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7. Traffic and Operations since 1938

Business, war, and traffic

The authors of the business chronology employed in this paper did not carry it beyond 1938. The war affected diverse economic activities in diverse ways after that year (Table 31). Some promptly fell below, and remained below, their 1938 level. Others revived, but in important cases the rise came to an end quite early and was followed by a decline. Toward the end of the war declines were rather general. Perhaps if all the relevant evidence were assembled and considered it would point to a trough in general business activity somewhere in 1945.

Railway freight traffic revived promptly and continued to grow (except for a slight relapse in 1940-41) to a peak in 1943 (if we consider tonnage) or 1944 (if we consider ton-miles) (Table 32). Quarterly data on ton-miles, which became available in 1944, suggest a peak in the third quarter of that year. Most of the increase occurred in 1938-39.

Passenger traffic rose from its belated trough in 1940 to a peak in 1945. Journeys of the armed forces and other travel on government business accounted for a large part but by no means all of the rise (Table 33).

The subsequent contractions of freight and passenger traffic can be traced in more detail from quarterly or monthly data (Charts 27, 28). The movement of goods, after attaining a peak in the third quarter of 1944, declined to a trough in the first quarter of 1947.¹

¹ Heavy shipments of goods to the Channel in support of the invasion and later of the armies in France account for the location of this peak. The number of special freight trains run for the government per quarter had increased gradually to 14,307 in the first quarter of 1944; it rose to 24,816 in the second and 32,226 in the third, after which it declined. R. Bell, *History of the British Railways during the War, 1939-45* (London, published by Railway Gazette, 1946), p. 267.

In the first quarter of 1947 Britain suffered almost unprecedented heavy snows.
(Continued on page 82)

TABLE 31
Economic Activity in Great Britain, 1938-1946

KIND OF ACTIVITY	UNIT OF MEASUREMENT	IN 1938 Amount	IN HIGHEST WAR YEAR ^a		IN LOWEST YEAR	
			Date	Amount	Date	Amount
Houses built ^b	Thousands	332.4	.....	.....	1944	5.5
Cotton disposals	Thous. tons	515	.....	.....	1945	338
Raw wool consumption	Thous. tons	"	"	"	1944	115
Imports, at 1938 prices	1938 = 100	100.0	.....	.....	1945	61.9
Exports, at 1938 prices	1938 = 100	100.0	.....	.....	1943	29.0
Coal production	Mill. tons	227	1939	231	1945	183
Steel ingot production ^d	Mill. tons	10.4	1939	13.2	1945	11.8
Ships built	Thous. tons	1030	1942	1302	1945	743
Electricity generated	Bill. k.w.h.	25.7	1944	39.6	1945	38.6
Workers in civil employment	Millions	17.4	1939	18.0	1945	16.4

^a Shown only for activities that exceeded their 1938 level in some war year.

^b Including flats, each flat being counted as one unit. Years beginning April 1, England and Wales only.

^c 1938-39 not available. Declined continuously from 239 thousand tons in 1940 to 1944.

^d Includes castings.

Compiled from *Annual Abstract of Statistics*.

After a fall in the first half of 1944 and a rise in the second half, passenger traffic declined from March 1945 to an apparent trough in August 1948.² This long decline during a period of business expansion is explained partly by the cessation of military movements and the gradually slackening pace of demobilization and partly by the resumption of private motoring. The number of persons in the Armed Forces and Auxiliary Services in June diminished by 3,058 thousand in 1945-46, 730 thousand in 1946-47, and 456 thousand in 1947-48. Motor fuel was severely rationed during the war; many car owners put their vehicles in storage and allowed the licenses to lapse. After the first quarter of 1945 licenses were rapidly renewed, indicating a great increase in use of cars, part of it no doubt for journeys that would

They and a coal shortage interfered with railway operations to some extent (*Railway Gazette*, February 7, p. 175; March 7, pp. 200, 213). But the general trend of traffic was downward in earlier and upward in later quarters. Even if the weather had been normal there would have been a trough somewhere in this neighborhood.

² Although February 1944 was higher than March 1945 we do not take it as a peak because we do not know what happened two months before, and because the annual data suggest a steady rise to 1945.

TABLE 32

Freight Traffic and Operating Statistics, 1937-1947

	TONS		NET TON-LOADED		NET TRAIN MILES PER HOUR		NET TON-MILES PER TRAIN HOUR
	ORIGI-NATED ^a (mil-lions)	NET TON-MILES ^b (bil-lions)	MILES PER WAGON LOADED MILE	LOADED WAGON MILES PER TRAIN MILE	TON-MILES PER TRAIN MILE	MILES PER TRAIN HOUR	TON-MILES PER TRAIN HOUR
1937 ^c	297 ^d	18.38	5.65	23.20	131.1	8.61	1,129
1938 ^e	264 ^d	16.67	5.55	22.49	124.9	9.15	1,142
1938 ^e	266	16.27	5.42	22.49	121.8	9.15	1,114
1939	288	†	†	†	†	8.70	†
1940	294	†	†	†	†	7.33	†
1941	287	†	†	25.41	†	7.16	†
1942	295	23.82	5.98	25.63	152.8	7.23	1,105
1943	301	24.36	6.01	26.00	156.0	7.32	1,142
1944	293	24.44	6.01	26.21	157.7	7.14	1,126
1945	266	22.02	5.98	25.92	154.5	7.44	1,149
1946	262	20.64	5.99	25.33	151.2	7.64	1,155
1947	257	20.19	6.23	24.78	153.8	7.58	1,276

^a Excluding free-hauled.

^b Including free-hauled.

^c Basic data from *Railway Returns*.

^d Excluding livestock.

^e Basic data, like those for later years, from *Annual Abstract of Statistics*. Lower 1938 ratios derived from this source result from the smaller figure it gives for aggregate ton-miles.

† Not available.

otherwise have been taken by rail. Apparently new petrol troubles caused a temporary drop in licenses during the winter of 1947-48; the rail traffic shows a corresponding rise.³

Operations during the war cycle

The increase in ton-miles from 1938 to 1944 was accompanied, as usual, by a rise in the average carload, the number of loaded cars in a

³ The number of journeys rose abruptly in September 1947 and fell abruptly in October. The disturbance was confined to the season ticket business. Prices of these tickets were raised from 25 per cent above prewar to 55 per cent, effective October 1. Users rushed to buy them before the price went up. Fares for single journeys also rose, but habitual users who purchase many journeys by means of a single document can act in anticipation of a rise more conveniently than occasional travelers.

TABLE 33
Passenger Traffic and Operating Statistics, 1937-1946

	NUMBER OF JOURNEYS <i>Service and</i>		TRAIN MILES	TRAIN MILES
	<i>government, etc.</i>	<i>Total</i>		PER TRAIN HOUR
	<i>(in millions)</i>			
1937	^a	1,295	283.4	14.97
1938	53.6	1,237	287.4	15.08
1939	53.4	1,226	256.9	14.76
1940	77.7	967	201.3	13.23
1941	116.1	1,023	201.9	13.16
1942	163.7	1,218	203.2	13.38
1943	227.4	1,335	204.2	13.54
1944	250.5	1,345	202.1	13.48
1945	256.9	1,372	215.8	13.86
1946	147.5	1,266	236.9	14.32

^a Not available.

train and the average trainload (Table 32). But, again as usual, the speed of trains declined, and there was little improvement in the amount of traffic movement during a train hour. On the other hand, the 42 per cent increase in the number of passengers from 1940 to 1945 was cared for by an increase of only 14.5 million train-miles, or 7 per cent (Table 33). The number of passengers in a train obviously increased and, since the average speed rose a little, the amount of passenger movement performed per train hour also increased.⁴

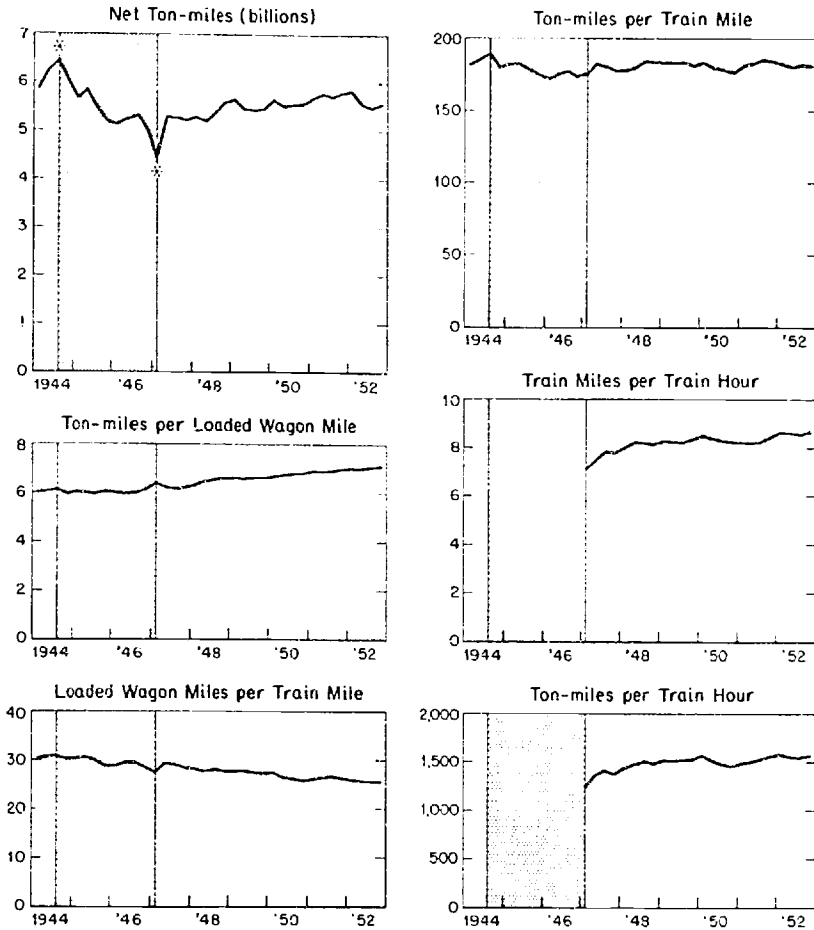
During the 1944-47 contraction in ton-miles, the average wagon-load did not decline but the gain during the preceding expansion was halted (Chart 27). The number of loaded wagon-miles, and the ton-miles, per train-mile did decline. But, once more, speed increased and hourly train performance rose from 1,126 ton-miles in 1944 to 1,276 in 1947.⁵ Coaching train-miles increased during the 1945-48 contrac-

⁴The 1937-40 contraction in travel was unusual in that coaching train miles were curtailed 29 per cent, a drop greater than the decline in the number of passengers, 25 per cent. At first to minimize exposure to air raids, and later to make way for urgently needed freight, many of the passenger trains in the prewar timetable were eliminated. The scheduled time of many others was lengthened. See Bell, Chapter 10 and p. 266. The sharp 1938-40 cut, and the restriction of increase thereafter, were accomplished at a cost in terms of discomfort and inconvenience to passengers that would be tolerated only in a wartime economy. From 1937 to 1938, on the other hand, train-miles actually increased in spite of the decline in travel.

⁵1947 was the trough year in ton-miles. There are no quarterly data on speeds, and hence none on hourly performance, for 1944-46.

CHART 27

Freight Traffic and Operations
 First Quarter 1944-Fourth Quarter 1952



Shaded period is contraction in ton-miles.

tion in travel (Chart 28); in part at least, however, this development reflects an effort to get back to prewar standards of frequency and convenience.⁶

Stocks of equipment altered little during the war and early postwar years. The railroads were able to handle their 50 per cent increase in

⁶This was certainly true in 1948. See British Transport Commission, *Report and Accounts for 1948*, p. 78.

TABLE 34

Changes in Equipment and in Traffic during War Cycle

	AT		AT	PERCENT	
	INITIAL TROUGH	PEAK	TERM- NAL TROUGH	Expan- sion	Con- traction
<i>Freight service</i>					
Year	1938	1944	1947	1938-44	1944-47
Net ton-miles (billions)	16.27	24.44	20.19	50.2	-17.4
Trucks and wagons (thousands)*					
Railway owned, operating stock	660	685	660	3.8	-3.6
Railway owned, available ^b	641	646	586	0.8	-9.3
Privately owned, operating stock	^c	610	594	....	-2.6
Privately owned, available ^{b,d}	^e	550	497	....	-9.6
<i>Passenger service</i>					
Year	1940	1945	1948 ^f	1940-45	1945-48
Number of journeys (millions)	967	1,372	996	41.9	-27.4
Passenger-carrying vehicles (thousands) ^{*,f}					
Operating stock	42.7	40.5	40.4	-5.2	-0.2
Available ^b	40.1	36.3	35.8	-9.5	-1.4

* Average of figures for end of year and end of preceding year.

^b Excluding vehicles under or awaiting repair.

^c No data. 638 thousand owned in July 1937 and 605 thousand at end of 1939.

^d Does not include vehicles not requisitioned for railway operation. There were few of these.

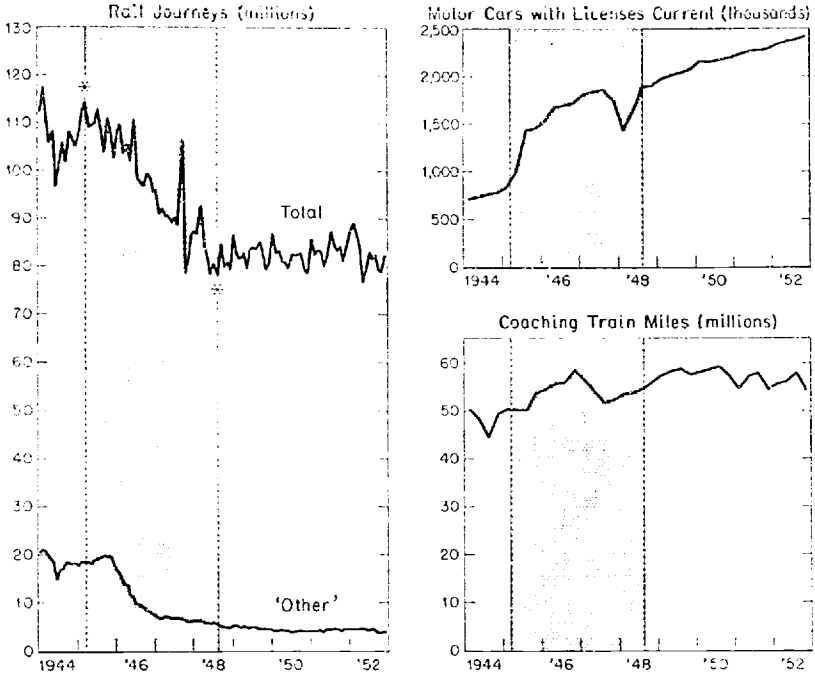
^e The annual number of journeys was slightly smaller in 1949 and 1950 than in 1948; but monthly data suggest a trough in 1948. Cf. Chart 28.

^f Includes rail motor cars.

freight traffic with only a 4 per cent increase in the number of wagons (Table 34). Indeed some wagons were allowed to fall into and remain in disrepair, for the serviceable stock increased only one per cent. The 42 per cent rise in passenger traffic was actually accompanied by a decline in the total stock of passenger-carrying vehicles and a greater decline in the usable stock. Conversely the declines in traffic at the end of the war were greater than the declines in stocks of wagons and carriages. The number of locomotives cannot be subdivided by branch of service, but the highest figure for "operating stock" in all services, in the period 1938-48 (20,611 locomotives, at the end of 1943), is only 5.9 per cent larger than the lowest figure (19,461 at the end of 1941). The highest figure for "available" stock (16,812, at the end

CHART 28

Rail Journeys, and Related Data
January 1944-December 1952



Shaded period is contraction in rail journeys.

of 1943) is 5.1 per cent above the lowest figure (15,991, at the end of 1946). As usual, the railroads were able to deal with heavier traffic by keeping their equipment in use more of the time. The changes in loads, hourly performance, and use of equipment during the war cycles in freight and passenger traffic were broadly similar to those we found in peacetime cycles.

The financial results, too, resembled in some respects those encountered in times of peace. An increase in operating revenues from 1940 to 1944 was accompanied by a falling operating ratio except in the last year (Table 35. Comparable data for 1938 and 1939 are not available). As revenue declined after 1944, the operating ratio rose until expenses exceeded revenues in 1947.

The rise in the margin of profit from 1940 to 1943 must be attributed to the growth of traffic, for changes in price relations were unfavorable to profits. Except for moderate increases in 1940, rates and

TABLE 35
Operating Revenues, Expenses, and Profits, 1940-51

	GROSS OPERATING RECEIPTS (1)	OPERATING EXPENDITURE (2)	NET OPERATING RECEIPTS, (1) - (2) (3)	OPERATING RATIO, (2) ÷ (1), × 100 (4)
	<i>Millions of pounds</i>			
1940	248.0	203.5	44.5	82.1
1941	293.8	226.6	67.2	77.1
1942	343.5	251.7	91.8	73.3
1943	381.7	272.2	109.5	71.3
1944	394.4	301.2	93.2	76.4
1945	383.9	317.0	66.9	82.6
1946	360.7	325.2	35.5	90.2
1947	355.6	367.2	-11.6	103.3
1948	336.1	309.9	26.2	92.2
1949	325.5	312.8	12.7	96.1
1950	340.1	313.7	26.4	92.2
1951	372.7	337.8	34.9	90.6

1940-47, four main railways and London Passenger Transport Board. 1948-51, Railway Executive; operations of London Transport Executive not included.

fares were stable (Table 36). The Board of Trade price indexes most appropriate to a discussion of railway purchases suggest that prices of railway materials and supplies increased. Workers on the railways received successive increases in wages and salaries.⁷

The adverse effect of declining traffic on profits was probably reinforced during 1944-47 by further unfavorable realignments of prices received and paid. Prices of materials and supplies apparently rose faster than rates and fares. Wage rates were advanced in 1945 and again in 1947, but their average percentage rise over the full 1944-47 period cannot be computed and we do not know whether it exceeded the percentage rise in the changes for railway services.

The high operating profits during the war years did not benefit railway stockholders. Beginning in 1940, railway earnings, including those of the LPTB, were pooled. The government guaranteed to the railways an annual net revenue based on prewar figures, and retained the excess, if any. The arrangement continued through 1947; on January

⁷ See *Ministry of Labour Gazette*, Feb., March, July, 1940; May, June, 1941; April, Sept., Oct., 1942; Jan., July, 1943; May, 1944.

TABLE 36

Indexes of Prices of Railway Services and of Wholesale Prices

	RAILWAY SERVICES		Coal	WHOLESALE PRICES ^a	
	Freight rates	Passenger fares		Iron and steel	Nonferrous metals
	1937 ^b = 100			1938 = 100	
1940	109 ^{c,d}	109 ^{c,d}	113.7	114.5	130.5
1941	117	117	129.5	130.2	131.3
1942	117	117	138.9	131.2	133.3
1943	117	117	150.8	131.4	133.5
1944	117	117	169.7	132.4	135.4
1945	117	117	192.4	135.7	134.6
1946	121 ^{e,g}	125 ^{e,g}	198.1	150.4	159.8
1947	132 ^{e,g}	139 ^{e,g}	201.4	159.2	235.6
			1940 = 100 ^h		
1940	100	100	100	100	100
1941	107	107	114	114	101
1942	107	107	122	115	102
1943	107	107	133	115	102
1944	107	107	149	116	104
			1944 = 100 ^h		
1944	100	100	100	100	100
1945	106	100	113	102	99
1946	103	107	117	114	118
1947	113	119	120	120	174

^a Board of Trade indexes.

^b Prior to October 1.

^c Average weighted by number of months rates were in effect.

^d Rates and fares were increased 5 per cent on October 1, 1937; increase became 10 per cent on May 1, 1940 and 16 $\frac{2}{3}$ per cent on December 1, 1940.

^e On July 1, 1946 increase over 1937 became 25 per cent for rates and 33 $\frac{1}{3}$ per cent for fares.

^f On October 1, 1947 increase over 1937 became 55 per cent.

^g Figure above for each year divided by corresponding figure for 1940 or 1944.

1, 1948 the railways became public property. Although the government suffered a heavy loss in 1947 it made a handsome profit over the entire period 1940-47.

The postwar expansion

The data in Table 31 suggest that the British economy was expanding from 1945 to 1946. A new monthly index of industrial production, prepared by the Central Statistical Office, indicates that the expansion

continued thereafter. Converting the "interim" index for 1946 and 1947 to a 1948 base, linking it with a revised index for later periods, and seasonally adjusting the figures, we find that industrial production increased from 74 per cent of 1948 in January 1946 to 123 per cent in April 1951; since then it has declined a little. The growth of output was not only prolonged but steady, except for a temporary set-back caused by the extreme winter weather early in 1947. (Seasonal adjustment of data does not "eliminate" the effects of *extraordinarily* bad weather.)

Rising production was not reflected in rail traffic until after the 1947 disturbance (Chart 27). Ton-miles increased from the first quarter of that year to the first quarter of 1952; more recently they appear to have diminished.

The average wagon-load improved much more distinctly during this expansion of traffic than in earlier expansions. Special influences as well as the usual cyclical processes were at work. One of these was a change in the character of equipment. When the British socialized their coal industry, the new National Coal Board inherited the private rail wagons that formerly belonged to the mine owners. When rail transport was nationalized in 1948, the Coal Board turned these vehicles over to the British Transport Commission, which operates the railroads through its subsidiary, the Railway Executive. Many of the formerly private wagons were antiquated, and the Executive began to break them up. Of 544 thousand acquired, 55,000 were demolished in 1948; 68,000 were withdrawn from service in 1949; 31,000 in 1950; and 27,000 in 1951. They were comparatively small. At the 1937 census, privately owned coal wagons could carry, on the average, only 10.91 tons; wagons owned by railways at the end of the year could carry 11.93 tons. While the Executive was getting rid of this equipment it was also acquiring new vehicles of more than average size. Between the end of 1948 and the end of 1951 the average capacity of all its wagons, old and new, increased from 12.50 to 13.16 tons, at a rate of 0.22 tons per year. The increase for railway-owned wagons from the end of 1921 to the end of 1938 was only 0.10 tons per annum.

In view of the pronounced change in the average load, it is perhaps not surprising that in this expansion of traffic the number of loaded cars per train diminished, although it increased in previous expansions. But one would still expect the growth of traffic to be accom-

panied by an increase in the average amount of freight in a train; actually, however, there was little change in net ton-miles per train-mile.

During the interwar expansions growth of traffic had reduced the speed of freight trains. In the present instance, however, the Executive took special steps of a permanent character to expedite movement, and the average speed increased in 1947-1951. Hourly performance — ton-miles per train hour — consequently improved, even though there was no improvement in ton-miles per train *mile*.

Except for minor and temporary fluctuations, the number of people riding in trains has been remarkably constant since early 1948 (Chart 28). The growing attraction of motor travel almost exactly offset the normal stimulating effect of business expansion on rail travel.

The Executive did not, on balance, reduce the amount of service offered, measured in train miles. This business expansion was not accompanied by the usual, cost-reducing rise in passenger train loads.

Although freight traffic increased, and passenger traffic diminished very little, the revenues of the Railway Executive declined from 1948 to 1949 (Table 35). Higher charges contributed to the subsequent revival. Freight rates were raised $16\frac{2}{3}$ per cent on May 15, 1950; and the rates thus established were raised 10 per cent on April 16, 1951. From year to year the operating ratio varied inversely with revenue. A final profit figure after deductions other than operating expenses is not computed for the railways separately. A "balance on net revenue account" is reported for all BTC undertakings combined — railways, London Transport, road and water transport, hotels, etc. The balance for the first year was a deficit, £4.7 million, which deepened to £20.8 million as operating revenue fell. As the latter revived, the deficit was reduced to £14.1 in 1950 and was succeeded by a very small positive balance, £0.1 million, in 1951.⁵

⁵ BTC's accounting system differs considerably from the system that prevailed under private ownership. Depreciation charges on much of the property are now computed and included in operating expense. For this reason among others, operating ratios before nationalization are not closely comparable with operating ratios afterward. The concept of "balance on net revenue account" differs widely from the old "net revenue." Deductions made in computing the "balance" include not only write-offs and other items but amortization of the British Transport Stock (government debt) issued in exchange for railways and other properties.