee issued a report strongly recommending enactment. It also advised of concurrence from the Departments of Agriculture, Commerce, and Defense, the Comptroller General, and the General Services Administration of the United States.[45] The ICC's 1963 annual report pleaded for enactment and cited the gravity of the car situation. It advised that the national car fleet had diminished and was comprised of more specialized cars; some carriers had rejected the new AAR prescribed multi-level per diem rates; and freight-car earning power had been excluded from previous per diem levels.[46] The proposed legislation died when Congress adjourned in 1964.

At this juncture, the Eighty-Ninth Congress, First Session, was confronted with the throes of the most

serious, prolonged car shortage problem, as described in Chapter II. The acceleration of users' demands incited a raft of legislative proposals to endow the ICC with uncontested per diem authority. The Senate received S.179, S.1098, and S.1786 on January 6, February 10, and April 13, 1965, respectively.[47] The House of Representatives was presented with the following bills in 1965.[48]

Date	Bill Number
January 4	H.R. 425
January 4	H.R. 532
January 11	H.R. 2230
January 25	H.R. 3397
February 2	H.R. 4172
February 4	H.R. 4407
February 8	H.R. 4543
March 17	H.R. 6432
April 6	H.R. 7165
May 27	H.R. 8636
June 3	H.R. 8745
June 10	H.R. 8950
June 10	H.R. 8952

Extensive hearings were conducted, amendments were made to restrict application to cars in short supply, and Public Law 89-430 was passed, amending section 1 (14) (a) of the Interstate Commerce Act on May 26, 1966.[49] Theoretically, this law ended the ICC's sixteen-year per diem authority struggle. The statute provided as follows:

> The Commission may, after hearing, on a complaint or upon its own initiative without complaint, establish reasonable rules, regulations, and practices with respect to car service by common carriers by railroad subject to this part, including

> the compensation to be paid and other terms of any contract, agreement, or arrangement for the use of any locomotive, car, or other vehicle not owned by the carrier using it (and whether or not owned by another carrier), and the penalties or other sanctions for nonobservance of such rules, regulations, or practices. In fixing such compensation to be paid for the use of any type of freight car, the Commission shall give consideration to the national level of ownership of such type of freight car and to other factors affecting the adequacy of the national freight car supply, and shall, on the basis of such consideration, determine whether compensation should be computed solely on the basis of elements of ownership expense involved in owning and maintaining such type of freight car, including a fair return on value, or whether such compensation should be increased by such incentive element or elements of compensation as in the Commission's judgment will provide just and reasonable compensation to freight car owners, contribute to sound car service practices (including efficient utilization and distribution of cars), and encourage the acquisition and maintenance of a car supply adequate to meet the needs of commerce and the national defense. The Commission shall not make any incentive element applicable to any type of freight car the supply of which the Commission finds to be adequate and may exempt from the compensation to be paid by any group of carriers such incentive element or elements if the Commission finds it be in the national interest.[50]

The ICC then initiated an investigation, Ex Parte 252, Incentive Per Diem Charges, designed to implement the law as expeditiously as possible.[51]

The Level of Per Diem

Some issues will now be explored prior to an evaluation of the ICC's decisions resulting from its new authority. Two major per diem views are expressed, both based on practicality and motivated by selfish interests.

The dichotomy results from the uneven traffic flow characteristic of the overall United States economy. More shipments originate in the West and Southwest and terminate in the Northeast than move in the opposite directions. Originating railroads are required to provide cars and, primarily due to the slow or nonexistent empty car return, must maintain a larger proportion of the national fleet to serve the demand. The terminating roads possess other railroads' cars to supply their vendors. The originating lines favor a high, daily per diem rate to increase efficiency and return on investment, while the terminating roads favor a low, mileage rate consistent with the relatively shorter distance involved in their participation. A mileage rate also ignores operational inefficiencies that history reveals to be centered in the Northeast, as illustrated in the earliest car shortage periods of this century's first two decades, described on pages 14 and 15 of Chapter II. The implications of the unequal traffic distribution and low per diem rates were illustrated by Senator Roman Hruska, of Nebraska, at a 1970 car shortage proceeding. He related a Union Pacific Railroad study which showed 2,900 less cars on its lines than it owned and 4,500 less cars on the Burlington Northern than it owned. The Penn-Central had over 34,000 more cars on its line than it owned.[52] The uneven traffic flow has been a major obstacle precluding a conciliatory per diem rate.

Several other impediments prevent an amicable solution. These should be considered to appreciate the difficulties in resolving the issue.

First Consideration

A theoretically desirable level can be advocated, but the inherent assumptions empirically cannot be satisfied. Professor Yehuda Grunfeld suggested, in 1959, a rate at which the railroad would be indifferent whether its car is controlled by itself or by another road.[53] No attempt is made to offer a critique on his economic analysis because his study attempted to ascertain the per diem level which would aid new freight car purchase decisions.

A level of intercarrier rental charges should include an opportunity cost element. Opportunity cost was not considered when the per diem components were decided by the McCrea Commission, a body of five presidents of leading railroads, in 1908. It allowed the elements of repair cost, replacement cost (depreciation and retirements), taxes, interest cost, and other incidental allowances.[54]

The ICC criticized the 1907 rate, which was twice the 1906 level and was intended to expedite car returns, alleging that users could earn ten times the per diem

with others' cars.[55] F. A. Pontious stated, in 1920, that per diem rates at their highest point barely covered invested-capital interest and nowhere approached the cars' value to the owner.[56]

The polar extreme is an excessively high rate, as was proposed in Senate bill S.3334 dated January 26, 1970.[57] The ICC opposed the proposed $100 per car per day minimum rate, cautioning of total traffic diversion to other transportation modes because the high rate would result in higher costs.[58]

Second Consideration

A high rate may encourage car underutilization. Oftentimes, utilization is equated with the loaded car mileage percentage of total car miles. Empty car return to owners increases empty car mileage. The empty car mile ratio to total car mileage for the years 1901-1971 is shown in Table IV-2. The unprecedented high empty-mileage ratios in the late 1960s and early 1970s may have resulted from the multi-level per diem rate structure which assessed higher charges on some cars, as will be explained shortly. Empty car mileage produces no revenue but is required if cars are returned to their owners, assuming no available shipments in the owner's direction. Underutilization of the existing rail fleet, then, is inevitable.

TABLE IV-2

PERCENTAGE OF EMPTY FREIGHT CAR-MILES TO TOTAL FREIGHT CAR-MILES, 1901-1971 (Class I Railroads)

Year	Percent	Year	Percent
1901	30.6	1937	37.0
1902	30.2	1938	38.3
1903	30.6	1939	37.7
1904	31.1	1940	38.2
1905	31.8	1941	36.0
1906	31.1	1942	37.2
1907	29.0	1943	35.7
1908	30.2	1944	34.2
1909	29.1	1945	32.9
1910	29.2	1946	33.0
1911	31.1	1947	33.6
1912	30.5	1948	34.3
1913	29.9	1949	36.2
1914	32.2	1950	34.0
1915	33.6	1951	34.0
1916	29.9	1952	35.3
1917	29.8	1953	35.9
1918	32.3	1954	36.9
1919	31.3	1955	35.5
1920	32.1	1956	35.9
1921	37.0	1957	37.8
1922	32.8	1958	38.8
1923	34.3	1959	37.7
1924	34.9	1960	38.6
1925	35.5	1961	38.8
1926	36.3	1962	38.8
1927	37.1	1963	39.1
1928	37.0	1964	39.4
1929	37.2	1965	39.0
1930	38.6	1966	39.7
1931	39.2	1967	41.1
1932	39.3	1968	40.7
1933	39.0	1969	40.8
1934	39.1	1970	42.2
1935	37.7	1971	43.5
1936	36.9		

Sources: Railroad Transportation
Yearbook of Railroad Facts

Third Consideration

The per diem rate structure should not distort the national car fleet's size and composition or usage. In a per diem rate treatise, Rastatter and Snow suggested that originating railroads may select more expensive but less efficient vehicles for interline movements to profit from the higher per diem.[59] They also suggested that higher rates encourage a larger fleet because, historically, cars are off the owners' lines a great proportion of the time; low rates have the opposite effect.[60] Professor Grunfeld's earlier treatise was conceptually similar and added that a high, single per diem rate encourages a larger, lower quality car fleet.[61] His suggested multi-level per diem structure became a reality in 1964.

Fourth Consideration

The basic components of a per diem rate are subject to interpretation and value judgments. Terms such as "compensation," "cost," and "interest" are ambiguous. Grunfeld cited some of the historical difficulties in this respect. He mentioned differences surrounding depreciation and interest and whether they should be calculated on historical or replacement costs. Another facet of the interest rate concerned whether a risk element should be included.[62] The ICC became entangled

in the same type dilemma and ruled, in 1966, that contemporary rates were excessive because they included reproduction costs instead of costs that the railroad would have incurred if it were using the cars.[63]

Fifth Consideration

The rate level should not unduly penalize non-owners who provide an efficient through transportation service. An excessive rate would add unnecessary service costs to the public interest's detriment. A low rate, however, discourages efficiency and encourages confiscation of owners' equipment after the initial service has been performed.

With these considerations in mind, we turn to the progression of the AAR's contested rates from 1947 through the ICC's prescribed per diem rates.

Per Diem Progression from 1947

The ICC's 1947 decision, described on page 71 intended to resolve the contested $1.15 and $1.25 daily rates. The AAR prescribed rates of $1.75 in 1949, $2.00 in 1952, $2.40 in 1953, $2.75 in 1957, and $2.88 in 1959. A new per diem concept was introduced by the AAR, effective January 1, 1964. Departing from the uniform daily charge, the new multi-scale was based on depreciated car value as shown below.

Group	Original Cost Per Car Depreciated	Per Diem Rates
1	$ 1,000.00 and less	$ 2.16
2	1,000.01 to $ 5,000.00	2.79
3	5,000.01 to 10,000.00	3.58
4	10,000.01 to 15,000.00	4.50
5	15,000.01 to 20,000.00	6.15
6	over 20,000.00	7.74

The scale subsequently was modified effective April 1, 1965, reflecting higher per diem rates on the more expensive cars, as shown below:

Group	Original Cost Per Car Depreciated	Per Diem Rates
1	$ 1,000.00 and less	$ 2.16
2	1,000.01 to 5,000.00	2.79
3	5,000.01 to 10,000.00	3.58
4	10,000.01 to 15,000.00	4.50
5	15,000.01 to 20,000.00	6.15
6	20,000.01 to 25,000.00	7.11
7	25,000.01 to 30,000.00	9.00
8	30,000.01 to 35,000.00	10.18
9	35,000.01 and over	12.18

The ICC prescribed a multi-level rate structure in January, 1968 to resolve contested per diem rates. The promulgated rates were a combination of daily and mileage elements.[64] The components varied, depending upon the original, nondepreciated cost of the equipment. The lowest daily charge was $.63 per day, the highest, $10.22; the lowest mileage charge was 1.39¢ per line-haul mile, the highest, 4.60¢. Proponents of higher daily charges found inequities and resorted to the courts for judgment on the reasonableness of the ICC's finding; this

delayed the order's effective data. The litigation procedure ultimately led to a United States Supreme Court ruling on November 1, 1969, affirming the lower court's adjudication in the ICC's favor.[65]

Proponents of the higher daily charge resorted to Congress to rectify the alleged injustice perpetrated upon car efficiency by the Supreme Court. Twenty-one United States Senators introduced S.3223 on December 9, 1969, to the Ninety-First Congress, First Session.[66] The bill stipulated that per diem charges be based on current replacement costs, recomputed annually, and assessed as a daily charge. The ICC's opposition to the proposed legislation contended that the ICC's discretion would be impaired and that per diem computation would be a permanent ICC function.[67] Hearings were held in March and April, 1970, but no further congressional action resulted. In a subsequent action, the ICC revised the basic structure, grouping freight cars into eighty cost brackets with a car value range from $1,000 and under to $159,000.[68] In the revision, the lowest daily and per line-haul mile charges remained at $.63 and 1.39¢ respectively, for the oldest, lowest-valued cars; the highest charges increased to $38.58 per day and 14.03¢ per line-haul mile on the newest, highest-valued cars. The revised rates became effective September 1, 1970, retroactive to August 1, 1969.

Results of the ICC's investigation, Ex Parte 252, Incentive Per Diem Charges, mentioned on page 78, first appeared in October, 1967. The ICC ruled that an incentive rate would not improve operating practices, encourage utilization, or increase the national fleet's size. It also acknowledged that the multi-level rate structure did not result in distinctive efficiencies on different-valued cars.[69] The investigation, then, was discontinued. In one of two dissenting opinions, Commissioner Rupert Murphy condemned the ruling as a shirk of the ICC's responsibilities under Public Law 89-430. He cautioned that the low contemporary rates encouraged non-owners to retain freight cars and alleged that incentive charges would increase utilization.[70] The investigation was reopened, under Ex Parte 252 (Sub-No. 1) Incentive Per Diem Charges--1968, and called for re-examination of the data.[71] As a result, incentive per diem was prescribed on general service boxcars for each September-February period. The incentive revenue was earmarked for new car purchases. The lowest incentive rate was four cents per day on the oldest, lower valued cars; the highest, $12.98, on the newest, higher valued cars.[72] Litigation followed the decision, with one court ruling in the ICC's favor[73] and two other decisions still pending in the United States Supreme Court at the time of this writing.[74]

In the same month of the ICC's incentive-rate decision, S.3334, mentioned on page 81, was introduced to Congress. In addition to the $100 per day minimum per diem, it provided for non-compliance penalties ranging from $1,000 to $10,000 plus $200 daily.[75] No further action resulted from the hearings on the bill.

Appraisal

The per diem activities since 1902 indicate that some basic issues have never been resolved. This many-faceted dilemma has persisted because of the carriers, the ICC, and United States Congresses. Apparently, the complexities of property in control of non-owners, divergent utilization interests, and the absence of enforcement authority have permitted the travesty to exist. The per diem history should raise inquiry seeking more fundamental issues than those which have been treated.

The purpose of per diem never has had a strong foundation. It is a basic business philosophy that objectives be established if succeeding actions are to be evaluated. The objective, or real per diem purpose, should be posited. Reflecting on the manner in which the continuing difficulties were approached, it seems reasonable to assert that there is no consensus on per diem's purpose. History shows that the earliest inter-carrier rates were established on a mileage basis. Undue

detention for speculative purposes, coupled with suspicion of dishonesty among the railroads, caused a change to a daily charge. To encourage early return to the owners, a charge of eighty cents per day in addition to the twenty-cent rate was established in 1902, if the freight car was not returned to the owner within thirty days after recall. This penalty charge eventually was dropped as the daily charge started its ascent. Clearly, the penalty charge had car return as its objective. The McCrea Commission per diem components, mentioned on page 80, did not allow for a car-return incentive. Virtually all of the prescriptions since that time have ignored the car-return incentive. Concilatory rate attempts have focused on owner's cost, depreciation, repairs, and other maintenance expenses. The car's value to the owner has been excluded. The Court's decision in the Palmer case, which precipitated tedious legislative activity, stated the restrictive per diem constraints. The reason for the issue was the owners' desire to recoup more than the "barebone" ownership costs, since they were deprived of the equipment's usage. To the present day, there has not been an intention to include charges to discourage non-owner inefficiencies. This contention is confirmed in the ICC's first prescription of the per diem level in 1968, in which it was stated as follows:

> . . . the carrier obtaining the use of the car . . . may not be required to pay therefor more than the average cost it would have incurred as owner of the car or by use of its own car. . . . We agree with the conclusion of the examiner that the "compensation" mentioned in section 1 (14) (a) of the act relating to "basic" per diem does not include any element of profit to the owner of the car and may not be measured by the benefit which the user derives from use of the car. Per diem charges are in the nature of a reciprocal charge and are designed to represent the average cost of car ownership. The charge should be equivalent to the average car ownership costs which the users would have to bear if they owned the car.[76]

This decision contains patent incongruities. The ICC sought per diem authority after its setback in the Palmer case. Public Law 89-430 explicitly allows for a fair return on value consideration, as well as an incentive element, as described on page 78. The evidence of car value or incentive in ICC decisions clearly is lacking.

The ICC's per diem decisions have incited controversy, giving credence to the dubious improvement which could be expected therefrom. Mr. T. Q. Hutchison, of the U.S. Department of Agriculture's Economic Research Service, attacked the ICC formula in 1968, claiming that utilization had been hampered. He illustrated with a low-valued car which could stand idle for 135 days and then be moved at a $2.00 per ton rate, showing a net profit to the non-owner.[77] Mr. Richard C. Grayson, president of the St. Louis-San Francisco Railway Company, criticized the ICC formula at a 1970 car shortage hearing,

using an illustration which reduced the time portion of the new rate over the old rate by 30 percent.[78] In a study of the new structure, Mr. Patrick Boles, of the U.S. Department of Agriculture, showed where a non-owner would have saved $741 by using others' cars under the old system, but would have saved only $586 under the new structure, on a car valued at $12,000.[79] Also, a recent article in the Harvard Law Review criticized the ICC for exclusion of opportunity costs and reduction of charges to the Eastern carriers.[80]

The examples illustrate the potential and probable abuses to efficient car utilization. Ironically, mileage rental charges were discarded in 1902 because of their inherent abuses. The ICC acknowledged those abuses in its 1902 annual report, as mentioned on page 68 of this work. Granted, the business environment has changed considerably in seven decades and record-keeping has taken on a greater aura of sophistication. The inherent mileage-rate disadvantages cannot be denied if freight cars are viewed as transportation vehicles and if efficiency is to be extracted from movement through time.

If the incentive element is eliminated and the objective is cost remuneration, a number of issues are raised. Per diem rates minimally should allow for the equipment cost. Costing methodology is beyond the scope

of this work, but analytic acuity is not required to fathom diverse costing approaches. Opportunity costs to the owners, defying description, realistically cannot be included. But serious questions can be raised on past methodology in view of the low per diem rate levels and the trend in new car costs. The rising average new freight car costs between 1956 and 1970 are shown in Table IV-3. The past costing method would seem to have been deficient in compensating owners. And, if the per diem rate is cost-based, the car's primary function, i.e., commodity transportation, is ignored. Then per diem's objective becomes an issue of investment in property.

Another of the unresolved issues, if there is to be no incentive in per diem rates, is the selection of the investing railroads. Those primarily terminating railroads control a greater number of empty cars than primarily originating lines. The vehicles are available to supply the terminating roads' shippers and the owners then are in short supply. The ownership risk is assumed by the buyers and the benefit is enjoyed by the users. The owners' loss of business is an opportunity cost which is not included in the per diem rate. Originating Western carriers then evolve as car providers and the terminating Eastern railroads are exempt from ownership risk and capital outlay. To combat this problem, the ICC approved

TABLE IV-3

AVERAGE COST OF NEW FREIGHT CARS, 1956-1970
(Class I Railroads)

Year	General Service Box Cars	Special Service Box Cars	All Freight Carrying Cars
1956	$ 7,891	$10,276	$ 8,136
1957	8,888	11,023	8,667
1958	8,712	11,111	9,144
1959	9,851	12,618	10,319
1960	10,629	12,767	11,100
1961	10,715	13,000	11,315
1962	11,469	14,803	11,777
1963	14,265	15,679	14,055
1964	13,083	17,534	14,061
1965	14,610	19,821	15,448
1966	12,167	18,129	15,320
1967	11,955	17,877	14,591
1968	14,265	23,731[a]	13,471
1969	15,334	27,251	15,607
1970	18,401	24,352	17,161

Source: U.S., Congress, House, Committee on Interstate and Foreign Commerce, Inquiry into Freight Car Shortages, Hearings, before the Special Subcommittee on Interstate and Foreign Commerce, House of Representatives; Part II, 92nd Cong., 1st and 2nd sess., 1972, p. 702, Supplement C (originally taken from U.S., Interstate Commerce Commission, I.C.C. Transport Statistics in the United States, except 1970 from Railroad Annual Reports).

[a]Some equipped general service cars may have been classified as special service cars in 1967 and prior years.

a car ownership formula designed to determine each railroad's proportionate share of the national rail car fleet in 1969.[81] It also ordered car service rules requiring car return in the direction of the owning lines. The subject of car service rules will be covered extensively in Chapter V. The ICC's rules were designed to force some railroads to buy more cars.[82] As a practical matter, there is some question whether the Eastern carriers can adhere to the ownership formula. First, the conditions which long have existed, allowing them to use the Western roads' cars and to continue gross operating inefficiencies will be difficult to reverse and will require strict policing and enforcement. Secondly, the Eastern carriers' financial condition, a matter beyond the scope of this work, will be another force precluding fulfillment of the ICC's intention.

An objective in this action, however, appears to be emerging--the return of owners' cars. Car service rules must be respected and enforced if they are to be effective. History shows that such rules have been less than effective, notwithstanding violation penalty assessment. Car service orders are discussed in the next chapter. They cannot totally be ignored at this point because of their relevance as a per diem substitute. In 1956, Coughlin advised of service-order enforcement

difficulties and railroads' cognizance of improbable violation detection.[83] In 1971, the Southern Pacific's Mr. R. D. Spence pointed out the cumbersome operational procedure which prohibits adherence to the ICC's orders and suggested: " . . . a rationalized per diem system, . . . would be more effective and economical than inflexible mandatory orders."[84]

In addition to the lack of per diem objectives is the absence of priorities. The Hepburn Act of 1906, as described in Chapter II, requires all railroads to provide transportation instrumentalities, which includes freight cars. If the common carrier is required to provide transportation equipment and has made the necessary investment, then that road should have access to its property's usage. The nature of rail transportation, with required car interchange, precludes strict adherence to this principle. If provision for the cars' return is not allowed, then the owning line cannot adhere to its legal obligation. The participants' divisiveness calls for an intermediary's resolution. The AAR has demonstrated its inability to rectify the dilemma. The ICC must take an aggressive role to assure the railroads' wherewithal to fulfill their commercial and legal obligation. The only adequate means for such assurance is the expenditure imposed on non-owners. If this expenditure is equal to the users' expense if the equipment were

his own, he is indifferent and logically will use another's equipment. If the expenditure varies minutely, he still is indifferent because speculation allows car retention rather than return. If the charge is sufficiently high to discourage retention, then the equipment will be returned. History shows that the charges have neither attained that level nor had that objective since this century's first decade. History shows that low per diem charges have encouraged inefficiencies. It also shows that freight car supply problems have increased in frequency and magnitude as the equipment's cost has increased, with no proportionate increase in the inter-carrier rental rates. If justice is to be served the ICC must rectify the inequity by the imposition of charges which will encourage car return. Logically, if this is not accomplished, then further legislation should be enacted or sections of the Hepburn Act repealed so that railroads are not required to provide freight cars. The chaotic consequences of such an extreme measure need no further elaboration.

The ICC may be reluctant to take a more aggressive approach because it feels that proper authority is lacking. This is evidenced in its recommendation to Congress in 1971[85] and repeated in 1972[86] for penalty per diem authority during a "threatened" emergency. The criteria

which constitute an "emergency" is lacking. Clearly, some rectification of this problem is required. Legislation implementing the recommendation of the ICC and clarification of an "emergency," however, would not be adequate to resolve the more basic issues. Constrained ICC authority permits the railroad industry's prolonged divisiveness which has characterized intercarrier relationships for decades to continue. Continuation of the contemporary philosophy accomplishes nothing more than to give assurance that the AAR's organizational structure will insure the ICC with the security of resolving intercarrier differences through long, involved, and complex procedural protocol. During the interim, low car rental rates will not contribute to concentration on the existing fleet's utilization. With no incentive to increase efficiency, railroads will contribute to further service deterioration and the country's general economy will suffer the adverse effects. Increased inefficiencies and growing discontent will cause a further decline in railroad freight transportation and result in a less profitable operation. The railroads will continue to seek federal government subsidization, the granting of which is tantamount to the sanction of gross operating inefficiencies.

The United States Congresses have contributed no small measure to the problems which have evolved. In

1950, the ICC requested per diem authority to resolve the problem created by the AAR's inability to effect an amicable solution. The legislative history is less than admirable. Congresses have accepted a multitude of proposals, conducted innumerable hearings, received an untold number of constituents' complaints, and appeared unmoved by the deteriorating conditions. Implications of political division abound. Treating the symptoms and ignoring the cause certainly invites the illness to return.

The process to effect improved freight car utilization has been less than satisfactory. Prior to the start of the current car shortage era, a United States Senate special study group criticized the historical per diem issue events. The group's report, in 1961, requested that the ICC be freed of legal technicalities which had hampered its efforts.[87] Nothing further was done for five years. The per diem rates continued to encourage unequal freight car distribution. At the start of the current problem era, the Senate report advocating S.1063's adoption, which would grant the ICC its requested authority, advised that the railroads which opposed the bill had an average of 110 percent of their car ownership on their lines. Four opponents which exceeded the average were the Pennsylvania, with 128 percent; New York Central, 122.7 percent; New Haven, 175.3 percent; and Boston and Maine, 180.4 percent.[88]

Two years passed before action was effected. The ICC was endowed with per diem authority plus additional incentive authority during emergencies. It then advocated a questionable level of rates. The ICC provided evidence that its prescribed rate level had not increased efficiency--that railroads have purposely delayed portions of unit trains during 1969 and 1970. Table IV-4 has been extracted from the ICC's 1971 presentation. In view of these circumstances, it is difficult to rationalize the ICC's 1971 contention that additional government financial assistance is needed to resolve freight car problems.[89]

The need for affirmative action is urgent. The basic fundamentals which this writer alleges are lacking must be confronted. Per diem's purpose should be stated to guide policy formation. This policy evidently cannot be determined within the industry and must be superimposed from without. If the federal government is being requested to provide freight cars, in any of the forms advocated by the legislative proposals presented in 1971, then it should assert per diem objectives. If railroads are held responsible for freight car provision, then they should have access to their property and per diem rates must be established to assure car return. Resource underutilization should be expected because of the empty car mileage increase.

TABLE IV-4

CAR DELAYS CAUSED BY CARRIERS

Carrier	Date	Number of Cars Involved	Days Delayed
A	Feb. 11, 1970	34	3 to 10
B	July 15, 1970	85	16 to 43
C	March 17, 1970	592	3 to 17
D	Aug. 26, 1969	33	4 to 30
E	Oct. 31, 1969	110	3 to 35
F	Oct. 1968 to Feb. 1970	236	5 to 19
G	Various 1970	463	3 to 50
H	May 21, 1970	36	4 to 36
I	Various 1969	1,135	3 to 39
J	Various 1969	1,302	5 to 19
K	Various 1970	182	3 to 16
L	Various 1969	202	5 to 23

Source: U.S., Department of Transportation, Division of Engineering, National Research Council, National Academy of Science--National Academy of Engineering cooperating, "Freight Car Supply and Utilization: The Regulatory View" [by Rupert L. Murphy], Improving Railroad Freight-Car Service (Washington, D.C.: Office of the Secretary of Transportation, Rept. DOT-OS-00035 Task Order 10, 1971), p. 32, Table 2.

In conclusion, the ultimate solution lies with the United States Congress. The federal government has been invited by the railroads to become more involved in the industry in the form of huge monetary expenditure. The invitation should be accepted; the form should be altered. Sufficient evidence exists to warrant an increased efficiency demand. Logic appeals that justice be served and inequities rectified. The Congress must provide for and insist upon resolving action by the ICC, not in time of emergency or threatened emergency, but in normal operations. Condoned inefficiencies in normal business conditions are difficult to reverse in emergency situations. There is no rationale for costly inefficiency regardless of the business environment. The American public is paying for the existing inefficiency. Now it is being requested to subsidize further inefficiency so that additional freight cars can be subjected to the same mismanagement. It is reasonable to expect that costly inefficiency will be eliminated or the offenders will suffer demise. Per diem charges have permitted low-cost inefficiency and underutilization at the expense of the economy, the public, and the owners. High cost commands respect. High per diem will command respect for freight cars. An adequate national car fleet can never be determined without proper utilization that

penalty per diem charges should bring. Congress' mandate to the ICC must be clear. The economy may be expected to absorb the consequences of a less-than-utopian freight transportation system, but the participants are entitled to equity. Congress' reluctance to confront the problem has resulted in a more critical situation. Only a less complacent, more aggressive approach by the federal government will stave off further wasteful expenditure which encourages a deteriorating system to further decline. If this problem is not confronted in the near future, one of greater magnitude awaits.

FOOTNOTES--CHAPTER IV

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CHAPTER V

CAR SERVICE ORDERS--NATURE, USAGE, AND EFFECT

Early History

The structure of railroad transportation necessitated close inter-railroad relationships. Increasing communiques prompted railroad meetings to establish time schedules alleviating the need for regular communication and providing greater performance efficiency. The first meeting on May 14, 1872, was attended by twenty-three railroads.[1] The organization, officially named the General Time Convention in 1875, resolved to consider other mutual matters at its 1885 conclave.[2] Its actions were recommendatory and not considered binding on any members. The name was changed to the American Railway Association in 1891.[3] Uniform car service interchange rules were adopted on October 12, 1892.[4] Foreign freight cars were to be given tendering preference for shipments made to or via the home line's territory.[5] Allowing for various contingencies, the current car service rule structure remained essentially the same. Originally,

immediate empty car return was not stipulated so that maximum utilization could be realized with fewer freight cars.

Strict rule adherence became paramount during the World War I era. The American Railway Association's Commission on Car Service was formulated in 1917 to cooperate with the ICC in effectuating car handling efficiency. It was permanently established as the American Railway Association's Car Service Division in 1920. Its purpose was to police the rules' application and empty-car return if no loads were available, suspend the rules for contingencies, distribute cars for seasonal or emergency movements, and work in conjunction with the ICC in all car service matters.[6] Members agreed to abide by the promulgated rules, but violation penalties were not prescribed by the AAR, successor to the American Railway Association, before September 1, 1971.[7] A $50 penalty charge now is assessed per car or per order for violations.[8]

The ICC and Car Service Orders

Intercarrier differences affecting efficient car utilization were commonplace throughout the twentieth century's first two decades. The ICC alluded to the problem in its first car shortage investigation report, citing a " . . . deep-seated and organic trouble."[9] The

ICC's 1916 investigation found cars congesting terminals in some territories while car shortages were forcing discontinued commercial activity in others.[10] It requested car service authority, partially blaming non-compliance of car service rules for car shortages.[11] The Esch Car Service Act of 1917, described on pages 15 and 16 of Chapter II, fulfilled the request. It was deficient, however, in the provision to include all vehicles used in railway transportation, which then was incorporated in the Transportation Act of 1920.[12] The Bureau of Service was established to administer the ICC's responsibility during emergency situations. It worked closely with the AAR's Car Service Division policing service rules and encouraging efficiency and also handling car service complaints with all involved entities.

Car Service Agents

Surveillance of approximately 20,000 railroad stations was conducted by the Bureau of Service's car service agents starting in 1922. The small force increased to seventeen by 1931. Forty temporary agents were added during World War II. The staff's activities were highly praised by the ICC as being responsible for utilization efficiencies and ameliorating threatened crises.[13] The force's size was reduced to thirty in 1949 because of appropriation reversals, but was augmented during the

Korean conflict by a Defense Transportation Administration working fund. The ICC repeatedly requested a larger staff during the early 1950s,[14] and funds were granted for forty new agents in late 1955, raising the force to seventy. The agents' accomplishments in meeting the post-Korean car shortage problems were highly praised by the ICC in 1956, which cited improved car utilization and greater user and railroad cooperation.[15] Subsequent budgetary restrictions resulted in staff reductions after that period. By 1972, the staff dwindled to forty-six. A 1972 car shortage investigation report addressed the service agent topic.[16] The agents' multifarious activities were detailed and then the report advocated a larger staff. The report cited $1 million in penalties during 1970 that were added to the U.S. Treasury. The report also criticized the political implications of the Office of Management and Budget's refusal to fulfill Congress' authorization for twenty-three additional agents in 1971 and twenty-one in 1972.

Penalty Violations of Car Service Orders

Complete penalty-violation data was not available for this study. Penalty assessment information for 1969 through 1971 was provided and gave some conception of detected non-observance of the ICC's orders by a

relatively small service agent staff. Railroads were penalized $315,700 and $569,425 in 1969 and 1970, respectively;[17] the total rose to $847,350 in 1971.[18] A penalty and offender recap during 1970 is shown in Table V-1, to illustrate the number of railroads involved and the individual claim amounts. In addition to the Bureau of Service's assessed penalties, the AAR penalized members for car rule non-compliance. This recently established procedure resulted in assessments of $44,300 between September 8, 1971, the date of inception, and March 30, 1972, and was comprised of twenty-one citations.[19]

Nature and Some Effects of Car Service Orders

The ICC's car service orders have been consecutively numbered since the procedure's inception in 1920, but the approximate 1100 directives issued by the year 1973 are not indicative of the activity involved. Many orders have been expanded, exempted, reinforced, and modified in some manner, with each subsequent action carrying the originally issued number. Service orders have varied--no attempt is made in this work to summarily describe all ICC directives. Rather, separate treatment is afforded commonly-used orders which attempted to increase car efficiency or were of paramount importance to the fleet's utilization. The orders which were issued

TABLE V-1

CAR SERVICE ORDER VIOLATION PENALTIES, 1970

Date	Railroad	Amount
January 12	Gulf, Mobile and Ohio	$ 30,000
February 6	Galveston, Houston and Henderson	2,800
February 9	Chicago and North Western	49,875
February 12	Southern Pacific	45,250
February 13	Texas and Pacific	16,700
March 13	Norfolk and Western	87,500
April 17	Burlington Northern	84,500
April 27	Union Pacific	58,450
April 28	Colorado and Southern	15,000
May 12	Seaboard Coast Line	2,600
May 27	Missouri-Kansas-Texas	10,000
June 15	Kansas-City Southern	22,000
July 9	Waterloo	11,200
August 12	Patapsco and Backriver	11,550
November 23	South Buffalo	4,000
November 24	Chicago, Rock Island and Pacific	40,000
November 27	St. Louis-San Francisco	18,000
December 2	Reading	20,000
	TOTAL	$569,425

Source: U.S., Interstate Commerce Commission, Bureau of Enforcement, personal correspondence.

for more specific situations or which were uncommonly employed, authorized such actions as: car substitution, which allowed shipments in freight cars other than those prescribed for the commodities; use of tractage owned by other than the participating carrier for special contingencies such as floods or facility braakdown; and shipments to destination points which were embargoed because of congestion. Others prevented shipments to specific destinations which were congested because of labor difficulties or excessively heavy traffic volume; peddling from freight cars, which permitted excessive storage while retail sales were made directly from the cars; and excessive reconsignments or diversions on shipments, which tended to delay transportation.

In the following discussion, occasional reference is made to turnaround time, a commonly used railroad utilization efficiency measurement. This standard's limitation is recognized at the outset. Turnaround time connotes the interim between the time a freight car is loaded, used in transportation, and then reloaded for another movement. The measurement's weaknesses preclude turnaround comparisons between or among time periods. The economic business environment affects turnaround time. Return load availability in the primary movement's reverse direction affects turnaround time. A diminishing freight car demand has increased idle equipment, inflating

turnaround time. An increasing number of bad-order cars also reduces turnaround time. The enforcement level of car service rules or car service orders affects turnaround time. Closer contemporary rule surveillance, with a greater penalty risk, encourages rule compliance and increases utilization. Demurrage rate levels may affect turnaround time. Higher rates may discourage some warehousing in freight cars and decreases turnaround time. With freight cars under the users' control approximately 40 percent of the time, demurrage rates may have a profound effect on this measurement standard.

The discussion now turns to the nature of car service orders and possible utilization implications.

Expeditious Routing

Shippers select desired freight-car routing. In the absence of a shipper designated routing, the carrier selects a route which assures its longest participation in the movement. Constraints are placed on this practice to prevent unduly circuitous shipments, but sufficient leeway is provided to allow more than the shortest distance between two points. The excess mileage in the following discussion will be referred to as the "circuity factor." The circuity factor is the percentage of total mileage which exceeds the shortest rail distance between origin and destination.[20]

During government control of the railroads in the World War I era, the Director General of Railroads, Mr. William G. McAdoo, recognized circuity adversities and eliminated all circuitous routes in his first car service order.[21] Congestion was reduced and existing facilities more fully utilized.[22] The ICC's first directive issued under its new authority contained the same routing restriction.[23] The ICC repeated such orders during other critical periods.

Railroad transportation's competitive nature must allow for a degree of circuity because each road cannot physically provide the shortest distance between two points. The circuity factor provides insight into the additional mileage incurred in railroad transportation. Seven circuity studies have been made; the most recent concerned 1964 data. Listed below are the national circuity factors uncovered in those studies.[24]

Year	Circuity Factor (percentage)
1933	.11
1938	.12*
1942	.13
1944	.14
1947	.14
1950	.13
1964	.15

*Rail movements of new automobiles only.

The effect of permissive circuity on the car fleet and the national economy is imposing. In an

oversimplified approach, AAR 1964 data will be used to illustrate its impact. Freight cars traversed 28,921,589,000 miles. The 1964 circuity was 15 percent, which results in 4,338,238,350 excess miles. Using the average 50.0 miles per day per car, 86,764,767 freight-car days were represented by this excess mileage. The turnaround was 20.08 days; thus, a possible 4,320,955 trips could have been achieved. Each car made 18.1 trips. The equivalent, yearly service of 238,727 cars is represented by the circuitous routings. At the average new car cost of $14,061 in 1964, $3.357 billion would have been expended to realize the same results as elimination of circuity. In 1964, there was a critical car shortage problem.

The circuity problem was cited in 1944 by a special subcommittee appointed by the Truman administration. In its report, the subcommittee expressed the undesirability of circuitous shipments during periods when transportation facilities were being strained.[25] A circuity issue was raised in a car shortage hearing in 1955.[26] Examples of ten to twelve excess transit days, involving an extra 1,000 miles, were given. A lumberman's association cited an extra twenty shipping days because of circuity. The ICC complained about circuitous slow-routing in 1962 and alluded to the practice's

illegality.[27] At a 1971 car service workshop, Professor Roy J. Sampson suggested the imposition of additional freight charges on deliberately slow-routed shipments, particularly during peak seasons.[28]

Mr. T. Q. Hutchison stated that both administrative means and economic incentive to reduce circuity were lacking.[29] It would seem that any effort to correct circuity's dilatory effects would improve freight car utilization.

Heavier Car Loadings

Unused car capacity has existed throughout the history of railroad freight transportation. Table V-2 lists the annual aggregate car fleet's average capacity and average car loadings in tons for the available years.

Heavier car loading increased utilization during the World War I era. A 9.3 percent increase in loading, from 24.8 tons in 1916 to 27.1 tons in 1917, resulted in a saving of 1,350 million car-miles and allegedly contributed to fewer car supply problems.[30] As a result of a special program, heavier car loadings in 1923 resulted in a 23 percent increase in ton-mileage over 1915 shipments with only a 13 percent increase in freight cars used, as reported by the National Industrial Conference Board.[31] The ICC credited heavier car loadings for the seventy billion ton-mileage increase in 1941 over 1918,

TABLE V-2

YEARLY COMPARISONS: AVERAGE FREIGHT CAR CAPACITIES AND AVERAGE FREIGHT CAR LOADINGS, 1929-1971
(Class I Railroads)

Year	Average Car Capacity (tons)	Average Car Loading (tons)	Year	Average Car Capacity (tons)	Average Car Loading (tons)
1929	46.3	35.4	1951	52.9	42.0
1930	46.6	35.7	1952	53.2	41.8
1931	47.0	35.4	1953	53.5	41.8
1932	47.0	34.9	1954	53.7	41.4
1933	47.5	35.5	1955	53.7	42.4
1934	48.0	35.4	1956	54.0	43.1
1935	48.3	35.6	1957	54.5	43.8
1936	48.8	36.3	1958	54.8	43.5
1937	49.2	36.7	1959	55.0	43.5
1938	49.4	35.8	1960	55.4	44.4
1939	49.7	36.8	1961	55.7	44.9
1940	50.0	37.7	1962	56.3	45.4
1941	50.3	38.2	1963	56.8	46.7
1942	50.5	40.1	1964	58.3	47.8
1943	50.7	41.0	1965	59.7	48.9
1944	50.8	40.3	1966	61.4	50.1
1945	51.1	39.9	1967	63.4	51.1
1946	51.3	39.6	1968	64.3	51.8
1947	51.5	41.0	1969	65.8	53.5
1948	51.9	41.6	1970	67.1	54.9
1949	52.4	40.6	1971	68.3	54.9
1950	52.6	41.0			

Sources: Railroad Transportation
Yearbook of Railroad Facts

with one-half million less cars.[32] The Office of Defense Transportation then ordered all freight cars to be loaded to the cars' marked capacities.[33] During that period, the ICC took other measures to utilize car capacity. In one, it disallowed the promiscuous use of cars other than those ordered where weight requirements were ignored. Shippers had been exempted from car weight requirements when desired cars were unavailable. After the order, a survey revealed that the number of cars used at a pier decreased 71.5 percent; average car weights increased 83.8 percent; and total tonnage decreased only 47.7 percent. At another pier, number of cars used decreased 53.8 percent; average car weight increased 79.8 percent; and total tonnage decreased 16.9 percent. At a third pier, number of cars used decreased 45.5 percent; average weight increased 73.1 percent; and total tonnage decreased 5.7 percent. All comparisons were made between January and April, 1942, shipments.[34] The evidence shows that heavier car loadings can be encouraged.

During the recovery from the post Korean recession, car weight average slipped to 30.91 in 1954 from 31.06 in 1953. The ICC stated that 89,649 fewer shipments would have resulted if the 1953 average had been maintained.[35] Using 1953 data, Coughlin showed that a one ton increase in each carload would have resulted in 1,031,257 less

shipments.[36] The average weight increase of 1956 over 1955 resulted in 565,339 fewer shipments than would have been required at the 1955 average;[37] the increase in 1957 over 1956, in 470,520 fewer shipments;[38] and 1961 over 1960, 335,439 fewer shipments.[39]

Heavier car loadings have mitigated the need for a larger car fleet, as shown by the illustrations. Although the ICC has placed mandatory minimum weight restrictions with past service orders, average car loadings still hover around 80 percent of car capacity.

Railroads have countered diminishing car fleet complaints by pointing to larger capacity cars, which is validated by Table V-2. The higher capacity cars, however, offset the fleet's declining size only if the users exploit the equipment. Car service orders resulted in heavier car loadings, but the averages on the national freight car fleet's usage clearly imply that improvement in this area is possible.

Unserviceable Freight Cars

The age, mechanical nature, and abuse in car loading and unloading requires that repairs be made to maintain serviceable rolling stock. A high unserviceable car ratio places greater demand on the remaining cars of the national fleet. During emergencies, the ICC has

ordered car repair program investigations and has issued service orders expediting repairs.

Table V-3 lists the average annual percentage of the national car fleet which was rendered unserviceable. It is of particular interest that the lowest bad-order ratios occurred during the era of World War II, the period acclaimed to be the epitome of railroad transportation efficiency. It also is of interest that the periods of high percentage occurred immediately prior to the major car shortage problem periods. To wit, the years preceding World War II, the Korean conflict, and the middle of the 1960s were characterized by unusually high ratios.

Improved car repair programs first were solicited at the Twentieth Annual Convention of the National Association of Railway Commissioners in 1908. The convention criticized the railroad practice of storing unserviceable cars during slack shipping periods, only to face business upturn with a diminished fleet.[40] A similar diatribe was lodged at a 1955 freight car shortage hearing at which it was shown that the lowest bad-order ratios occurred as slack periods in given years approached and highest ratios appeared at the start of peak shipping seasons.[41]

The ICC criticized the unserviceable car ratios which occurred during the 1957-58 problem period, the highest percentages since 1940. In its 1959 annual

TABLE V-3

ANNUAL PERCENTAGE OF NATIONAL FREIGHT CAR FLEET REPRESENTED BY UNSERVICEABLE FREIGHT CARS
(Class I Railroads)

Year	Percentage	Year	Percentage
1929	6.0	1954	6.2
1939	12.8	1955	6.0
1940	8.8	1956	4.2
1941	5.4	1957	4.6
1942	3.2	1958	7.1
1943	2.7	1959	8.4
1944	2.7	1960	8.2
1945	3.5	1961	9.5
1946	4.2	1962	7.6
1947	4.2	1963	7.0
1948	4.6	1964	5.4
1949	6.2	1965	5.1
1950	6.9	1966	4.4
1951	5.1	1967	4.6
1952	5.4	1968	4.8
1953	5.1	1969	4.9

Sources: Railroad Transportation
Yearbook of Railroad Facts

report, the ICC revealed that six Eastern carriers held 15.4 percent of their cars unserviceable in 1958, compared to the national average of 7.6 percent. In 1959, the Eastern railroad percentage rose to 20.1 percent; the national average rose to 7.9 percent.[42]

A special study group commissioned by the United States Senate in 1961 to investigate transportation policies included an unserviceable car discussion in its report.[43] It claimed that reduced car repair programs during slack periods should be reversed. It referred to the contemporary ratios of 9.2 percent in 1959 and 8.9 percent in 1960. It also suggested that 4 percent was the upper limit expected under good maintenance conditions.

The ICC's car-repair directives in 1950 and 1955 may be partially responsible for the decrease in bad-order cars in 1951 and 1956, with the latter years experiencing less car shortage problems than the former. The study of this aspect allows another inference. The scanty available information indicates unserviceable car concentration in the Northeastern sector. Low per diem rates may have an interrelationship with unserviceable cars. Some railroads may find it more feasible to rent others' cars than to incur repair expenses on their own.

Clean Cars

Cars completely free of dunnage and debris after unloading are placed into loading service. Consignees' failure to return freight cars in reusable condition causes reloading delays. Mr. Arthur Gass, former chairman of the AAR's Car Service Division, testified at a 1955 car shortage hearing that receivers were using the vehicles as trash receptacles and subsequent cleaning procedures removed three to four days from a car's useful life.[44]

The ICC occasionally requested expedited car cleaning through the issuance of service orders. Recognizing the problem's source to be the users, the AAR advanced a proposal in 1967 to elicit patrons' cooperation. A penalty assessment of $25 was proposed whenever a receiver returned a dirty car, which constituted noncompliance with Rules 14 and 27 of the Uniform Freight Classification. The request received an unfavorable ruling by an ICC examiner[45] and was continued until 1972 at which time it was rescinded.

The ICC's 1969 service order required expeditious car cleaning procedures. The ICC also campaigned for enforcement of railroad rules which required clean car return by the consignees. As a result, the car fleet's capacity increased and some carriers closed some cleaning tracks.[46] The campaign's thrust alluded to the

illegality of free trash removal service provided by the railroads.[47]

Interestingly, ICC Commissioner Rupert L. Murphy advised that some carriers recently assured consignees that the clean car rules would not be enforced; this was viewed as a competitive tool.[48] From the cited results, it would appear that discouragement of this practice and stricter enforcement of car cleaning rules would contribute to lower cost operations and an improved car supply.

Returning Empty Cars

During periods of car shortages, the ICC has directed empty car redistribution. Two types of orders were issued. The first placed cars in territories which had a greater demand for a particular freight car class. For example, the ICC's second and third service orders at the inception of its car-service authority provided as follows:

> (2) that various western carriers should deliver 30,000 open-top cars to eastern connections; and
> (3) that eastern carriers should deliver 20,000 serviceable box cars to western connections.[49]

More commonly, the ICC ordered empty car return to, or in the direction of, the owner. The latter type caused considerable difficulty and now raises some question as to the need for the former car distribution method.

Car service rule formulation in 1892 provided for empty-car return to, or in the direction of, the owner, as described on page 113. Car return provisions have been a part of the railroad associations' car service rules since then. The ICC issued separate service orders directing compliance with these rules on many occasions, but it was not until August 21, 1969, that it rendered a mandatory-adherence decision that those rules be followed regularly.[50] The decision was appealed and a restraining injunction was issued by a three judge Federal District Court in Pittsburgh on March 18, 1971.[51] An ICC appeal resulted in a Supreme Court ruling reversing the Federal District Court's decision, allowing the car service rules' enforcement.[52] It is curious that any protest would be evoked on rules formulated by the railroads' associations.

Expediting Car Handling

The most commonly used ICC general purpose service orders were those which affected operating performance. Railroad efficiency has been cited as a car shortage contributor throughout the twentieth century. Many mentioned terminal congestion and operational disutilization as the causes of the first major car supply problem.[53] A tome could be compiled of the operating efficiency criticisms since that time.[54]

The ICC's need to enter the operations area to improve efficiency raises some questions. Logic expects each carrier to expend maximum efficiency effort. On the contrary, the ICC dictated operating rules because rail carriers have not attempted to achieve maximum productivity. A complete operations investigation is beyond the work's scope. Available information, however, allows some conjecture on total transportation efficiency. Annual turnaround time data is listed in Table V-4. It appears that a diminishing car supply and an increasing freight car demand has not materially improved transportation service. The same turnaround data will be used in this discussion of the ICC's attempts to improve operations during critical supply periods.

The ICC's first improved productivity thrust was made in 1947 with its Service Order 778.[55] The order's strict operating rules were rescinded when the AAR appealed and agreed to voluntarily comply. The rules were incorporated into the AAR's Code of Car Service Rules, effective January 1, 1949. In its 1948 annual report to Congress, the ICC praised operational improvements. Demand decreased in the years 1948 and 1949 and started to climb in 1950 with the advent of the Korean conflict, as shown in Table V-5.

TABLE V-4

YEARLY TURNAROUND TIME--FREIGHT CARS, 1929, 1939-1972 (Class I Railroads)

Year	Turnaround (days)	Year	Turnaround (days)
1929	14.69	1956	16.37
1939	16.18	1957	17.43
1940	15.46	1958	20.17
1941	13.96	1959	19.00
1942	14.96	1960	19.16
1943	15.31	1961	19.85
1944	14.96	1962	19.24
1945	15.00	1963	18.74
1946	14.88	1964	18.42
1947	13.67	1965	18.02
1948	14.29	1966	17.98
1949	16.95	1967	19.02
1950	15.42	1968	18.70
1951	15.35	1969	18.39
1952	16.33	1970	18.73
1953	16.26	1971	20.14
1954	18.31	1972	21.50[a]

Sources: Association of American Railroads, personal correspondence.

[a]Walter Renz, President, American Railway Car Institute, telephone conversation; estimate.

TABLE V-5

SELECT RAILROAD TRANSPORTATION DATA, 1947-1951
(Class I Railroads)

Year	Carloadings	Revenue Ton-Miles (000's)
1947	44,502,188	654,728,304
1948	42,718,828	637,916,742
1949	35,911,261	526,500,360
1950	38,902,641	588,577,756
1951	40,499,182	646,620,439

In 1950, the ICC issued Service Order 866, which required mandatory observance of the newly established AAR rules. It would appear that the absence of car shortage problems may be attributed to decreased demand rather than improved productivity. The turnaround data in Table V-4 and the decreased demand shown in Table V-5 allude to this contention.

Data presented in Table V-6 details month-by-month turnaround on select equipment. With a greater flow of East to West traffic during the Korean conflict in the early 1950s, it might be expected that data would be biased toward shorter turnaround time as compared to 1947, offsetting the normal economy's traffic flow. The data includes no such evidence and indicates no appreciable efficiency increase, but rather the reverse.

TABLE V-6

MONTHLY TURNAROUND TIME, SELECT EQUIPMENT, 1947-51
(Days)

Year/Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Box Cars												
1947	13.17	12.96	12.44	12.56	13.23	12.90	13.06	12.23	12.38	11.88	12.67	13.55
1948	14.21	14.09	13.42	13.47	13.54	13.83	13.58	13.28	13.40	12.58	13.66	14.72
1949	15.35	15.45	14.63	15.07	15.26	15.06	15.11	14.41	14.71	13.94	15.19	16.32
1950	16.13	15.36	14.37	14.15	14.68	14.14	14.26	12.87	13.20	12.92	13.63	14.40
1951	13.16	15.45	13.39	14.01	14.66	15.58	16.38	14.78	14.90	14.16	15.28	16.51
Gondolas												
1947	15.88	14.79	14.93	15.28	13.62	13.75	15.30	13.58	13.86	13.05	13.62	14.73
1948	15.70	15.13	15.48	15.81	13.05	13.10	13.82	12.86	12.94	12.47	13.71	14.83
1949	16.11	16.27	16.38	15.78	15.74	17.12	19.09	16.95	17.76	23.63	19.32	18.34
1950	19.44	19.52	16.47	15.00	14.92	14.35	15.63	13.58	13.68	12.88	13.45	15.28
1951	15.19	17.24	14.90	14.09	13.81	13.64	14.95	13.70	13.63	12.80	14.00	15.88
Hoppers												
1947	15.58	15.52	14.91	15.56	11.40	11.43	13.44	11.34	11.69	11.31	12.67	15.46
1948	15.98	15.58	19.02	17.84	10.84	10.83	12.22	11.17	11.74	11.79	13.46	16.57
1949	17.08	17.80	25.32	13.61	12.54	14.92	15.97	15.17	19.07	36.89	19.02	20.07
1950	22.72	31.35	16.48	15.40	13.70	12.71	13.72	11.83	11.96	11.62	13.73	16.18
1951	16.15	18.55	17.03	14.46	12.63	12.12	13.51	11.63	11.74	11.35	13.16	15.83

Source: Association of American Railroads, personal correspondence.

Railroad productivity for the years 1955-56 and 1963-69 is shown in Table V-7. These years were selected because of numerous ICC car service orders which required prompt terminal car handling and, in most instances, specified that cars be placed for unloading, pulled from industrial locations, and forwarded to subsequent junction points within twenty-four hours. Since boxcar demand perenially was heavy and received prominence in most car shortage hearings, its turnaround time was selected to illustrate railroad productivity on a month-to-month basis for these time periods and is shown in Table V-8.

Some interesting observations on general purpose boxcars result if the data presented in Tables V-6 and V-8 are compared. Regardless of the diminishing supply criticisms and larger capacity counter arguments, deteriorating railroad operations clearly affected car supply. Car service orders which demanded railroad efficiency were not sufficient to attain the operating levels of 1947, at which time no such orders existed. There is no inference of any detrimental effect of ICC car service orders in this contention.

Appraisal

Many observations resulted from the Car Service Order study. An important aspect is the need for an enforcement staff. The body politic of the United States

TABLE V-7

SELECT RAILROAD TRANSPORTATION DATA, 1955-56, 1963-69 (Class I Railroads)

Year	Carloadings	Revenue Ton-Miles (000's)
1955	37,636,031	623,614,866
1956	37,844,828	647,077,041
1963	28,866,619	621,737,176
1964	29,027,186	658,638,722
1965	29,247,637	697,878,030
1966	29,623,115	738,395,160
1967	28,083,751	719,497,949
1968	28,252,541	744,023,096
1969	28,291,939	767,867,099

Sources: Railroad Transportation
Yearbook of Railroad Facts

TABLE V-8

MONTHLY TURNAROUND TIME ON BOXCARS: 1955-56, 1963-69
(Days)

Year/Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1955	16.69	16.45	15.96	15.98	15.31	15.23	15.40	15.34	15.34	14.48	15.69	17.18
1956	16.99	16.17	15.61	15.51	15.73	15.84	17.05	16.11	15.90	15.16	16.51	17.43
1963	21.68	19.33	18.15	18.74	18.66	19.43	20.31	20.11	19.81	17.17	18.76	21.40
1964	19.68	19.25	20.20	20.27	20.74	20.27	22.02	20.87	20.13	18.35	18.95	21.07
1965	20.72	20.21	18.75	19.21	19.46	19.87	20.18	19.97	19.71	17.77	18.39	19.01
1966	18.58	18.31	17.94	18.76	19.49	19.79	21.15	20.02	20.06	18.43	19.24	21.02
1967	21.92	21.34	20.40	20.98	22.21	23.04	26.03	21.82	22.69	21.26	21.83	22.71
1968	22.55	21.39	21.03	22.33	21.88	22.05	23.77	21.43	20.90	19.84	20.26	20.80
1969	23.17	21.37	20.51	21.60	21.86	21.51	23.38	21.43	21.77	20.52	21.44	23.19

Source: Association of American Railroads, personal correspondence.

has been critical of the ICC's performance for several years, but has contributed little to improve the quagmire in which the regulating agency is involved. The increasing amounts of violation penalty assessments against the carriers indicate that the directives carry a low risk attitude by the railroads. It is incongruous to expect forty-six car service agents to police approximately 20,000 railroad stations, seek developing problems, respond to carrier and user complaints, and rectify inequities. During less critical times, seventy agents were employed. Car service order effectiveness is predicated on an adequate enforcement staff. Much testimony exists which cites the need for agents to insure operational efficiency.[56] Rising violation penalties indicate proliferating car service rule non-observance. A 1965 study showed rule violations occurred at certain railroad stations in as many as 94 percent of car loadings.[57] The essence of ICC car service authority depends on enforcement ability, the lack of which materially tempers its efforts during emergencies or normal business activity.

The circuity factor is worthy of consideration. A free enterprise system which allows railroad competition contains some waste element. The degree of waste requires additional scrutiny to resolve the instant

problem. Circuitous routing provisions should be re-evaluated to maintain competition and also remove distorting allowances which favor slow routes for free storage purposes.

Excess freight car capacity indicates that utilization can be improved. The data presented illustrate the possible beneficial effects which increased capacity usage can bring. Particular reference is made to the World War II era, wherein freight cars were loaded within ten tons of capacity as compared to twelve or thirteen tons under capacity during the years immediately preceding the war. In the year 1971, the average freight car load was approximately 13-1/2 tons under average capacity. Based on data published by the AAR, the 1,392,000,000 tons of revenue freight hauled by Class I railroads in 1971 could have moved in 24,857,143 shipments instead of the 25,260,858 required shipments, if each car was loaded another 1.1 tons. This calculation still allows for loads 12.3 tons under capacity. A total of 403,715 less loadings would have occurred and an equivalent 22,304 freight cars would have been added to the national fleet, using the average 18.1 trips per car made that year. The savings in user and carrier expenses cannot be ascertained, but certainly would be considerable.

Responsibility for clean freight cars is easier to theorize about than to suggest operational correction. The carriers can be ordered to expedite car cleaning procedures, but the symptom rather than the cause is treated. References indicate that the car cleaning function entails three to four days after unloading. The clean car return responsibility is the consignee's. As a practical metter, it is unreasonable to expect the consignee to remove debris unrelated to the inbound shipment and to be confronted with a mounting waste disposal problem. Also, the consignee may need the empty car for an outbound shipment and may not wish to relinquish an empty car during short supply periods. The debris may be traced back to the shipper, but he may have received the car from another shipper and availed himself of the car after unloading for outbound shipment. Or, he may have received an empty car in a dirty condition and placed it in service rather than wait for another car. If the ICC enforces the clean car rules or the AAR resumes penalty proposals, empty car switching could precipitate a reeling situation. It is likely that this problem will be around for some time.

The unserviceable car problem also is characterized by interrelated factors. It is reasonable to expect rail carriers to maintain serviceable rolling

stock. Incentive to initiate needed repairs, however, is lacking. During low demand periods, carrier earnings are depressed and normal cost-cutting during slack periods takes its toll on unused equipment. During high demand periods, historically accompanied by short car supply, carriers employ other railroads' freight cars at low per diem rentals rather than outlay car repair expenses or new car capital to purchase equipment. Clearly, a multi-pronged approach is required to keep cars in serviceable condition.

Needed operational improvement is incontestable. Data validates that improved operations have been enjoyed under more intense shipping conditions with less sophisticated technology. Freight cars move less than three hours a day. Data show that recent, average turnaround times are at least ten days longer than twenty-five years ago. If the average 1971 turnaround time had been reduced by two days per shipment (not an unreasonable possibility), 50,521,716 car-days would have been saved. The reduced turnaround of 18.14 days per trip would have allowed 2,785,900 additional trips. At the reduced figure, a freight car would have achieved 20.12 trips instead of 18.1, gaining the equivalent yearly service of 138,464 freight cars. At the 1970 average new car cost of $17,161, a $2.376 billion expenditure would have

been required. Disregarding new car purchases, the saving to the national economy would have been significant, not to consider the expense of the legislative syndrome that resulted from car shortage problems.

Car service orders have not appreciably affected operations in the long run. It is unlikely that a required policing force ever could be employed to insure ICC directive adherence. Idealistically, a user and carrier effort such as occurred during the World War II period would be a giant stride toward resolving car shortage problems.

A serious question is raised regarding the feasibility of augmenting the national freight car fleet. Additional cars will contribute to further congestion and inefficiency. In reply to the ICC's statements that the car fleet is inadequate and utilization is inefficient, the only confirmation that can be made is that freight car underutilization abounds. The size of an adequate fleet begs for operating improvement before it can be determined.

FOOTNOTES--CHAPTER V

[1]L. F. Loree, Railroad Freight Transportation (New York: D. Appleton and Company, 1922), p. 177.

[2]Ibid., p. 179.

[3]Ibid., p. 180.

[4]Ibid., p. 181.

[5]Ibid., pp. 396-97.

[6]E. W. Coughlin, Freight Car Distribution and Car Handling in the United States (Washington, D.C.: Association of American Railroads, Car Service Division, 1956), p. 315.

[7]John F. Donelan, "Fifty Dollar Car Service Violations," I.C.C. Practitioners' Journal, XXXIX (November-December, 1971), p. 68.

[8]The Official Railway Equipment Register, LXXXVII (New York: The Railway Equipment and Publication Company, January, 1972), p. 1119.

[9]U.S., Interstate Commerce Commission, "Car Shortage--Insufficient Transportation Facilities," Interstate Commerce Commission Reports: Decisions of the Interstate Commerce Commission of the United States, November, 1906-December, 1907, XII (Washington, D.C.: Government Printing Office, 1908), pp. 574-75.

[10]U.S., Interstate Commerce Commission, "Car Supply Investigation," Interstate Commerce Commission Reports: Decisions of the Interstate Commerce Commission of the United States, November, 1916-January, 1917, XLII (Washington, D.C.: Government Printing Office, 1917), p. 657.

[11]U.S., Interstate Commerce Commission, Bureau of Statistics, Interstate Commerce Commission Activities--1887-1937 (Washington, D.C.: Government Printing Office, 1937), p. 155, footnote (7).

[12]Ibid., footnote (8).

[13]U.S., Interstate Commerce Commission, Fifty-Sixth Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1942), pp. 123-24.

[14]For examples, see U.S., Interstate Commerce Commission, Sixty-Sixth Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1952), p. 144; and Sixty-Ninth Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1955), pp. 109-10.

[15]U.S., Interstate Commerce Commission, Seventieth Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1956), pp. 94-95.

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[17]U.S., Interstate Commerce Commission, Bureau of Enforcement, personal letter.

[18]U.S., Interstate Commerce Commission, Eighty-Fifth Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1971), p. 80.

[19]U.S., Congress, House, Committee on Interstate and Foreign Commerce, Inquiry Into Freight Car Shortages, Hearings, before the Special Subcommittee on Investigations of the Committee on Interstate and Foreign Commerce, House of Representatives: Part II, 92nd Cong., 1st and 2nd Sess., 1972, p. 636.

[20]U.S., Interstate Commerce Commission, Bureau of Economics, Circuity of Rail Carload Freight, Statement 68-1 (Washington, D.C.: Government Printing Office, 1968), p. 1.

[21]John J. Esch, "Regulation of Car Service Under Government Control of Operations," War Adjustments in Railroad Regulation, The Annals of the American Academy of Political and Social Sciences, LXXVI (Philadelphia: The American Academy of Political and Social Science, 1918), p. 41.

[22]John F. Stover, American Railroads (Chicago: The University of Chicago Press, 1961), pp. 190-91.

[23]U.S., Interstate Commerce Commission, Interstate Commerce Commission Activities--1887-1937, p. 157.

[24]U.S., Interstate Commerce Commission, Circuity of Rail Carload Freight, p. 2.

[25]U.S., Department of Agriculture, Bureau of Agricultural Economics, "Current Developments in Marketing and Transportation," Marketing and Transportation Situation, MTS 19 (Washington, D.C.: Government Printing Office, March, 1944), p. 12.

[26]U.S., Congress, Senate, Committee on Interstate and Foreign Commerce, Freight Car Shortage, Hearings, before a subcommittee of the Committee on Interstate and Foreign Commerce, United States Senate, on the Freight Car Shortage, 84th Cong., 1st Sess., 1955, p. 30.

[27]U.S., Interstate Commerce Commission, Seventy-Sixth Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1962), p. 101.

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[29]T. Q. Hutchison, "Factors in Freight Car Supply," Southern Journal of Agricultural Economics (December, 1971), p. 169.

[30]Julius H. Parmalee, "Physical Needs of the Railways Under Government Control," War Adjustments in Railroad Regulation. The Annals of the American Academy of Political and Social Science, LXXVI (Philadelphia: The

[31]National Industrial Conference Board, Railroad Performance, Research Report 71 (New York: National Industrial Conference Board, 1924), pp. 12, 30.

[32]U.S., Interstate Commerce Commission, Fifty-Sixth Annual Report of the Interstate Commerce Commission, pp. 125-26.

[33]Arthur L. Winn, Jr., "Maximum Loading of Freight Cars," I.C.C. Practitioners' Journal, IX (October, 1942), p. 57.

[34]U.S., Interstate Commerce Commission, Fifty-Sixth Annual Report of the Interstate Commerce Commission, pp. 16-17.

[35]U.S., Interstate Commerce Commission, Sixty-Ninth Annual Report of the Interstate Commerce Commission, p. 110.

[36]Coughlin, Freight Car Distribution and Car Handling in the United States, pp. 90-91.

[37]U.S., Interstate Commerce Commission, Seventy-First Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1958), p. 76.

[38]U.S., Interstate Commerce Commission, Seventy-Second Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1958), p. 76.

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[40]National Association of Railway Commissioners, Proceedings of the Twentieth Annual Convention (Washington, D.C.: Government Printing Office, 1909), p. 132.

[41]U.S., Congress, Senate, Freight Car Shortage, p. 55.

[42]U.S., Interstate Commerce Commission, Seventy-Third Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1959), pp. 86-87.

[43]U.S., Congress, Senate, National Transportation Policy, Preliminary Draft of a Report Prepared for the Committee on Interstate and Foreign Commerce, United States Senate, by the Special Study Group on Transportation Policies in the United States, Pursuant to S. Res. 29, 151, and 244, 86th Cong., 1961, pp. 721-22.

[44]U.S., Congress, Senate, Freight Car Shortage, pp. 107-8.

[45]U.S., Interstate Commerce Commission, Eighty-Second Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1968), p. 71.

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[47]Ibid., p. 33.

[48]Rupert L. Murphy, Improving Car Service (unpublished remarks before the Annual Meeting of the Southern Traffic League, Birmingham, Alabama, September 19, 1972.

[49]U.S., Interstate Commerce Commission, Interstate Commerce Commission Activities--1887-1937, pp. 157-58.

[50]U.S., Interstate Commerce Commission, "Investigation of Adequacy of Railroad Freight Car Ownership, Car Utilization, Distribution, Rules and Practices," Interstate Commerce Commission Reports: Decisions of the Interstate Commerce Commission of the United States, March, 1969-March, 1970, CCCXXXV (Washington, D.C.: Government Printing Office, 1968), p. 293.

[51]U.S., Interstate Commerce Commission, Eighty-Fifth Annual Report of the Interstate Commerce Commission, p. 24.

[52]U.S., Interstate Commerce Commission, Eighty-Sixth Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1972), p. 24.

[53]For examples, see C. O. Ruggles, "Railway Service and Regulation," Quarterly Journal of Economics, XXXIII (Cambridge: Harvard University Press, 1918), pp. 148-49; U.S., Interstate Commerce Commission, "Car Shortage--Insufficient Transportation Facilities," p. 562; and National Association of Railway Commissioners, Proceedings of the Twentieth Annual Convention, pp. 131-32.

[54]For examples, see Harold G. Moulton and Associates, The American Transportation Problem (Washington, D.C.: The Brookings Institution, 1933), pp. 783-83; and Kenneth H. Tuggle, "Adequate and Efficient Car Service," I.C.C. Practitioners' Journal, XXXV (November, 1957), p. 185.

[55]U.S., Interstate Commerce Commission, Sixty-Second Annual Report of the Interstate Commerce Commission (Washington, D.C.: Government Printing Office, 1948), pp. 118 19.

[56]For examples, see Coughlin, Freight Car Distribution and Car Handling in the United States, p. 303; U.S., Congress, Senate, Committee on Commerce, Freight Car Shortages, Hearings, before the Special Freight Car Shortage Subcommittee of the Committee on Commerce, United States Senate, on S.3223 and S.3334, 91st Cong., 2nd Sess., 1970, p. 20; and U.S., Department of Transportation, "Freight-Car Supply and Utilization: The Regulatory View," p. 44.

[57]Hutchison, "Factors in Freight Car Supply," p. 170.

CHAPTER VI

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Railroad freight transportation's relative role in the United States economy has diminished in the past three decades. The industry's problems have caused intensified federal efforts to maintain private enterprise railroading. Freight car supply has been a major issue in the government's efforts.

Although car supply problems predate the 1887 advent of federal railroad regulation, railroads' legal obligation to supply freight cars dates from 1906. Since 1906, critical car supply periods have occurred at irregular intervals. To date, the 1970s have witnessed considerable federal effort toward solution of the shortage problem. Contemporary legislative proposals suggest various governmental expenditures which would exceed $3 billion. Augmentation of the national freight car fleet has received primary attention. Resolution of the problem has traditionally centered on increasing absolute car supply with little attention to improved car utilization.

This study examined the impact of improved car utilization on the shortage problem. The investigation reviewed the problem's history. The focal interest area was past utilization-improvement measures which contained present and future implementation merit. The critical assumption was that any improved utilization recommendations would be in the public interest.

The research was organized in five parts. In Chapter II the problem's history was reviewed and critical problem eras were examined. Some environmental conditions relevant to each time period were discussed. The next three chapters reviewed traditional methods used to improve utilization. The three methods discussed were demurrage assessment, that is, user detention charges; per diem payments, that is, intercarrier rental charges; and, car service orders, that is, ICC directives affecting freight car handling. The history of each method was traced and appraised. This chapter summarizes the findings and conclusions. Recommendations to guide future freight car shortage policy formation are recommended. Research to provide further problem-area insight is suggested to conclude this chapter.

History of Car Supply Problems

Railroad regulation occurred partly because of freight car supply problems. After the Hepburn Act of 1906, railroad freight car supply became a legal

obligation. Critical car supply periods occurred at various times throughout the twentieth century. In 1907, railroad inability to transport the industrial spurt was manifested in car supply problems. The first formal ICC car investigation evidenced unequal freight car concentration and gross operating inefficiencies. Industrial prosperity immediately preceding World War I similarly affected railroad car supply ability. Another ICC investigation found the same railroad operational difficulties, causing car underutilization. The ICC was then empowered to affect car handling through the Esch Car Service Act of 1917.

The post-World War II industrial acceleration once again witnessed severe freight car problems. Following a new investigation, the ICC ordered increased efficiency and the AAR adopted new service rules governing intercarrier operations. Increased-productivity demands during the Korean conflict of the early 1950s and during the mid-1950s evoked ICC handling directives. The last major critical car supply period started in 1963 with increased United States participation in the Indochina conflict. Car supply problems occurred with increasing intensity. Currently, the freight car strain caused by the United States--Soviet Union grain transactions has again accentuated the problem. The federal government is once again deeply involved seeking resolution.

Improved utilization could postpone further private or public investment in freight cars. This study investigated utilization-improvement measures from the user and/or railroad standpoints. First of all, user detention was explored throughout railroad history and improvement possibilities were inferred.

Demurrage

User detention charges, known as demurrage, date back to the Civil War. It was anticipated that high charges would discourage undue rail car detention. Early studies of the variable demurrage used in the second decade of the twentieth century confirmed this contention. But, more recent aggregate demurrage assessment data, which has received no attention in attempted problem solutions, results in some interesting observations. Considerable user car detention occurred during each post-1920 critical supply period. User detention was not significantly reduced as higher emergency demurrage rates were imposed. Total assessment increased, as did average user costs on a per car or per ton basis. Increased industrial activity allowed user absorption of increased demurrage rates and accomplished little more than increased railroad revenue for car usage. It is evident that daily demurrage rates were not raised to levels which improved car utilization. Consequently, patrons were not encouraged to utilize or develop possible

private warehousing and manpower. Freight car storage still was a more attractive alternative. Interestingly, a 100 percent increase in rates from 1964 to 1971 resulted in more than a 100 percent railroad demurrage revenue increase, in spite of a four million carload decrease in railroad freight shipments.

Demurrage potentially can improve car utilization by discouraging undue user detention. The assessment rate, however, must exceed private warehousing and handling costs. If freight cars are viewed as transportation and not storage vehicles, detention charges must encourage transit utility. Unless rates are sufficiently high, commodity storage in freight cars will result and contribute to worsening car shortages.

Another aspect of user-detention concerns free-time allowances for loading and unloading. The standard forty-eight hour allowance to perform either function was permanently established in 1910. Since that time, improved new car design allows loading and unloading of many cars in minutes. Reduction in free-time allowance is worthy of further consideration. The ICC attempted general free-time reduction in March, 1973, through a car service order.[1] Undue hardship complaints by some users forced the order's cancellation in the same month.[2] Yet, testimony exists which indicates user approval of such a measure.

It is recommended that contemporary demurrage rates be significantly increased to a level which will discourage user detention. Past rates did not create cost hardships and consequently freight car shortages resulted from user abuses. Efforts should be directed toward demurrage rate determination which will increase car use as transportation vehicles. Further, it is recommended that free-time allowance be permanently reduced. Improved car design and mechanized loading and unloading procedures are sufficient rationale for an updating of free-time allowance; adherence to standards which applied universally in 1910 cannot be condoned.

Per Diem

After track gauge standardization permitted car interchange and through transportation service, railroads negotiated per-mile intercarrier car rental charges. Excessive car underutilization, coupled with suspected dishonesty, caused standardized daily car rental charges to be applied in 1902. In this study, it was expected that higher car rental charges, known as per diem, would result in improved untilization. However, it was found that per diem served to divide intra-industry relationships. Moreover, the per diem rate charged did not solve problems of car utilization. Two major opposing views have been held. The primarily originating Western

railroads advocated high, daily rates to expedite car handling and return. The primarily terminating Eastern railroads favored low, mileage rental charges. Intra-industry divisiveness intensified as charges incrementally increased until the ICC prescribed rates in 1947. A subsequent court ruling invalidated the action and precipitated a sixteen-year ICC effort to obtain the needed decision-making authority. During the interim, inter-carrier relationships worsened, railroad operations deteriorated, and the industry lost its major-mode prominence. United States congresses entertained forty-eight legislative proposals which cited the grievous situation and would have granted the ICC intermediary rate-setting authority. In 1968, the ICC used its two-year-old authority to promulgate a multi-level per diem scale. Although the ICC had cited the under-utilization facet of mileage rates in the early 1900s, it advocated a daily-mileage combination rate structure in 1968.[3] Substantial criticisms of the ICC's decision highlighted the new structure's inequities and reduction in charges from earlier rates.[4]

In another action, the ICC prescribed seasonal, incentive per diem boxcar rates in 1970. The additional rates have not achieved decreased turnaround time on boxcar shipments, as illustrated in Table VI-1. This table lists boxcar turnaround time from 1969, prior to

TABLE VI-1

MONTHLY TURNAROUND TIME ON BOXCARS: 1969-72
(Class I Railroads)

Year/Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1969	23.17	21.37	20.51	21.60	21.86	21.51	23.38	21.43	21.77	20.52	21.44	23.19
1970	23.53	23.93	21.92	21.21	20.63	21.05	23.52	22.64	22.46	22.03	23.17	25.23
1971	24.04	22.03	22.12	23.28	23.56	24.37	28.42	24.35	24.22	22.88	23.98	25.71
1972	25.08	24.272	22.31	24.82	22.81	23.67	26.48	23.04	n.a.	n.a.	n.a.	n.a.

Source: Association of American Railroads, personal correspondence.

the new rates, through part of 1972. Conclusive evidence is not available to critically analyze the increasing turnaround time. It can be stated, however, that car utilization has not improved.

The per diem controversy resulted from lack of clear-cut objectives. It will remain a dilemma until such objectives are postulated. In 1902, established rates compensated owners for cost, maintenance, and investment risk. An owner-recall option stipulated the car's return with a follow-up non-observance penalty. Since that time, the rate bases concentrated on and were obscured by attempted cost and maintenance reimbursement. The evasive car-value element received no consideration. Increased productivity, which accompanies high user costs, was ignored in rate setting. Owner opportunity costs, due to non-possession, were excluded from consideration. A freight car's basic purpose was ignored. If per diem's objective is cost remuneration, then freight cars become strictly a property investment matter. Rate making then centers on "fair" investment return determination. Questions of costing methodology which have complicated the issue throughout history will continue in the future. This objective, however, evokes a greater problem involving ownership.

The Hepburn Act of 1906 required railroads to supply transportation equipment. A greater West to East

traffic volume placed the ownership onus on the primarily originating Western carriers. Freight car investment to fulfill railroads' legal obligation was severely debilitated by the owners' inability to obtain and utilize their equipment. Opportunity cost exclusion decreased further desire for freight car investment. Primarily originating railroads suffered inequities in per diem rate levels. More importantly, the absence of car control prevented legal obligation fulfillment by originating railroads. The conflict between the law and the rate mechanism is obvious from this standpoint. That conflict points to a new per diem perspective. Per diem objectives must be established before a problem-solving solution can be reached. If railroads are required to provide freight cars to their shippers, they must be given access to their invested rolling stock. Unless this is permitted, the legal conflict remains and additional problems surrounding the Hepburn Act emerge.

Several complexities prevent an easy solution to the per diem problem. High per diem designed to expedite empty car return penalizes non-owners for through-transportation participation. Prescribed rates, however, may be designed to incorporate separate components for reasonable service, excessive inefficiency, and non-return of freight cars. The 1902 per diem rates were so designed and proved effective. In addition, empty car mileage is

a consideration. Mandatory car return contains a resource underutilization facet. Empty car movement produces no transportation service or revenue. This unfortunate waste must be accommodated. It may be tempered, however, with per diem modification which allows return loads if adverse owner effects are minimized or non-existent. The primary objective, however, must not be obscured.

In conclusion, the railroad industry's demonstrated inability to resolve the per diem issue calls for a more direct, aggressive regulating intermediary role. The ICC's per diem authority should be exercised to resolve the problem. Recent ICC efforts have been deficient. It is recommended that the per diem objectives be established. Owners should be given control of their equipment to fulfill their legal obligation. Per diem rates should be set at a level to promote efficient car handling and also allow car return when necessary. Service standards for expected transit time can be established. Per diem rates based on costs, including true car value, can apply to the expected service. Penalty charges should be applied whenever transit time exceeds expectation. Also, owner recall should be re-established. Owners should be cognizant of their shippers' requirements and should exercise their recall option when necessary. Until the option is exercised, the existing per diem should encourage efficient operations. Once the recall option

takes effect, the owner can be responsible for empty-haul costs. Effective implementation of these recommendations should encourage efficient operations and also permit owners' control of their freight cars.

In the past, the ICC used its emergency car service authority to expedite empty car return. The car service order attempts to improve freight car utilization was the final utilization measure explored.

Emergency Car Service Orders

The ICC's emergency car service authority originated in the Esch Car Service Act of 1917. It resulted from underutilization and poor service evidences found in car shortage investigations. This study focused on the major types of service orders seeking improved utilization measures for possible permanent implementation. The study started with the ICC's Bureau of Service, which issues and polices car service orders. Then, some of the major aspects of car service orders were explored. From this investigation, several possibilities for improved car utilization emerged. These areas cover circuitous routing, car loadings, unserviceable cars, unclean cars, empty car return, and efficient car handling.

Bureau of Service

The Bureau of Service was established by the previously mentioned Esch Act and became operational in

1920. Car service agents were employed and increased in number to seventy during the mid-1950s car shortage period. Subsequent budgetary restrictions forced staff reductions to a current staff size of forty-six agents. The agents policed car service order observance at approximately 20,000 railroad stations, responded to carrier and user complaints, relieved congestions, and initiated penalty violations for order non-observance. Complete penalty violation data was not available, but this study found that $1,732,475 from assessed penalties were added to the United States Treasury in the past three years. The significance of the penalty assessments is contained in the fact that they represent only detected violations of ICC orders.

The ICC's pleas for additional agents were honored by Congress in the latter 1960s. The approved addition of over twenty agents in 1971 and 1972 was withheld by the Office of Management and Budget, evoking criticisms of political implications. It seems reasonable to conclude that Bureau of Service staff constraints seriously hamper the ICC's improved utilization efforts. The federal government's railroad involvement would be better directed toward insuring efficient operations through a larger service agent staff than freight car augmentation of the aggregate fleet. It is recommended that the car service agent staff be increased. Only

with a greater risk of detection and penalty assessment will the railroads adhere to ICC utilization improving directives. The types of expected utilization improvements that a larger staff could police are discussed in the following sections.

Circuitous Routings

The competitive nature of railroad freight transportation permits several alternative routings between origin and destination points. Naturally, all routes cannot provide the shortest mileage haul. Some waste, therefore, is inherent in competitive railroading. History reveals seven circuity studies of railroad operations. The highest circuity factor, which is the excess mileage percentage beyond minimum requirement, was found in 1964, the most recent ICC study. Circuity's impact on car supply causes reflection on its desirability and application. Complete circuity elimination in 1964, admittedly improbable, would have been equivalent to the yearly service of 238,727 additional freight cars. At 1964 car costs, this addition represents equipment investment of $3.357 billion. During 1964, a critical car supply situation existed.

The federal government's first World War I car service action eliminated circuitous routing. The ICC's first service order issued in 1920 eliminated circuity.

In other crises, the ICC's authority was similarly exercised. Complete circuity elimination is not required to realize some improved car utilization. Sufficient testimony citing excessive routing abuses existed to warrant attention. Shipments involving ten to twelve extra days and 1,000 excessive miles illustrated possible utilization improvement. Delayed shipments for "carrier convenience" provide free user storage, higher distribution costs, and car underutilization.

Permissive circuitous routes should be reviewed. Any excessive routing beyond competitive requirements should be immediately eliminated. Competitive circuity should be reviewed from the public interest's viewpoint. Perhaps competitive circuity in some instances is more detrimental to the national economy than the benefits derived from competition.

Heavier Car Loadings

The ICC has ordered minimum weight loadings to improve car utilization. Studies exist which illustrate fewer car requirements because of heavier loading achievements. The railroads' record freight transportation performance during World War II was partially attributed to heavier carloads, as verified by existing data. Railroads currently counter diminishing fleet size criticisms with larger capacity car arguments. Available data confirms non-exploitation of larger capacity potential. For

example, car capacity exceeded carloadings in 1971 by 13.4 tons, compared to less than 10 tons during World War II. An additional 1.1 tons loaded in each 1971 shipment, reducing unused capacity to 12.3 tons, would have been equivalent to the yearly service of over 22,300 freight cars. At 1970 new car costs, the needed investment to accomplish this result would have been over $382 million. During 1971, congressional proposals supported federal freight car subsidy.

Clearly, heavier carloadings would mitigate freight car investment and supply problems. Larger cars reduce car requirement, handling costs, and terminal congestion. The additional capacity, however, must be utilized if the potential benefits are to accrue. Concentration on realistic minimum carload shipments could materially improve car utilization, as illustrated with 1971 AAR data.

It is recommended, therefore, that minimum weight requirements be established. A review of historical data should be made so that heavier shipment requirements are imposed on commodities and industries over routings that effectively can improve loading weights.

Unserviceable Freight Cars

The ICC occasionally has ordered expedited railroad car repair programs. Historic data reveals that the highest relative nonserviceable car ratios existed immediately prior to critical car shortage periods. Railroad

maintenance orientation, contrary to normal business acumen, tends toward decreased repair activity during slack business operations. Business upturns thus are confronted with a decreased car supply. Testimony exists which cites higher than average unserviceable car ratios by Eastern railroads. Coupled with relatively low per diem, the higher Eastern ratios contributed to further unequal car distribution. Per diem payments were more attractive than car repair capital outlay. During the World War II era, unserviceable car ratios reached their historic low point. With contemporary ratios hovering around 5 percent of the aggregate car fleet, approximately 70,000 freight cars are unserviceable on any given day. Federal freight car expenditures will proliferate apathetic car repair programs and incite further railroad-owned freight car underutilization.

Considerably more attention should be given to unserviceable freight cars than has been apparent in recent years. Clearly, unserviceable cars are patent underutilization. Without external prodding, railroads will ignore car repair if alternate sources of car supply are easily and inexpensively available.

Unclean Cars

Emergency ICC directives have expedited freight car cleaning procedures. The ICC and some railroad officials attest that each cleaning operation removes

three to four days from a car's useful service. The AAR approached this controversial issue by proposing a $25 per car penalty for an uncleaned, consignee-returned car. Although car service rules required complete unloading of tendered shipments, common non-observance has been condoned through inattention. The ICC recently ordered mandatory observance of clean-car rules. Enforcement, however, will require the impractical, close surveillance of untold thousands of consignees.

The ICC's past directives have treated the symptoms rather than the cause, but the issue is complex. Consignee cooperation would obviate the utilization delays caused by car cleaning procedures, but monetary penalties as incentive are lacking. Penalty imposition on the surface appears to be a solution. Penalty application presents problems of responsibility for dunnage and debris remaining in an empty car. Actual responsibility could be theoretically applied to previous users of the car. Although aggregate data is not available on which to evaluate freight car underutilization caused by unclean cars, any ameliorating efforts incontestably would contribute to improved car usage.

Empty Car Return

Intercarrier operating rules from their inception required empty car return to, or in the direction of, the owning road. These rules, however, have been loosely

observed. The ICC issued various directives forcing compliance. A permanent order was entered in 1969 and some railroads' opposition was ultimately overruled by the United States Supreme Court in 1972. Sufficient time to evaluate the order's effect has not expired. The order may accomplish what per diem has failed to do. Again, a surveillance staff, not now available, will be required for maximum effectiveness of the order's intent. An interesting observation which resulted from this aspect of the study was the railroad opposition to relinquishing each other's freight cars. Although the industry promulgated the rules for over seventy years, mandatory compliance seems to have offended some who no longer can exploit the inequities in past practices.

Expedited Car Handling

The most commonly employed ICC car service orders concerned improved operating productivity. Contrary to expectation, railroads have not demonstrated desire to maximize efficient operations. Contemporary data confirm that freight cars are in motion less than three hours per day. Turnaround time is a commonly used railroad efficiency indicator. It represents the interim between the time a car is loaded and the next time it is loaded. Based on this measurement tool, railroad operating efficiency has not improved over the long run. The ICC's

improved-utilization efforts have had dubious lasting effects. Turnaround increased from 14.69 days in 1929 to 20.14 days in 1971.

The ICC's first major car handling efficiency effort in 1947 was rescinded when the AAR promised voluntary compliance with the orders. During the Korean conflict, railroad inefficiencies caused a series of ICC car handling directives. Yet, turnaround time never achieved 1947 efficiency levels again and continued to deteriorate. Numerous ICC attempts throughout the 1960s showed no evidences that might be expected from advanced technology. Ironically, railroad inefficiencies in 1947 precipitated the ICC's major car handling activity.

Improved turnaround time, manifested through operating efficiency, undeniably would reduce, if not obviate, car shortage problems. Using 1971 AAR data to illustrate, a two-day turnaround reduction would have been equivalent to the yearly service of almost 138,500 freight cars. At 1970 costs, that result would have represented $2.376 billion in new car purchases. The reduced turnaround still would have exceeded 1944's average by over three days and 1947's by almost 4-1/2 days. Thus, the suggested improvement most likely was attainable.

It is recommended that an extensive program be launched to increase railroad productivity. Idle cars

call forth the need for additional equipment. The examples of idle cars found in this investigation illustrate the need for railroad operating improvement. Maximum idle time restrictions should be permanently established. Concentrated effort should be extended to insure adherence. Past railroad performance infers that great strides in operating performance are possible.

Conclusion

A freight car shortage does not exist. Evidences of gross freight car underutilization imply that a freight car shortage never existed. Railroad operating improvements, as summarized in this chapter, would have combined to reduce car supply difficulties to manageable proportions with the added benefit of reducing government involvement in the railroad industry. Sufficient examples exist which confirm that improved utilization was and is possible. In 1971, railroads had 80 percent of the freight car supply they had in 1944. Yet they required 33 percent more time to transport 60 percent of the volume carried in 1944. In view of the data, accepting the concept of a "car shortage" is difficult. The "car shortage" suggested in contemporary federal involvement is not a reality.

The demurrage rate must be increased to discourage user detention. Historically, railroads provided low cost

warehousing for users. The demurrage structure provided sufficient time to load and unload freight cars. Increased aggregate demurrage assessments infer that higher charges have not been sufficient to increase car utilization. Users have absorbed higher charges. The rates must be increased to a level which will cause users to seek alternative warehousing and release freight cars for transportation purposes. Also, free-time allowance should be permanently reduced. Users are now allowed forty-eight hours to perform loading and unloading that realistically can be accomplished in less than half the time. The existence of user approval of reduced free time to achieve increased car utilization is sufficient incentive for such an action.

The plaguing per diem issue can only be resolved once clear cut objectives are determined. Past resolution attempts have been complicated by diverse costing approaches. The railroads' legal car supply obligation, coupled with lack of owner control, has been ignored. The ICC must assert itself to resolve the problem. Per diem rates should be structured to encourage efficient car handling as well as penalize inefficiencies. In addition, a recall option should be provided to the owner. Unless owners are allowed to utilize their equipment to fulfill their legal obligation, the conflict between the law and railroad operating procedure will remain.

Within the operating realm, several approaches can materially improve car utilization. Obvious waste is incurred by circuitous routing. Total circuity elimination would more than offset proposed government financial commitment to car supply. Any circuity elimination will improve car supply. Circuity review should remove excessive routings beyond competitive requirements. Also, permitted circuity for competitive purposes should be re-evaluated for its impact on the car shortage problem. Competitive circuity which patently provides less benefit than competition should be eliminated.

Heavier car loadings must be encouraged. Larger capacity cars are used as a counter argument to diminishing car fleet complaints. Increasing patron car shortage complaints should be met by heavier loading requirements. Lacking shipper cooperation to improve car utilization should be emphasized. The carriers and their associations must review the consist of their shipments to inaugurate higher minimum loading requirements. Otherwise, larger capacity cars cannot justifiably exonerate railroads for a smaller fleet size.

It is recommended that the ICC apply rigorous standards to the allowable unserviceable cars. Some railroads have managed to confiscate freight cars of other railroads and avoid repair expenses on their own. An unfair burden is placed on primarily originating

railroads, with terminating roads controlling a greater number of empty cars to supply their shippers. The study has found that a greater unserviceable car ratio is maintained by terminating railroads. Reduced repair time will somewhat offset unequal car distribution and depress the need for additional freight cars.

Perhaps the most important utilization-improvement aspect is that of railroad operations. Existing inefficiencies will continue if there is a hint of federal financial assistance. The federal government must cite the deteriorating operations in railroading. A 50 percent increase in turnaround time since the 1940s is difficult to condone. The railroad industry must be confronted with the data which shows freight cars in movement less than three hours per day. The economy continues to suffer. The public interest is damaged. International trade is affected. Meanwhile, the railroad industry seeks further federal assistance. In this regard, the industry should be given the mandate and subsidy should be refused. Before any further overtures are advanced, the railroad industry and the ICC collectively can resolve car supply problems without additional freight cars. Rather than risk further terminal congestion and operating inefficiencies, major attention should be shifted toward improved car utilization. Under present circumstances, adequate future car fleet size projections cannot be

determined until present cars are utilized with some degree of efficiency. The public interest best would be served if the ICC took a more aggressive approach to the car supply problem's resolution and placed the onus on the industry's participants to properly utilize available rolling stock. Otherwise, the government's desire to maintain private enterprise railroading may be overwhelmed by correctional public demands. The federal government may become more involved in railroading than currently is desired.

Future Research

Several potential researchable areas resulted from this study. The following discussion of potential research follows the format of this work.

Demurrage

It would be useful to determine the effect of additional storage facilities on the seasonal demand for car types. Problems occur within the grain industry and also on international shipments requiring dock operations. Equipment and warehousing space expenditures at origin and/or destination for certain commodities may tend to reduce seasonal demand for freight cars.

Incentive demurrage rates for improved rolling stock utilization may be suggested by a study of storage and handling charges in some industries. The suggested

rates should be slightly higher than the user indifference level. Storage in freight cars would be discouraged.

Multi-level demurrage rates may result from an investigation and compilation of car-types on which demurrage historically has been paid. Improved freight-car design, permitting more expeditious handling, looms as a possibility.

Per Diem

A study may be conducted to ascertain reasonable service expectations for different transportation movements. Reasonable per diem rates may apply on expected service. Afterwards, penalty per diem can be assessed. The schedule may allow for contingencies, but should deter excessive inefficiency or detention.

Multi-level per diem effectiveness may be measured by comparison of freight movements in different-valued cars between the same points and traversing the same routes.

Railroad Operations

The railroad circuity factor provides some useful researchable areas. A current routing investigation may result in circuity reduction by the elimination of excessively circuitous routes which prevent efficient utilization. Railroad merger activity provides the opportunity to compare circuity in different time periods.

Thus, competitive circuity can be separated from intentional "slow routing."

A sample study of the empty-car mileage may provide economic-cost insight of mandatory car-return to owners. Empty-car intraterritorial costs then can be compared.

Improper car dispatching may contribute to unused car capacity. Car-placement methodology research may result in greater car capacity utilization.

Unserviceable cars contribute to car supply problems. A study of the extent of required repairs may suggest preventative maintenance application and avoid costly repairs and excessive delays.

A detailed car cleaning analysis may cite prime offenders. Economic cost determination may suggest the degree of attention and enforcement that is required.

Freight car utilization may have been severely hampered by railroad service reduction. A study may determine the car-day loss caused by reductions to bi- or tri-weekly service in some areas.

Railroad terminal operations have been cited as a major car supply problem contributor. Research may suggest possible joint-terminal operations in areas which historically experience congestion. This study would be aided by merger activity which has resulted in operating consolidation, providing a basis for the research.

Finally, efficiency measurement of terminal operations and car utilization may result from freight movement comparison of different distances and interchanges at a varying number of stations. An ancillary benefit of such a study may be the adoption of federal policy standards toward railroad facility abandonment attempts.

FOOTNOTES--CHAPTER VI

[1]ICC Moves to Prod Shippers Not to Hold Onto Freight Cars," Wall Street Journal, March 8, 1973, p. 4.

[2]"ICC Relaxes a Rule on Rail Freight Cars," Wall Street Journal, March 29, 1973, p. 2.

[3]U.S., Interstate Commerce Commission, "Chicago, Burlington & Quincy R. Co., et al. v. New York Susquehanna & Western Railroad Co., et al.," Interstate Commerce Commission Reports: Decisions of the Interstate Commerce Commission of the United States. September 1967-March 1969, CCCXXXII (Washington, D.C.: Government Printing Office, 1968), pp. 242-43, Rate Table C.

[4]For examples, see U.S., Department of Agriculture, Economic Research Service, "The Freight Car Situation," by T. G. Hutchison, Marketing and Transportation Situation, MTS 171 (Washington, D.C.: Government Printing Office, November, 1968), pp. 170-71; U.S., Congress, Senate, Committee on Commerce, Freight Car Shortages, Hearings, before the Special Freight Car Shortage Subcommittee of the Committee on Commerce, United States Senate, on S.3223 and S.3334, 91st Cong., 2nd Sess., 1970, p. 116; U.S., Department of Agriculture, The Freight Car Supply Problem and Car Rental Policies, by Patrick P. Boles, Economic Research Service, Marketing Research Report 953 (Washington, D.C.: Government Printing Office, 1972), pp. 21-22; and "The Freight Car Shortage and ICC Regulation," Harvard Law Review, LXXXV (June, 1972), 1588.

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