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8. Britain and the United States

British transport differs in many ways from American transport. For example, passenger traffic is more important, relative to freight traffic, in Britain than in the United States. Hauls and journeys are much shorter there. British cars, carloads, and trainloads are smaller. The amount of labor required on the railroads is larger in proportion to traffic. But the cyclical experience of British transport enterprises has been broadly similar to that of American enterprises. The following generalizations apply to both countries, except when we draw a specific contrast between them.[1]

Traffic

Fluctuations in traffic correspond in a general way to disturbances in economic activity at large. Before World War I, business contractions were sometimes accompanied by retardations in the growth of rail traffic (if we may trust the annual data), rather than by actual declines. Even when traffic diminished, the next expansion of business usually raised it to higher levels than were ever attained before. After the war, on the contrary, there was little net growth from one peak to the next, or one trough to the next; indeed, in some cycles there was a net decline, especially in passenger traffic. The growing attractiveness of motor transport helps to explain the change in the rail trend. (The rate of growth in motor vehicle registrations and in gasoline consumption was maintained more vigorously after 1929 in Britain than in the United States.) The railroads lost traffic to their new competitors more rapidly in contractions of business than in expansions (British data are less adequate on this point).

[1] The discussion is based on the conclusions about Britain in the preceding sections of this paper, and those about the United States in my monograph, *American Transportation in Prosperity and Depression* (National Bureau of Economic Research, 1948).

The tonnage of durable goods that the railways carry fluctuates more than their tonnage of nondurables. Since railways haul the products and raw materials of many industries, their traffic and earnings are affected both by the mild cyclical disturbances in some parts of the economy and by the severe shocks in other parts. Fluctuations in aggregate freight traffic cannot be ranked among the mildest or among the most extreme of disturbances. Passenger travel by rail is more stable than freight traffic. Season ticket holders in Britain, like commuters in the United States, vary their patronage of the railways remarkably little during the course of a business cycle. Fluctuations in travel by street car and bus, or by private motor car, are also mild.

Are cyclical disturbances in business at large less severe in Britain than in the United States? Many economic activities should be examined for an answer, but data on rail traffic might be helpful. The annual figures for both countries before World War I, however, disclose few contractions in freight and even fewer in passenger traffic. In most of these the decline in tons or passengers carried was 5 per cent or less. The severity of the earlier postwar British fluctuations was accentuated by the great strikes; events like these, fortunately, are not typical of depressions. From 1927, or at least from 1929, to 1938, fluctuations in American freight traffic, both upwards and downwards, were decidedly more severe, percentagewise, than those in British freight traffic (Table 37). Rail passenger travel in Britain had no expansion comparable in time with the 1928-29 expansion in the United States, and no contraction comparable with 1937-38. But the 1929-33 fall in American rail travel, and the subsequent rise ending in 1937, were much greater than their British analogues.

Operations and maintenance

When rail freight traffic expands, the average size of the loads in freight cars is likely to increase, and so is the number of loaded cars in a train; trainloads become heavier.[2] Although loads improve, lines become more congested; trains are slowed, and make more frequent and lengthier halts. The decline in train-miles per train hour is sometimes large enough to offset the rise in ton-miles per train-mile; in such instances, an hour of train operation accomplishes no more movement

[2] In part at least, the average load is high near a peak in traffic because commodities that are always heavily loaded comprise a larger percentage of all traffic in prosperity.

TABLE 37
Comparative Severity of Rail Traffic Cycles, 1927-1938

	GREAT BRITAIN			UNITED STATES		
Level of traffic	*Date level reached*	*Amount*[a]	*% Change from preceding date*	*Date level reached*	*Amount*[a]	*% Change from preceding date*
			TON-MILES[b]			
Trough	July 1928	1,476	......	Dec. 1927	34.13	.....
Peak	Nov. 1929	1,595	8	Aug. 1929	37.84	11
Trough	Dec. 1932	1,198	–25	July 1932	17.11	–55
Peak	June 1937	1,575	31	Apr. 1937	33.06	93
Trough	Aug. 1938	1,339	–15	May 1938	22.88	–31
			NUMBER OF PASSENGERS[c]			
Peak	May 1929	71.6	......	Mar. 1929	27.9	.....
Trough	Apr. 1932	64.0	–11	Mar. 1933	11.6	–58
Peak	May 1937	77.8	22	Mar. 1937	21.5	85

[a] Billions of ton-miles; millions of passengers. Average for month indicated, preceding, and following month.
[b] Revenue and non-revenue ton-miles, G.B.; revenue, U.S.
[c] Since monthly British data including journeys of season-ticket holders are not available, we use number of U.S. passengers excluding commuters. U.S. figures are from unpublished worksheets based on ICC data.

of goods than before. In the United States, however, technological progress increased the average speed even during some of the traffic expansions, although not as rapidly as in the contractions. In America, therefore, congestion did not neutralize the favorable effect of higher loads on hourly performance to the same extent as in Britain.

The rise in loads tends to reduce train labor expense, in spite of the drop in speed. The rules governing wage payment differ from one country to the other, but in both the lengthening of the time required to complete a run does not increase the wages of the crew unless it is great enough to bring the overtime provisions into play.

In passenger service, the number of travelers in a train increases during an expansion of aggregate rail travel. Speed is not affected much, as these trains are given priority. There is an improvement in hourly performance. Wages of train crews and other expenses connected with the running of passenger trains tend to decline relatively to the amount of travel.

Managers of railways do not increase their stocks of equipment in proportion to traffic during an expansion of the latter. They deal with the growth of tonnage or of travel largely by more intensive use of rolling stock.

All these effects are reversed in contractions of traffic. Trainloads diminish, train expenses per ton-mile or per passenger-mile tend to rise, the initial stock of equipment mostly remains on hand or even increases and vehicles are less intensively used.

What is true of train labor is true of railway labor in the aggregate. The number of hours that must be paid for rises less than traffic, and it tends to fall less than traffic, although technological progress sometimes keeps the tendency from working out. In the United States at least, manhours actually worked fluctuate less than traffic. (There are no data for Britain.)

Locomotives in freight service do not increase or decrease their consumption of fuel in proportion to the rise or fall in ton-miles. Fuel consumed in passenger service does not fluctuate as much, percentagewise, as passenger-miles, in the United States, and probably not in Britain. (Again, no data.)

We investigated different aspects of maintenance work in the two countries. In the United States we found that manhours paid for in this kind of work are, if anything, somewhat more stable than traffic. In Britain, repairs to equipment are about as stable as traffic, on an average, while the quantities of materials used in maintenance of way are somewhat more stable.

Costs and financial returns

Prices of commodities used in railway operations rise during a business expansion and fall during a contraction, in the United States and very likely in Britain also (where, however, we have found no approximation to an index of such prices). In both, changes in wage-rates are related very loosely to cycles in traffic or business. On the other hand, labor requirements, fuel requirements, and probably requirements of some materials, fall, on a per-unit-of-traffic basis, in expansion and rise in contraction.[3] The change in prices tends to raise and lower cost per traffic unit in positive conformity to the course of a cycle, while the

[3] In what follows, we assume that traffic and business change in the same direction most of the time. This was true in the interwar period, to which most of our operating and financial data pertain.

change in unit requirements tends to make unit cost vary inversely with traffic and business. During most of the interwar cycles the changes in requirements were more potent than the changes in prices paid, for unit cost usually fell in expansions and rose in contractions. (This is clearer in the U. S. than in Britain.)

The prices the railways charge for their services are usually more stable than their unit costs. Hence the ratio of costs to revenue falls in expansions and rises in contractions. Profit margins rise and fall with traffic, and so, of course, do aggregate profits. The accumulated investment in railways changes only gradually, and the rate of return on investment rises and falls with traffic.