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**THE HISTORY
AND ECONOMICS OF
TRANSPORT**

THE HISTORY AND ECONOMICS OF TRANSPORT

BY

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PREFACE

TRANSPORT problems are not of recent origin. In one form or another they have arisen ever since man had any goods to move from place to place, and as transport has become more completely organised they have provoked increasing controversy. Nor can it be said that their solution has never been attempted. In the railway period alone Parliament and traders have given much time to their elucidation. But it is only in recent years that they have been systematically studied. The new Universities and Schools of Economics having included the subject of transport in the curriculum for their commerce degrees, it has come to be treated as a branch of economics deserving of accurate, scientific inquiry and study. The aim of this volume is to assist this study, and consequently much that has been written is elementary. There is also much that, necessarily, is sketchy, because, with a subject so comprehensive, it has been found impossible to deal in detail with every branch ; to have done so would have required several volumes. There is much also that, inevitably, touches controversial ground. Where this is so an attempt has been made to present both sides of the question as fairly and as adequately as possible. But while the primary aim has been to produce a text-book for the student, the authors hope that it will be found interesting to the general reader, particularly to the business man whose daily affairs bring him into close contact with the problems of transport.

This volume was mainly written before the War, and was first published in 1915. The first edition having been exhausted, it was necessary to reprint, and advantage has been taken to add to the sections on Railways and Shipping, giving in both instances some account of what happened during the War period.

Some of the appendices have also been brought up to date.

These should prove useful both to the student and to the general reader.

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APPENDIX I

TABLE SHOWING THE DEVELOPMENT OF RAILWAY MILEAGE, CAPITAL, TRAFFIC, EXPENSES AND
RECEIPTS FOR THE UNITED KINGDOM
(The figures are taken from the Statistical Abstract.)

Year.	Length of Line open at end of each year. Miles.	Total paid-up Capital.	Number of Passengers carried. 1 Including season-ticket holders. 2 Excluding ditto.	Total Traffic Receipts.	Ditto per Mile.	Working Expenses.	Net Receipts;	Proportion of Working Expenses to Gross Profits.
						Not given till 1854.		
		£		£	£	£	£	%
1848	5,127	200,173,059	57,965,070 ¹	9,933,552	1,937			
1855	8,280	297,584,709	118,595,135 ¹	21,507,599	2,597	10,299,709	11,207,890	
1865	13,289	455,478,143	251,959,862 ¹	35,751,655	2,691	17,149,072	18,602,582	
1875	16,658	630,223,494	506,975,234 ¹	58,982,753	3,563	33,220,728	28,016,272	54
1885	19,169	815,858,055	697,213,031 ¹	66,644,967	3,505	36,787,957	32,767,817	53
1895	21,174	1,001,110,221	929,770,909 ²	81,396,047	3,844	47,876,637	38,046,065	56
1905	22,847	1,282,801,000	1,199,022,000 ²	105,131,709	4,601	70,064,663	43,466,356	62
1910	23,387	1,318,515,000	1,306,728,000 ²	114,237,132	4,885	76,569,676	47,355,889	62
¹ 1912	23,441	1,334,964,000	1,294,337,000 ²	118,307,216	5,047	81,224,343	47,329,074	63

¹ These figures are only continued to 1912, because in 1913 a new system was introduced and the figures for subsequent years are not properly comparable with those in the above table.

APPEN

SKELETON SPECIMEN OF THE FORM OF DETAILED REVENUE AND COMPANIES (ACCOUNTS AND

No. 10.—RECEIPTS AND EXPENDITURE

Dr.	—	Year 19 .	Percentage of Traffic Receipts.	
To Expenditure.	—	—	—	—
See Abstracts.	£ s. d.	£	Per cent.	Per cent.
A: Maintenance and renewal of way and works				
B: Maintenance and renewal of rolling stock—				
(1) Locomotives	£ s. d.			
(2) Carriages				
(3) Wagons				
C: Locomotive running expenses	£ s. d.			
D: Traffic expenses				
E: General charges				
Law Charges				
Parliamentary expenses				
Compensation (accidents and losses)—	£ s. d.			
Passengers				
Workmen				
Damage and loss of goods, property, &c.				
Rates				
Taxes				
Government duty				
G: Running powers (balance, debit or credit)				
Total traffic expenditure £				
J: Joint lines ¹				
Miscellaneous				
Total expenditure £				
Net receipts	£			
Total	£			

NOTE.—Gross receipts to include the whole of the receipts from traffic company's line by trains of other companies and no annual payment is made proportion of traffic receipts accruing to other companies in respect of running deduction from the company's traffic receipts in this statement, but to be proportion of the traffic receipts accruing to the company in respect of trains the traffic receipts in this statement, and entered as receipts in the Running

¹ Under this heading should be entered only the expenditure or receipts of jointly owned and are not already embodied in those of the parent companies (see Abstract J). In the case of other heads on the respective sides of this Account.

DIX II

EXPENDITURE ACCOUNT REQUIRED TO BE KEPT UNDER THE RAILWAY RETURNS) ACT, 1911

IN RESPECT OF RAILWAY WORKING.

Cr.

By Gross Receipts.	—	—	Year 19 .	Percentage of Traffic Receipts.	
				—	—
	£ s. d.	£ s. d.	£	Per cent.	Per cent.
See Abstracts.					
Passenger train traffic—					
Ordinary passengers—					
First class					
Second class					
Third class					
Season tickets—					
First class					
Second class					
Third class					
Workmen's tickets					
Total receipts from passengers					
Mails					
Parcels up to 2 cwt., parcels post, and excess luggage					
Other merchandise by passenger trains					
F: Less expenses of collection and delivery					
Total passenger train receipts					
Goods train traffic—					
Merchandise	£ s. d.				
F: Less expenses of collection and delivery					
Live stock					
Coal, coke, and patent fuel					
Other minerals					
Total goods train receipts	£				
Total traffic receipts	£				
H: Mileage, demurrage, and wagon hire					
J: Joint lines ¹					
Miscellaneous					
Total	£				

carried over the company's lines, except where (a) the traffic is carried over the therefor, or where (b) the payment made is by way of a fixed rent. The powers exercised by them over the company's lines not to be treated as a entered as a payment in the Running Powers Account (Abstract G). The run by the company over the lines of other companies to be excluded from Powers Account.

jointly leased lines in respect of which the accounts are prepared by or for the joint committee and joint lines, the company's proportion of the revenue and expenditure to be spread over the various

APPENDIX III

SKELETON SPECIMEN OF THE FORM OF REVENUE AND EXPENDITURE
ACCOUNT IMPOSED ON THE RAILWAY COMPANIES BY THE ACCOUNTS AND
RETURNS ACT OF 1911

REVENUE RECEIPTS AND EXPENDITURE OF THE WHOLE UNDERTAKING

See State- ment.		Gross Receipts.	Expendi- ture.	Net Receipts.	Year 19 .		
					Gross Receipts.	Expendi- ture.	Net Receipts.
					£ s. d.	£ s. d.	£ s. d.
10	Railway				£	£	£
11	Omnibuses and other pas- senger vehicles not running on the railways.						
12	Steamboats						
13	Canals						
14	Docks, harbours, and wharves						
15	Hotels and refreshment rooms and cars where catering is carried on by the com- pany.						
16	Other separate businesses car- ried on by the company (in detail).						
	Total	£					
Miscellaneous Receipts (Net)—							
	Rents from houses and lands						
	Rents from hotels						
	Other rents, including lump-sum tolls						
	Interest and dividends from investments in other companies (in detail).						
	Transfer fees						
	General interest						
	Special Items						
	Total net income						

APPENDIX IV

PREFERENTIAL RATES IN EUROPEAN COUNTRIES

The following are extracts from the Foreign Office Reports (Cd. 8720 of 1898)—

AUSTRIA-HUNGARY.—" Preferential rates on Austrian railways are granted principally for the following reasons: (1) To enable a line of railway with a circuitous route to compete with a more direct line which would otherwise monopolise the carriage of goods from one given point to another. (2) To enable an Austrian industry to compete with a similar industry abroad which is more advantageously situated. Thus, preferential rates are granted for this reason on Bohemian glass, beet-root, and its products and on sugar for export." A reduction of 10 per cent. on rates is granted when sugar is exported, and of 15 per cent. in the case of iron and steel.

BELGIUM.—" With a view to the development of the traffic along the Belgian lines of railways preferential rates are very largely granted by the Belgian Government, who now (1898) own four-fifths of the whole railway system of Belgium. Very great reductions are made in favour of all kinds of merchandise destined for Belgian ports, and these, no doubt, have very much contributed to the enormous increase which has taken place during the last few years in the shipping trade of Antwerp. These rates are mostly calculated on a differential scale; the cost of transport decreasing per kilometre in proportion with the distance carried. . . . A series of special fixed tariffs has also been arranged with certain regular lines of steamers and also with other European countries for the direct transit of goods in order to encourage as much as possible their export as well as their import through Belgian ports."

DENMARK.—" . . . A grant made to the United Steamship Company of Denmark for establishing a bi-weekly service for the carriage of dairy-farm produce between Esbjerg and Grimsby destined for the Midland markets of England. The Inspector (of the Department of Agriculture) states that the agricultural interests desired that the weekly service from Esbjerg to Grimsby, which has been carried on by the United Steamship Company for the last six years should be doubled and that for this purpose a grant of 75,000 kroner (£4,166) was voted in the current year's (1898) budget. This route is now placed under Government supervision and in addition to the new bi-weekly service from Esbjerg to Grimsby it is stipulated that the company shall provide for the careful treatment of the goods. The ships on the lines are being fitted with refrigerators suited to the different descriptions of goods carried. A reduction of 20 per cent. is also made in the former freight rates. For the future the rates are to be: for one ton of butter, 16s.; for one ton of salt meat, 12s.; for one ton of fresh meat, 18s.; for one ton of eggs, 20s.; for one ton of fresh fish, 14s. It is expected that by this arrangement perishable goods destined for the Midland Counties of England will be conveyed *via* Esbjerg in greater quantities than heretofore, and will reach the consumers in better and fresher condition."

With respect to the railway rates of Denmark, the same report gives details and says : " Your lordship will observe that many articles useful to, or produced by, agriculture are carried at a low rate, and I understand that these rates have been specially adjusted with a view to the assistance of the agricultural interest, although they cannot be termed preferential as against the products of other countries inasmuch as the charges are lowered in certain ratios to the distance carried up to 180 kilometres (about 112 miles) after which distance no further diminution is made in the rates."

FRANCE.—" The bounties given on French shipbuilding and on navigation equalled about £400,000 annually from 1890 to 1898. The Government controls railway rates and occasionally suggests certain modifications of rates."

GERMANY.—" In Oct., 1884, the Minister of Public Works addressed a letter to the Railway Council in which he laid down the conditions under which preferential tariffs should be and had been granted on the State railways. These are—

" (1) To assist agriculture and industry by granting cheap rates for raw material or subsidiary material.

" (2) To assist German manufacturers in competition with foreign importers at home and to assist German export trade abroad.

" (3) To assist German in competition with foreign ports.

" (4) To look after the interests of German railways and waterways in competition with those of foreign nations."

Dealing with the rates in existence the report says that " the exceptional or preferential tariffs fall under several heads of which the principal are as follows—

" (1) Exceptional or preferential tariffs, the object of which is to enable German goods to compete with foreign goods in Germany and abroad. . . ."

" In order to enable German ports to compete with the French, special tariffs are given to goods imported to Austria, Italy, and Switzerland through German ports. . . ."

" Special rates are also given to keep the traffic from passing from German to the French or Austrian lines. . . ."

A detailed table of rates in operation in Germany is prefaced by the following sentence—

" It will be seen that the local rates are 200 per cent. higher per kilometre than the preferential rates to the North Sea ports."

A BRITISH CONSUL'S LETTER.—Extract from a letter under date 23rd April, 1904, from Mr. Ralph Bernal, H.M. Consul at Stettin: " In comparing freights to and from Germany it must be remembered that the German State railways grant preferential rates on many goods sent from the interior to the coast and abroad. Thus, German coal from Silesia to Stettin pays 74 to 77 pfgs. per 100 kilos; British coal from Stettin to Silesia pays 106 to 110 pfgs. Freight for coal, Königsgrube to Stettin, mks. 7.35 per ton; Stettin to Königsgrube, mks. 12.40. Similar preferential rates are granted on other goods to the detriment of the competing British product, the higher freight acting practically as an extra import duty."

APPENDIX V

TON MILE AND PASSENGER MILE STATISTICS

The following is an example of the extent of the various uses to which ton-mile and passenger-mile statistics can be applied—

- Ton Miles ÷ length of line = average density of freight traffic.
- “ “ ÷ tons carried = length of haul.
- “ “ ÷ shunting hours = ton miles per train hour.
- “ “ ÷ train miles = average load per train.
- “ “ + wagon miles = average load per wagon.
- “ “ ÷ weight of coal consumed = coal per revenue unit.
- Passenger Miles ÷ train miles = average number of passengers per train.

Such statistics should include the following—

1. Ton mileage = tons × miles conveyed.
2. Passenger mileage = passengers × miles conveyed.
3. Train “ = trains × “ “
4. Wagon “ = wagons × “ run.
5. Carriage “ = carriages × “ “
6. Engine “ = engines × “ “
7. Train load “ = ton or passenger miles ÷ train miles.
8. Wagon load = ton miles ÷ loaded wagon miles.
9. Carriage “ = passenger miles ÷ carriage miles.
10. Engine “ = ton or passenger miles ÷ engine miles.
11. Engine hours = train hours and shunting hours.
12. Ton miles per engine hour = ton miles ÷ engine hours.
13. Tonnage of goods.
14. Number of passengers.
15. Density of traffic ton or passenger miles ÷ mileage of line open for traffic.
16. Average length of haul per ton or per passenger.
17. Average number of wagons per train = wagon miles ÷ train miles.
18. Average number of carriages per train = carriage mile ÷ train miles.
19. Average rate per ton mile = total freight receipts ÷ ton miles.
20. Average fare per passenger mile = total passenger receipts ÷ passenger miles.
21. Average receipt per train mile = total receipts ÷ train miles.
22. Cost per ton mile.
23. Average cost per passenger mile.
24. “ “ “ train mile.

APPENDIX VI

TABLE A

PART I. MAXIMUM TOLLS AND WHARFAGE CHARGES

SCALE I

APPLICABLE to all articles comprised in the classification, except canal; tap mill forge and coal cinders, coal, coke, culm, and slack.

In respect of Merchandise comprised in the under-mentioned Classes, except as above.	MAXIMUM TOLLS.				Maximum Wharfage Charges.	
	For the first 3 miles or any part of such distance.	For the next 10 miles or any part of such distance.	For the next 10 miles or any part of such distance.	For the remainder of the distance.		
A.	Per ton per mile. d.	Per ton per mile. d.	Per ton per mile. d.	Per ton per mile. d.	Per ton. d.	
Division 1	0-50	0-50	0-25	0-25	1-50	A.
A (Except Division 1) and B C	1-20	0-75	0-25	0-15		A (Except Division 1 and B C
C (Except Timber)	1-20	0-85	0-50	0-25	3	C (Except Timber)
For Timber	1-30	0-95	0-55	0-35	3	For Timber
1	1-45	1-00	0-60	0-40	3	1
2					4	2
3					4	3
4					4	4
5					4	5

Division 1 of Class A comprises the following articles : Basic slag unground gaslime or gas purifying refuse, gravel, limestone in bull manure (street, stable, farmyard) in bulk, night soil, slag or scori (blast furnace) and stone and undressed material for the repair of roads, lime, gas water, refuse, and rubbish, to tips, and ashes.

Part I, Maximum Tolls and Wharfage Charges. Scale 2. Applicable to canal tap mill forge and coal cinders, coal, coke, culm and slack not intended to be *bonâ fide* and exclusively used and consume at a district work under the provisions of Section 20 of this schedule on the part of the canal between Farmer's Bridge at Birmingham and Whittington Brook, including the Digbeth Branch—

Maximum Tolls
per ton per mile, 1d.

Maximum Wharfage Charges
per ton 1-50d.

On any other part of the canal—

Maximum Tolls
ton per mile, 1-40d.

Maximum Wharfage Charges
per ton, 1-50d.

Notwithstanding anything in this Schedule the toll in respect of iron ore, iron slag, tap mill forge, and coal cinders, coal, coke, culm and slack, to which Scale 2 is applicable, shall not exceed ninepence per ton for any distance except when conveyed by the way of the Birmingham Top Level to any part of the canal in Birmingham, or when conveyed to or from any other canal in Birmingham by the way of the Birmingham Top Level, in which case the toll shall not exceed ninepence halfpenny per ton for any distance, but the said toll of ninepence or ninepence halfpenny shall be in addition to the special charge authorised by this schedule for the Netherton Tunnel.

APPENDIX VII

CANALS OF THE SHROPSHIRE UNION RAILWAYS AND CANAL COMPANY.

PART I. MAXIMUM RATES AND CHARGES.

Applicable only to the canals of the Shropshire Union Railways
and Canal Co.

In respect of Merchandise comprised in the under- mentioned Classes.	MAXIMUM RATES FOR CONVEYANCE.				Maximum Station Terminal at each end.	MAXIMUM SERVICE TERMINALS.			
	For the first 10 miles or any part of such distance.	For the next 10 miles or any part of such distance.	For the next 10 miles or any part of such distance.	For the remain- der of the distance.		Loading.	Un- loading.	Cover- ing.	Un- cover- ing.
	Per ton per mile. d.	Per ton per mile. d.	Per ton per mile. d.	Per ton per mile. d.		Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. d.
A	0-90	0-80	0-70	0-60	3	—	—	—	—
B	1-15	1-00	0-90	0-75	3	—	—	—	—
C	1-50	1-40	1-25	1-00	6	3	3	1	1
1	1-65	1-50	1-30	1-10	9	5	5	1-50	1-50
2	2-10	1-90	1-75	1-40	9	8	8	2	2
3	2-60	2-20	1-75	1-65	1 0	1 0	1 0	2	2
4	3-00	2-75	2-20	1-95	1 0	1 4	1 4	3	3
5	3-60	3-25	2-80	2-25	1 0	1 8	1 8	4	4

APPENDIX VIII

MARKET PRICE OF COAL AT CARDIFF AND THE TYNE IN 1913 AND 1914.

MARKET PRICE OF COALS FROM 1ST JANUARY, 1913, TO
31ST MARCH, 1914.

These figures are taken from actual contracts.

		Best Cardiff Steam Shipment Cardiff.	Best Durham Steam Shipment Tyne Dock.	Best Northland Steam Shipment Tyne.
1913	1 January	18/6 to 18/9	16/-	15/- to 16/6
	15 "	19/- " 19/6	15/6 to 16/-	15/- " 16/-
	1 February	19/- " 19/6	15/- " 15/6	15/3 " 15/6
	28 "	19/- " 19/6	14/6	14/6 " 15/-
	8 March	19/6 " 20/-	14/9 to 15/-	15/-
	25 "	19/6 " 19/9	16/- " 16/6	16/-
	1 April	19/6 " 20/-	16/-	16/- to 17/-
	15 "	20/6 " 21/-	16/-	15/6
	1 May	21/6 " 22/-	16/-	17/-
	13 "	—	15/6 to 16/-	16/6 to 17/-
	2 June	22/- to 22/6	15/-	15/- " 15/3
	18 "	20/6 " 21/-	14/- to 14/6	14/9 " 15/-
	1 July	20/6 " 21/-	14/- to 14/6	15/- " 15/6
	15 "	20/6 " 21/-	14/- " 14/6	15/- " 15/3
	4 August	20/6 " 21/-	14/- " 14/3	15/6 " 15/9
	20 "	20/9 " 21/3	14/- " 14/6	15/6
	1 September	20/6 " 21/-	14/-	14/6 to 14/9
	15 "	20/- " 20/6	14/6	15/-
	1 October	20/- " 20/6	13/6	14/9 to 15/-
	16 "	19/9 " 20/3	13/6	15/6 " 16/-
1 November	20/- " 20/3	13/6	14/9 " 15/-	
16 "	20/3 " 20/6	13/6 to 14/-	14/9 " 15/-	
1 December	21/6 " 22/-	13/6 " 14/-	14/9 " 15/-	
15 "	20/9 " 21/6	14/6 " 14/9	15/3 " 15/6	
1914	3 January	20/- to 20/6	13/6 to 14/-	14/6 to 15/-
	16 "	18/9 " 19/3	12/6 " 13/-	14/3 " 15/-
	2 February	18/9 " 19/-	12/6 " 13/-	14/3 " 14/6
	16 "	18/9 " 19/3	12/3 " 12/9	13/6 " 14/-
	1 March	18/9 " 19/-	12/6 " 12/9	14/-
	15 "	18/- " 18/6	12/9 " 13/-	13/6 to 14/-
	31 "	18/6 " 19/-	12/9 " 13/-	13/9 " 14/-

APPENDIX IX

PRINCIPAL COAL-EXPORTING CENTRES OF THE UNITED KINGDOM

TABLE SHOWING PERCENTAGE OF THE EXPORTS OF COAL FROM CERTAIN
GROUPS OF PORTS TO THE TOTAL EXPORTS OF COAL FOR THE WHOLE
OF THE UNITED KINGDOM—

	1850.	1860.	1870.	1880.	1890.	1900.	1910.	1912.
	%	%	%	%	%	%	%	%
Bristol Channel Ports . . .	13·3	24·4	31·2	39·0	43·6	41·9	36·8	38·5
North-Western Ports . . .	8·3	8·6	4·9	3·4	2·1	1·6	2·2	3·9
North-Eastern Ports . . .	63·6	53·5	46·9	39·5	3·1	29·7	30·0	31·6
Humber Ports . . .	2·0	3·4	4·5	6·7	1·7	9·5	10·3	10·2
East Scotland Ports . . .	6·1	5·8	7·5	7·8	11·4	13·1	10·5	9·2

The figures for the years from 1850 to 1900 are extracted from a similar table in a paper on Coal Exports submitted to the Royal Statistical Society by Mr. D. A. Thomas on 19th May, 1903. Those for 1910 and 1912 are compiled from the Annual Statement of Trade of the United Kingdom.

APPENDIX X

TABLE SHOWING THE DEVELOPMENT OF THE PRODUCTION AND EXPORT
OF COAL FOR THE UNITED KINGDOM FROM 1855

(The figures are taken from the Statistical Abstract.)

Year.	Production.	Exports (coal, cinders, & fuel).	Percentage Exported.
1855	61,453,079	4,976,902	8·09
1860	80,042,698	7,321,832	9·14
1870	110,431,192	11,702,649	10·5
1880	146,818,622	18,719,971	12·7
1890	181,614,288	30,142,839	16·5
1895	189,661,362	33,101,452	17·4
1900	225,181,300	46,098,228	20·4
1905	236,128,936	49,359,272	20·9
1910	264,433,028	64,520,320	24·3
1912	260,416,155	67,035,848	25·7
1914	269,926,000	—	—
1916	260,488,000	—	—
1918	231,402,000	—	—
1919	¹ 232,574,000	—	—

¹ Subject to revision.

APPENDIX XI

COAL PRODUCTS. BRITISH DOMINIONS.

In thousands of tons (000 omitted).

Years.	India.	Canada.	Australia.	New Zealand.	Natal ¹	Transvaal ²
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1890	2,168	3,117	3,467	637	81	—
1895	3,537	3,512	4,289	726	158	—
1900	6,118	5,158	6,385	1,093	241	451
1905	8,417	7,739	7,494	1,585	1,129	2,327
1910	12,047	11,526	9,758	2,197	2,294	3,547
1912	14,706	12,957	11,729	2,177	2,468	4,242
1914	16,728	12,372	12,644	2,312	7,831	
1916	17,531	13,139	9,969	2,293	9,283	
1918	21,055	13,588	11,125	2,067	9,457	
1919	22,109	12,325	10,697	Not available	9,979	

¹ Union of South Africa since 1906.

² Subject to revision.

COAL EXPORTS. BRITISH DOMINIONS.

In thousands of tons (000 omitted).

Years.	India.	Canada.	Australia.	New Zealand.	Natal ¹	Transvaal ¹
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1890	40	812	1,935	78	8	—
1890	53	1,204	2,253	93	82	—
1900	304	1,757	1,762	114	213	
1905	594	1,797	2,028	122	96	
1910	758	2,057	1,713	277	95	
1912	874	1,598	2,162	299	95	

¹ British South Africa since 1906.

APPENDIX XII

COAL PRODUCTION. FOREIGN COUNTRIES FROM 1890.

(From the Statistical Abstract.)

Metric Tons (000 omitted).

Years.	Germany.	Belgium.	France.	Japan. ⁴	United States of America.
1890	70,238	20,366	25,591	2,640	143,128
1895	79,169	20,451	27,538	4,843	175,193
1900	109,290	23,463	32,722	7,489	244,653
1905	121,299	21,775	25,218	12,008	356,451
1910	152,428	23,917	37,635	15,531	455,024
1911	160,748	23,054	38,644		450,261 ¹
1914	245,482	16,714	27,528	22,339	465,860
1916	² 252,847	16,863	21,310	33,010	535,325
1918	² 261,108	13,822	26,259	28,203	615,260
1919	² 210,300	18,546	22,477	¹ 30,832	493,745

¹ Not official.

² Subject to revision.

³ Production from fields included inside former boundaries before changed by Peace Treaty.

⁴ Includes Twiwan (Formosa) and Karafuto (Japanese Sakhalin).

COAL EXPORTS. FOREIGN COUNTRIES.

(COAL, COKE, ETC.).

(000 omitted.)

Years.	Germany.	Belgium.	France.	Japan.	United States of America.
1900	15,266	5,866		3,380	(Long Tons) 7,189
1905	18,156	5,184		2,548	9,020
1910	24,257	5,508		(1909) 2,867	13,367
1911	27,406	5,700			14,985

APPENDIX XIII

PRICES AND CONDITIONS FOR THE SUPPLY OF COAL
AT VARIOUS COALING STATIONS FOR THE YEARS
1913, 1916, 1917 AND 1920 (TO APRIL 1ST).

ABBREVIATIONS.

A. = Australian	B. = Bengal	L. = Large	
P. = Pocohontas	C'dale. = Coalbrookdale	S. = Screened	
Cl. = Clearfield	C.B. = Collie Burn	U. = Unscreened	
J. = Japanese	N.R. = New River	R/m. = Run of the Mine	
L.S. = Lump in Stream	Wt. = Westphalia	W. = Welsh	

N.B.—Where a small figure is added after the price (e.g., 6d.) a rebate is indicated, and that amount must be deducted from the gross figure.

The figures are taken from actual contracts, except those marked * which are current prices.

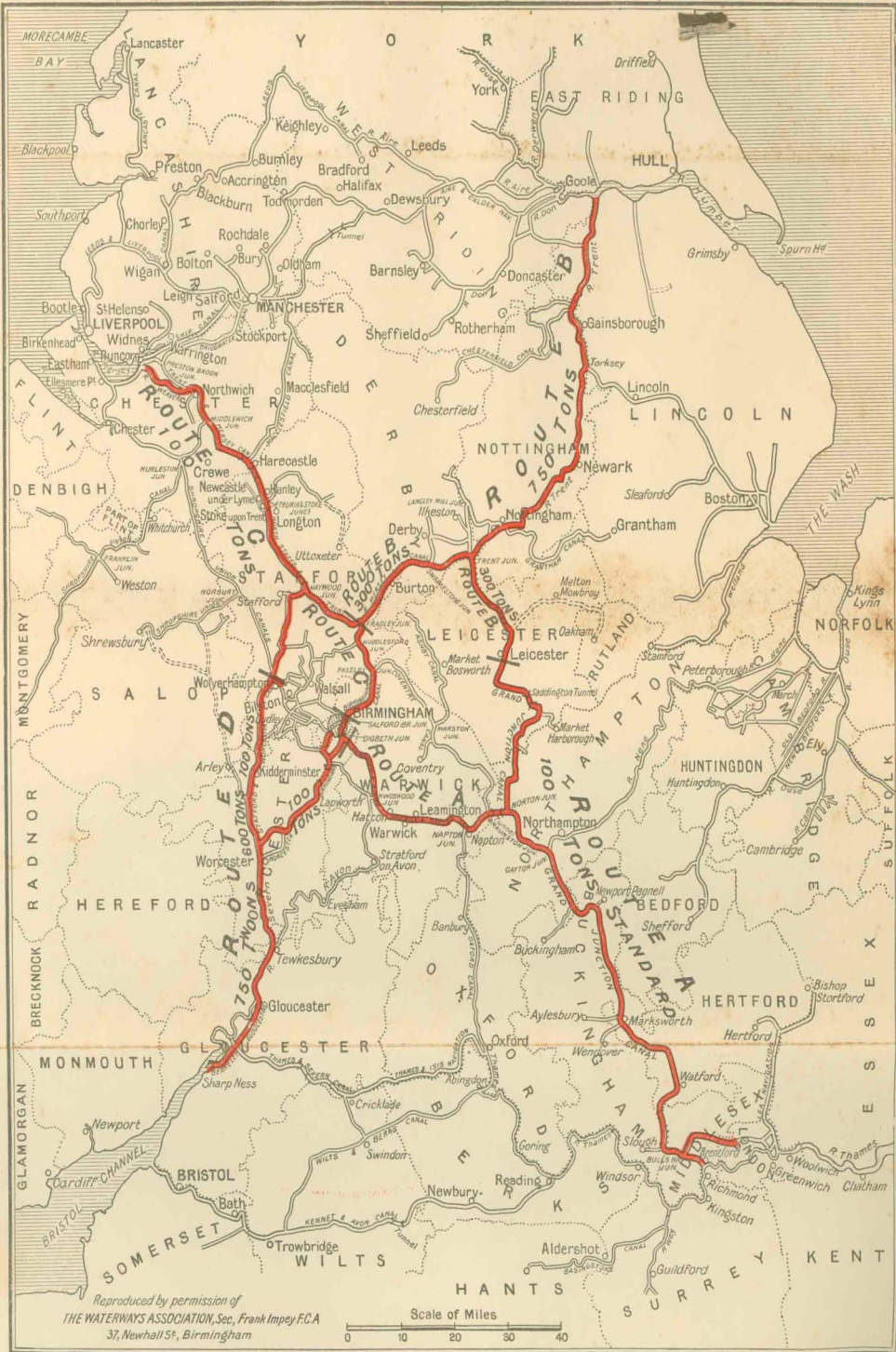
Ports.	1913.	1916.	1917.	1920.
Adelaide . . .	23/-, 25/6, 24/6			
Amsterdam . .	16/9 W.			
Aden	Current W.	*110/- W. to 150/-	*110/- S. Afric. to 155/-	*125/- to 135/-
Algiers	28/- W., 25/6, D.U. 1/-	*104/- to 111/-		*148/6 to 190/-
Antwerp	18/- West			
Auckland . . .	23/-	25/-	26/6	40/9
Albany	22/-, 25/6	29/9	24/-, 23/-	30/-
Bergen	24/3 N.C.			
Baltimore . . .	\$3.12 Cl.	\$3.35 Miller Vein	\$5.00.	*\$7.00 trimmed to \$8
Barbadoes . . .	26/- N.R. or P, 6d.	*41/- N.R. or P to 60/-	*65/- to 77/6	*120/-
Bremerhaven . .	20/-			
Brake	19/3 and 20/3			
Bremen	19/6 and 20/- Wt.			
Bombay	23/- Bengal, Jap., Aust., S. African	24/6 Bengal	27/- Bengal	Rs. 23
Bahia	54/6 W., 6d.	*120/- W.	*107/6 W. or Amer. 187/6	*180/- to 200/-
Buenos Aires . .	43/- W., 3/-	*77/6 W. to 125/-	*107/6 W. or Amer. to 187/6	*155/- to 160/-
Bahia Blanca . .	46/- W., 6d.	*80/- W. to 127/6	*110/- W. or Amer. to 190/-	*164/-
Brisbane	10/6, 12/-, 12/3, 12/6, 16/6			
Bermuda	38/- P. or N.R.	*54/- P. or N.R. to 77/-	*77/- to 85/-	*135/-
Batavia	43/6 W., 28/- A. or J. Natal 27/- A., 25/- B.			Fl. 63.50 along- side wharf Fl. 66.00 in harbour

Ports.	1913.	1916.	1917.	1920.
Bunbury . . .	—	15/- f.a.s. screened 14/- f.a.s. unscreened	15/- f.a.s. 14/- f.a.s.	22/6 screened
Charlestown . . .	\$5.35 C.C.B.P.	\$3.10 Clinchfield at coal piers \$4.15 Clinchfield in stream	\$5.00. \$6.10.	\$8.50 ex lighters 6.50 ex chates
Constantinople . . .	28/6 W.			
Copenhagen . . .	20/- N.C.D.U.			
Colombo . . .	42/6 W., 27/6 ded 6d.	*40/- Indian to 60/-	*65/- Indian to 77/-	*97/6 Indian to 107/6
Calcutta . . .	Rs. 9, 15 J.N. 3 ans.	Rs. 9.6 Shaw's Nav.	Rs. 10.8	Rs. 12
Coronel . . .			*42/6 franco	*65/- Schwager
Chingwantas . . .	13/9 lump, 9/9 slack	13/3 lump, 9/3 slack	19/-, 15/-	63/- lump, 46/- slack
Chefoo . . .	17/- lump, 13/- slack	17/- lump, 13/- slack	24/-, 20/-	
Capetown . . .	25/6	25/- Witbank	35/- Witbank	52/6 Witbank
Dunkirk . . .	21/9 F.N.			
Dartmouth . . .	22/6 D. (U)			
Dakar . . .	36/- W. 6d.	*92/6 W.	*87/6 Welsh or other coal	*147/6 *170/-
Dalry . . .	14/3 No. 1, 12/9 R/m.	14/6 screened, 12/9 unscr.	22/-, 20/3	
Dairen . . .	14/9 Fushau			
Delagola Bay . . .	15/- Large, 14/- Nuts	16/3	25/6	41/-
Emden . . .	19/- Wt.			
Ferrol . . .	22/6 W.	*86/- W.	*85/- W.	
Faya . . .	34/- W. 6d.	*72/6 W. to 107/6	*95/- W. or other to 140/- 18/3 f.a.s. 17/3 f.a.s.	*165/- to 170/- 25/9 trimmed
Fremantle . . .	15/3, 25/6			
Gulfport . . .	\$3.40 & 4.40 A.P.	\$3.40		
Galveston . . .	\$6.25, P. 6.00	\$6.75 N.R.	7.15 Arkansas	*\$11.25
Geestemunde . . .	19/6			
Gibraltar . . .	26/6 W.	*68/- W. to 108/-	*95/- W. to 165/-	*155/- to 165/-
Genoa . . .	24/- W.	*130/- W.		*175/- to 200/-
Havana . . .	\$6.10 N.R.	*\$8.50 N.R. to \$8.75	*\$8.75	
Hamburg . . .	16/- Northumbrian			
Halifax, N.S. . . .	\$4.50 Dom.	*8.25	\$8.25	*\$12.50 to \$13.50
Havre . . .	24/- W., 22/- N.C.	*65/- Thro'	*65/- Thro'	
Hong Kong . . .	18/- Lump, 20/9 Jap.	24/6	46/-	Yen 42.75
Karachi . . .	22/- J.N. or Des.	24/-	26/6	Bengal : Rs. 25.8 Destunghur : Rs. 26
Karatsu . . .	13/3	14/-, 13/-	21/-, 19/9	Yen 27 and Yen 26
Kobe . . .	16/3	17/3, 16/3	26/6, 25/3	Yen 33.50 and Yen 32.50

Ports.	1913.	1916.	1917.	1920.
Keeling . . .	14/6 Formosa	14/6	22/6	Yen 26.00
Kutchinotsu . . .	15/- Large, 13/6 (U.)	14/9, 13/6	23/6, 21/9	
Louisberg . . .	\$3.50	\$4.00	*\$6.00	*\$9.00 to \$9.25
Las Palmas . . .	32/- W.	*67/8 W. to 106/-	*86/- W. or other to 150/-	*138/- to 165/-
La Plata . . .	43/- W., 6d.	*77/6 W. to 125/-	*107/6 W. or other to 187/6	*155/- to 160/-
Lyttelton . . .	22/-	24/-	25/6	39/9
Lisbon . . .	22/9	*90/-	*90/-	*160/- to 170/-
Mobile City . . .	\$3.15	\$2.90	\$5.00	\$5.85
Marseilles . . .	32/-, 1/-	*88/- W. to 127/-	*106/- Welsh	*185/-
Messina . . .	27/- W.			
Malta . . .	27/- W.	*76/- W. to 140/-	*110/- W. to 240/-	*170/- to 187/6
Mauritius . . .	47/- W.	*58/- S. Afric. 70/-	*70/- S. Afric. to 80/-	*100/- S. Afric.
Madeira . . .	31/6 W.	*77/- W. to 105/6	*85/6 W. or other to 155/-	*142/6
Monte Video . . .	45/- W., 6d.	*77/6 W. to 125/-	*107/6 W. or Amer. to 187/6	*155/- to 160/-
Murovau . . .	18/6	14/6, 13/6	22/6, 21/3	Yen 27.00 26
Moji . . .	12/6 Jap.	14/-, 13/-	21/-, 20/-	Yen 27.00 & 26
Manila . . .	26/- A.	30/- Jap.	51/6 Jap.	
Melbourne . . .	19/6	23/3		
Miike . . .	14/6	14/-, 12/9	22/-, 20/9	
New York . . .	\$3.12 Cl.	\$3.35	\$5.00	*\$7.00 f.a.s. to \$8.00
Newport News . . .	\$3.30 N.R.	\$3.10	\$5.00	Govt. price
Norfolk, Va. . .	\$3.30	\$3.10	\$5.00	
New Orleans . . .	\$3.75	\$3.65	\$5.50	*\$7.90 to \$8.20
Nordenham . . .	19/-			
Naples . . .	27/- W.			*160/- to 190/-
Newcastle, N.S.W. . .	9/- Waratah	9/9	12/9	15/9
Nagasaki . . .	14/3	14/-, 12/9	22/-, 20/9	Yen 29.50 and Yen 28.50
Newchang . . .	16/3	15/3, 11/3	24/-, 20/-	
Natal . . .	16/6	18/- Large, 16/6 Nuts	30/-, 28/6	1st qual., 42/6 ; 2nd qual., 40/6 1/6 less Nuts
North Sydney, C.B. . .	\$3.50 Syd. Mine	\$4.00		*\$9.00 to \$9.25
Oran . . .	28/- N.C.	*75/- W. to 112/6	*110/- W. to 200/-	*155/- to 175/-
Otavu . . .	15/6	14/6, 13/6	22/6, 21/3	Yen 27.00 and Yen 26.00
Plymouth . . .	25/6			
Philadelphia . . .	\$3.12 Cl.	\$3.35	\$5.00	*\$7.00 trimmed to 8.00
Persacola . . .	\$3.15	\$2.90 F.o.b.	\$5.00	*\$5.85
Portland, U.K. . .	22/-			*147/6
Port Said . . .	35/- W., 6d.	*96/- W. to 148/6	*120/- W. to 248/6	*172/6 to 186/6
Perim . . .	Current W.	*110/- W. to 150/-	*110/- S.A. to 155/-	*125/- to 135/-
Penang . . .	24/9			
Pernambuco . . .	14/- P.L.	*85/- W. to 125/-	*107/6 W. or Amer. 187/6	*180/- to 200/-
Pulo Laut . . .	14/-	15/1	Fl. 12.20	Fl. 35.56
Rangoon . . .	23/6 Heilgen. Stand.	24/8	*41/6	

Ports.	1913.	1916.	1917.	1920.
Rotterdam . . .	16/6 West.			*Gelders 85/-
Rosario . . .	47/- W., 6d.	*80/- W. to 127/6	*110/- W. or Amer. to 190/-	*157/6 to 162/6
Rio Janeiro . . .	46/- W., 6d.	*77/6 W. to 125/- W.	*107/6 W. or Amer. to 187/6	*167/6 to 175/6
Syra . . .	26/- W.			
Sydney, C.B.	\$3.50	\$4.00	*\$6.00	*\$9.00 to \$9.25
St. John, N.B.	\$4.75	*\$9.00	*\$9.00	
Sewalls Pt., Va.	\$3.30	\$5.10	\$5.00	Govt. price
Savannah . . .	\$5.00	\$4.75	\$5.40	*\$8.50
Stettin . . .	19/6 N.C.			
Singapore . . .	42/- W., 28/- A.	33/- Japanese	*60/6 Indian or Japan to 67/6 17/6	*86/- Indian to 98/6
Sebattik, W.F.	14/6	14/3		43/6
St. Vincent, C.V.	36/- W., 6d.	*80/- W. to 108/6	*88/6 W. or other to 155/-	*135/- to 167/6
St. Michael's . . .	34/- W., 6d.	*90/- W. to 107/6	*95/- W. to 140/-	*165/- to 170/-
St. Thomas, W.I.	25/- N.R.	*40/- N.R. to 50/6	*64/- to 76/6	*119/-
St. Lucia . . .	26/-	*41/- to 51/6	*85/- to 77/6	*120/-
Santos . . .	49/6 W., 6d.	*80/- W. to 127/6	*110/- W. or Amer. to 190/-	*170/-
Shanghai . . .	20/9 No. 1 Jap.	20/3	34/-	86/- Kaiping Lump
Ship Island . . .	\$4.40			
Teneriffe . . .	32/- W.	*77/6 W. to 106/-	*86/- W. or other coal 150/-	*165/-
Tongku . . .	12/9	12/3, 8/3	18/-, 14/-	
Taku Bar . . .	14/9	14/3, 10/3	20/-, 16/-	*68/- and 51/-
Trinidad . . .	25/-	*40/- N.R. to 50/6	*64/- to 76/6	*119/-
Vera Cruz . . .	\$6.35			
Vigo . . .	23/9 W.			
Wilmington . . .	\$4.95	\$5.25		
Wakamatsu . . .	12/3	13/6, 12/3	21/6, 20/3	
Westport, N.Z.	14/6	14/6	14/6	22/6
Wellington . . .	21/6	23/-	24/6	38/6
Yokohama . . .	17/6	18/6	30/6	Yen 38.50 and Yen 37.50
Yokosuka . . .	20/6			
Zaandam . . .	17/6 West.			

Out of 126 ports some 106 are quoted.



Map showing the Canal Routes recommended by the Royal Commission for acquisition and improvement, and the various standards of suggested improvement.

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