

## COAL MINES.

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## Introductory.\*

The tables on pages 26 to 28 are based on returns received from firms in Great Britain whose business in 1924 consisted wholly or mainly in coal mining. The number of such separate returns was 1,461. About 20 firms to which schedules were sent did not furnish returns, but these firms only carried on production on a small scale or intermittently. On the basis of the information available it is estimated that they did not employ more than 300 persons in all and that their total net output probably did not exceed £50,000. The only return received for Northern Ireland related to a colliery in course of development.

*Summary of results.*—The following table shows the main results of the Censuses of 1924, 1912 and 1907, comparisons between the figures for the three years being subject to the qualifications mentioned in the next paragraph :—

Particulars.	Unit.	1924.	1912.	1907.
Value of products (Gross output)	£'000	251,529	122,835	122,637
Cost of materials used .. .. .	„	41,642	18,282	16,547
Net output .. .. .	„	209,887	104,553	106,090
Average number of persons employed .. .. .	No.	1,198,468	979,756	838,586
Net output per person employed ..	£	175	107	127
Mechanical power available :—				
Prime movers (including locomotives) .. .. .	H.P.	3,150,540	2,520,744	2,293,978
Electric motors driven by purchased electricity .. .. .	„	463,073	115,682	(not recorded)

\* See also the Notes on pp. vii to xv.



*Qualifications affecting comparisons.*—In considering the above table and the other tables in this report which show figures for different censal years, it should be borne in mind that :—

(1) The comparability of figures relating to value or cost is affected by the changes which have taken place in the general purchasing power of money.

(2) The Censuses of 1907 and 1912 covered Great Britain and the whole of Ireland, while that of 1924 applied only to Great Britain and Northern Ireland. According to the Census of Production taken by the Government of the Irish Free State in respect of the year 1926, the total value of the coal raised in that year was returned as only £83,000; further, in 1907, the gross output of the coal mines in the whole of Ireland was valued at only £48,000 and the number of persons employed was only 801. It is thus clear that general comparisons between the results of the different Censuses are not measurably affected by the differences in the areas covered by the enquiries.

(3) The Censuses of 1907 and 1924 extended to all firms, however small, but in 1912 firms employing not more than five persons (excluding the proprietors) were merely required to state the average number of persons employed by them in the year. According to the information so furnished, the average number of persons employed in the establishments thus excluded was 940, or 0.1 per cent. of the number employed by the remaining firms, as shown in the above table.

### Production.

The detailed information relating to production in 1924 is summarised in Table II on page 26.

*Coal.*—The following statement shows, for the three censal years, the quantity and value of the different kinds of coal raised :—

Kind of coal.	1924.		1912.		1907.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Th. tons.	£'000	Th. tons.	£'000	Th. tons.	£'000
Saleable coal :—						
Anthracite .. ..	5,569	7,555	5,279	2,950	3,909	2,297
Steam .. ..	140,438	126,020	118,095	55,719	128,204	58,704
Gas .. ..	30,523	30,648	22,916	10,044	29,039	12,779
Household .. ..	50,100	57,199	38,233	19,007	53,060	25,705
Other sorts .. ..	38,781	28,884	29,673	11,675		
Not specified (except anthracite) .. ..	125	108	46,647	20,984	52,348	20,069
TOTAL .. ..	265,536	250,414	260,843	120,379	266,560	119,554

About 1,000 tons of "Other sorts" of coal, valued at £1,000, in 1924 and 2,000 tons of steam coal, valued at about £1,000, in 1907, were returned on schedules for other trades and are included in the figures shown above. In addition, the following quantities of coal were returned by collieries, including one in Northern Ireland, in process of development in 1924 :—

	Tons.	£
Anthracite .. ..	6,000	4,000
Steam .. ..	29,000	27,000
Household .. ..	16,000	17,000
Total .. ..	51,000	48,000

The total quantity of coal returned as mined in 1924 was, therefore, 265,587,000 tons, valued at £250,462,000. In arriving at the value, firms were instructed to state the actual amount obtained, as at pit, less discounts and commissions; coal used for colliery purposes was valued at the average market price of similar qualities, and coal supplied to miners and officials at the actual prices charged to them. All the coal included in the foregoing table was raised from pits and workings in Great Britain. The output in the calendar year 1924 was returned to the Mines Department as 267,118,000 tons, valued at £251,665,000. In 1907 the output returned to the Home Office amounted to 267,831,000 tons and, in 1912, to 260,416,000 tons, the lower figure for 1912 resulting from the six weeks' stoppage of production in that year.

The following statement compares the average pit-head prices for the different kinds of coal, as returned to the Census :—

Saleable coal.	1924.	1912.	1907.
	Shillings per ton.		
Anthracite .. ..	27.13	11.18	11.75
Steam .. ..	17.95	9.44	9.16
Gas .. ..	20.08	8.77	8.80
Household .. ..	22.83	9.94	9.69
Other sorts .. ..	14.90	7.87	7.67
Unclassified .. ..	17.28	9.00	
ALL KINDS .. ..	18.86	9.23	8.97

*Exports.*—The quantities of coal exported in the three censal years were :—1907, 63,601,000 tons; 1912, 64,444,000 tons; 1924, 61,651,000 tons. These quantities represent respectively 23.9, 24.7, and 23.2 per cent. of the production in the several years. The



real comparative decrease in exports in 1924 is, however, much greater, for in 1907 and 1912 shipments of coal to that part of Ireland which now constitutes the Irish Free State were treated as domestic trade, whereas in 1924 they were treated as exports. Such exports in 1924 totalled 2,472,000 tons (of which 1,455,000 tons were household coal and 750,000 tons, steam coal), and if that quantity is deducted from the total exports a decrease of about 7 per cent. from the comparable exports in 1907 is shown. The following statement shows the production and exports of the different kinds of coal in 1924:—

Kind of coal.	1924.		
	Production.	Exports.	Exports as percentage of production.
	Th. tons.	Th. tons.	Per cent.
Anthracite.. .. .	5,575	3,084	55·3
Steam .. .. .	140,467	43,804	31·2
Gas .. .. .	30,523	8,435	27·6
Household .. .. .	50,116	1,865	3·7
Other sorts and unclassified .. .. .	38,906	4,463	11·5
<b>TOTAL .. .. .</b>	<b>265,587</b>	<b>61,651</b>	<b>23·2</b>

The figures shown in the table for exports do not include the coal needed for the production of exported coke or of exported manufactured fuel. Comparison between the production and exports of coal similarly described is affected by the presence of *unclassified* coal in the production and to the uncertainty as to whether *other sorts* was similarly interpreted by coal exporters and by coal producers. Shipments of coal for the use of vessels engaged in the foreign trade and for fishing vessels were 18,619,000 tons in 1907, 18,291,000 tons in 1912, and 17,689,000 tons in 1924, a decrease of 5 per cent. in the seventeen years. Deducting these bunkers and exports, adjusting for trade with the Irish Free State, and assuming that production of coal in the Irish Free State was about the same in 1924 as it was in 1926 (78,000 tons), the total quantity of coal available for use in Great Britain and all Ireland (including coal for Admiralty purposes, coastwise bunkers at United Kingdom ports and bunkers shipped on all vessels at Irish Free State ports) increased from 184,340,000 tons in 1907 to about 188,800,000 tons in 1924.

*Other products.*—In addition to coal the following output was produced at coal mines in 1924. These products, being of kinds mainly produced in other trades, are dealt with in the reports on those trades.

Kind of product.	Quantity.	Value.
	Th. tons.	£'000
Iron-stone .. .. .	453	346
Iron pyrites .. .. .	6	5
Fireclay .. .. .	1,383	484
Other clay .. .. .	321	33
Limestone .. .. .	3	2
Sandstone and ganister .. .. .	56	36
Other mining products .. .. .	46	19
	Thous.	
Bricks sold .. .. .	1,331	4
Water sold .. .. .	..	10
	Mill. B.T. units	
Electricity sold .. .. .	54·3	174
Other products .. .. .	..	3
<b>TOTAL VALUE .. .. .</b>	<b>..</b>	<b>1,116</b>

*Cost of materials.*—The cost of materials used by firms that made their returns on the Coal Mines schedule was returned as £41,642,000\* in 1924, £18,282,000 in 1912 and £16,547,000 in 1907.

These figures include the value of coal raised at the mines and used for colliery purposes.

*Net output.*—The net output in 1924 of the firms that made their returns on the Coal Mines schedule (whose gross output was valued at £251,529,000) was £209,887,000, that sum representing the total amount by which the value, at pit-head, of the aggregate output exceeded the cost of the explosives, timber and other materials purchased, including the value of the coal used for colliery purposes.

The net output per head of persons employed in the censal year 1924 was £175, as compared with £107 in 1912 and £127 in 1907.

#### Wages in 1924.

Under the Census of Production Act, 1906, the powers of the Board of Trade to require information do not extend to particulars of the amount of wages paid, and, consequently, no information on this head was secured in connexion with the Census of 1924. In the statement of costs of production given in the annual report of the Mines Department for 1924, however, the total amount of wages paid in that year by firms that employed an average of 1,094,959 wage-earners, or 93 per cent. of the total number of wage-earners employed by the industry as a whole, was £151,356,000, showing an average of £138 per head. The net output of all firms in the industry amounted to £179 per wage-earner recorded for the week ended 18th October, of which the average wage figure given above would represent 77 per cent. The aggregate of the wages paid in the censal year by all firms may be estimated as being about £165,000,000.

\* In addition, £88,000 was recorded as the cost of the materials used at collieries in course of development during 1924.



### Employment.

The detailed information relating to employment in 1924 is summarised in Table III on page 27. The following table sets out certain particulars for that year together with those relating to the two previous censal years. The figures for 1924 are the numbers of persons employed in the week ended 18th October, 1924,\* and those for 1912 and 1907 are the average numbers at work on the last Wednesday in January, April, July and October.

Average number.	Males.		Females.		Males and females.	
	Under 16.	All ages.	Under 16.	All ages.	Under 16.	All ages.
<b>1924.</b>						
Operatives .. ..	71,966	1,171,266	476	4,987	72,442	1,176,253
Administrative, etc. ..	705	20,890	40	1,325	745	22,215
TOTAL .. ..	72,671	1,192,156	516	6,312	73,187	1,198,468
<b>1912.</b>						
Wage earners .. ..	67,244	957,726	818	6,223	68,062	963,949
Salaried .. ..	735	15,642	5	165	740	15,807
TOTAL .. ..	67,979	973,368	823	6,388	68,802	979,756
<b>1907.</b>						
Wage earners .. ..	59,238	819,495	642	5,327	59,880	824,822
Salaried .. ..	531	13,647	3	117	534	13,764
TOTAL .. ..	59,769	833,142	645	5,444	60,414	838,586

The Census of Production enquiry with reference to Coal Mines did not include, as in the case of other trades, particulars of the variations of employment from month to month in the censal year. The average figures for the separate quarters of the year obtained by the Mines Department show excesses of 0.7 per cent., 1.4 per cent. and 0.2 per cent., respectively, over the year's average in the first three quarters of the year, and a deficiency of 2.3 per cent. in the final quarter. The average for the year differed little from the number recorded for the September quarter and corresponded closely with the figure returned to the Census of Production in respect of the week ended 18th October.

### Mechanical Power.

The detailed information relating to mechanical power in 1924 is summarised in Table IV on page 28. The following table sets out the particulars for the three censal years relating to the capacity and kinds of *prime movers* (including locomotives) and the capacity of *electric generators* installed.

\* In addition, 3,162 persons, of which 3,071 were operatives, were recorded as employed in October, 1924, at collieries in course of development.

Power equipment.	1924.			1912.	1907.
	Ordinarily in use.	In reserve or idle.	Total.	Total.	Total.
<b>PRIME MOVERS :—</b>	H.P.	H.P.	H.P.	H.P.	H.P.
Reciprocating steam engines .. ..	2,034,429	245,742	2,280,171	2,331,529	2,242,021
Steam turbines .. ..	457,237	111,226	568,463	159,670	
Gas engines .. ..	11,688	3,989	15,677	21,420	7,349
Petrol and light oil engines	2,510	383	2,893	1,125	
Heavy oil engines .. ..	157	73	230	—	468
Water power .. ..	37	—	37	1,064	
Locomotives .. ..	211,448	42,977	254,425	5,936	44,140
Other .. ..	23,833	4,811	28,644	—	
TOTAL .. ..	2,741,339	409,201	3,150,540	2,520,744	2,293,978
<b>ELECTRIC GENERATORS :—</b>	Kw.	Kw.	Kw.	Kw.	Kw.
Driven by—					
Reciprocating steam engines .. ..	151,702	90,313	242,015	208,180	20,216
Steam turbines .. ..	300,254	93,070	393,324	112,324	
Gas engines .. ..	5,230	2,618	7,848	—	*
Petrol and light oil engines .. ..	30	233	263	—	
Heavy oil engines .. ..	8	30	38	—	
Water power .. ..	—	—	—	—	
Other prime movers .. ..	—	—	—	—	
TOTAL .. ..	457,224	186,264	643,488	340,720	*

\* Engines with a capacity of 150,718 horse-power were recorded in 1907 as used for driving dynamos for the production of electric power and light, and the capacity of the dynamos was estimated to be 101,192 kilowatts.

The capacity of *electric motors* recorded in 1924 and in 1912 was as shown below :—

Electric motors.	1924.			1912.
	Ordinarily in use.	In reserve or idle.	Total.	Total.
Driven by—	H.P.	H.P.	H.P.	H.P.
Electricity generated in own works	906,454	149,150	1,055,604	376,322
Purchased electricity .. ..	407,526	55,547	463,073	115,682

Corresponding information was not required for 1907 but electric motors, driven by purchased electricity, of 11,936 horse-power capacity were reported. In addition to the mechanical power shown above, prime movers of 8,388 horse-power, electric generators of 4,770 kilowatt capacity, and electric-motors, driven by purchased electricity, of 12,215 horse-power, were recorded at collieries in course of development in 1924.



## TABLES.

## I.—Summary of results.

Note.—No production, other than at a colliery in course of development, was recorded for Northern Ireland. Particulars relating to collieries in course of development are not included in these tables.

Particulars.	Unit.	England and Wales.	Scotland.	Great Britain.
Value of products (Gross output) ..	£'000	220,667	30,862	251,529
Cost of materials used .. ..	"	36,193	5,449	41,642
Net output .. .. .	"	184,474	25,413	209,887
Average number of persons employed .. .. .	No.	1,060,608	137,860	1,198,468
Net output per person employed ..	£	174	184	175
Mechanical power available :—				
Prime movers (including locomotives) .. .. .	H.P.	2,764,357	386,183	3,150,540
Electric motors driven by purchased electricity .. ..	"	405,098	57,975	463,073

## II.—Production.

Coal and other products raised.	England and Wales.		Scotland.		Great Britain.	
	Quantity.	Net selling value at pit.	Quantity.	Net selling value at pit.	Quantity.	Net selling value at pit.
Saleable coal :—	Th. tons.	£'000	Th. tons.	£'000	Th. tons.	£'000
Anthracite .. .. .	5,089	6,894	480	661	5,569	7,555
Steam .. .. .	120,438	109,656	20,000	16,364	140,438	126,020
Gas .. .. .	29,101	29,239	1,422	1,409	30,523	30,648
Household .. .. .	43,069	49,893	7,031	7,306	50,100	57,199
Other sorts .. .. .	32,283	23,924	6,497	4,959	38,780	28,883
Not separately distinguished (excepting anthracite) .. .. .	125	108	—	—	125	108
<b>TOTAL—COAL ..</b>	<b>230,105</b>	<b>219,714</b>	<b>35,430</b>	<b>30,699</b>	<b>265,535</b>	<b>250,413</b>
Iron ore .. .. .	397	317	56	29	453	346
Iron pyrites .. .. .	6	5	—	—	6	5
Fireclay .. .. .	1,032	372	351	112	1,383	484
Clay, other than fireclay .. .. .	149	24	172	9	321	33
Limestone .. .. .	—	—	3	2	3	2
Sandstone and ganister .. .. .	39	27	17	9	56	36
Other mining products .. .. .	45	19	1	*	46	19
Bricks sold .. .. .	Thous. 1,331	4	—	—	Thous. 1,331	4
Electricity sold .. .. .	Th. units 53,768	172	Th. units 540	2	Th. units 54,308	174
Water sold .. .. .	..	10	—	—	..	10
Other products .. .. .	..	3	—	—	..	3
<b>TOTAL VALUE OF PRODUCTS (GROSS OUTPUT) ..</b>	<b>..</b>	<b>220,667</b>	<b>..</b>	<b>30,862</b>	<b>..</b>	<b>251,529</b>

\* Less than £500.

## III.—Employment.

## NUMBERS EMPLOYED IN WEEK ENDED 18TH OCTOBER, 1924.

Kind of staff.	Males.		Females.		Males and females.	
	Under 16.	All ages.	Under 16.	All ages.	Under 16.	All ages.
<i>England and Wales :—</i>						
Operatives .. .. .	65,129	1,038,297	120	2,607	65,249	1,040,904
Administrative, etc.*	626	18,695	27	1,009	653	19,704
<b>TOTAL .. .. .</b>	<b>65,755</b>	<b>1,056,992</b>	<b>147</b>	<b>3,616</b>	<b>65,902</b>	<b>1,060,608</b>
<i>Scotland :—</i>						
Operatives .. .. .	6,837	132,969	356	2,380	7,193	135,349
Administrative, etc.*	79	2,195	13	316	92	2,511
<b>TOTAL .. .. .</b>	<b>6,916</b>	<b>135,164</b>	<b>369</b>	<b>2,696</b>	<b>7,285</b>	<b>137,860</b>
<i>Great Britain :—</i>						
Operatives .. .. .	71,966	1,171,266	476	4,987	72,442	1,176,253
Administrative, etc.*	705	20,890	40	1,325	745	22,215
<b>TOTAL .. .. .</b>	<b>72,671</b>	<b>1,192,156</b>	<b>516</b>	<b>6,312</b>	<b>73,187</b>	<b>1,198,468</b>

\* Administrative, technical and clerical staff.



## IV.—Mechanical Power.

PARTICULARS OF PRIME MOVERS, ELECTRIC GENERATORS AND  
ELECTRIC MOTORS.

Power equipment.	England and Wales.		Scotland.		Great Britain.	
	Ordinarily in use.	In reserve or idle.	Ordinarily in use.	In reserve or idle.	Ordinarily in use.	In reserve or idle.
PRIME MOVERS :—	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
Reciprocating steam engines .. ..	1,787,554	211,392	246,875	34,350	2,034,429	245,742
Steam turbines ..	405,045	96,063	52,192	15,163	457,237	111,226
Gas engines ..	11,658	3,989	30	—	11,688	3,989
Petrol and light oil engines .. ..	2,360	366	150	17	2,510	383
Heavy oil engines ..	157	73	—	—	157	73
Water power ..	37	—	—	—	37	—
Locomotives ..	182,169	39,802	29,279	3,175	211,448	42,977
Other .. ..	19,256	4,436	4,577	375	23,833	4,811
TOTAL .. ..	2,408,236	356,121	333,103	53,080	2,741,339	409,201
TOTAL OF PRIME MOVERS INSTALLED .. ..	2,764,357		386,183		3,150,540	
ELECTRIC GENERATORS :	Kw.	Kw.	Kw.	Kw.	Kw.	Kw.
Driven by—						
Reciprocating steam engines ..	124,407	76,251	27,295	14,062	151,702	90,313
Steam turbines ..	264,386	81,545	35,868	11,525	300,254	93,070
Gas engines ..	5,230	2,618	—	—	5,230	2,618
Petrol and light oil engines ..	30	233	—	—	30	233
Heavy oil engines	8	30	—	—	8	30
TOTAL .. ..	394,061	160,677	63,163	25,587	457,224	186,264
TOTAL OF ELECTRIC GENERATORS IN- STALLED .. ..	554,738		88,750		643,488	
ELECTRIC MOTORS :—	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
Driven by—						
Electricity gene- rated in own works .. ..	716,383	127,322	190,071	21,828	906,454	149,150
Purchased electri- city .. ..	357,297	47,801	50,229	7,746	407,526	55,547