

IV.—Mechanical Power.

PARTICULARS OF PRIME MOVERS, ELECTRIC GENERATORS AND ELECTRIC MOTORS.

Power equipment.	England and Wales and Northern Ireland.*		Scotland.		United Kingdom.	
	Ordinarily in use.	In reserve or idle.	Ordinarily in use.	In reserve or idle.	Ordinarily in use.	In reserve or idle.
	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
PRIME MOVERS :—						
Reciprocating steam engines	3,667	654	672	—	4,339	654
Steam turbines	45	—	—	—	45	—
Gas engines	936	418	19	—	955	418
Petrol and light oil engines	112	—	25	—	137	—
Heavy oil engines	15	—	—	—	15	—
Water power	120	—	135	—	255	—
TOTAL	4,895	1,072	851	—	5,746	1,072
TOTAL OF PRIME MOVERS INSTALLED	5,967		851		6,818	
ELECTRIC GENERATORS :—						
Driven by—	Kw.	Kw.	Kw.	Kw.	Kw.	Kw.
Reciprocating steam engines	292	113	—	—	292	113
Gas engines	91	—	—	—	91	—
TOTAL	383	113	—	—	383	113
TOTAL OF ELECTRIC GENERATORS INSTALLED	496		—		496	
ELECTRIC MOTORS :—						
Driven by—	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
Electricity generated in own works ..	576	53	—	—	576	53
Purchased electricity	7,031	711	505	133	7,536	844

* See footnote to Table I.

THE ICE TRADE.

Contents.	Page.
INTRODUCTORY	139
Summary of results	139
Qualifications affecting comparisons	139
PRODUCTION	140
Amount of output	140
Cost of materials	140
Net output	141
WAGES IN 1924	141
EMPLOYMENT	141
MECHANICAL POWER	142
TABLES	143

Introductory.*

The Tables on pages 143 to 145 are based on Returns received from firms in Great Britain and Northern Ireland, whose business in 1924 consisted wholly or mainly in the manufacture of ice. The number of such separate Returns was 183. Seven firms to which schedules were sent did not furnish Returns, but these firms had very small establishments, and it is estimated that they did not employ more than about 25 persons in all; their net output probably did not exceed £6,000.

Summary of results.—The following table shows the main results of the Censuses of 1924 and 1907, comparisons between the figures for the two years being subject to the qualifications mentioned in the next paragraph. Particulars relating to the Census of 1912 have been omitted for the reasons stated in that paragraph.

Particulars.	Unit.	1924.	1907.
Value of goods made (Gross output)	£'000	1,657	390
Cost of materials used	"	428	126
Net output	"	1,229	264
Average number of persons employed	No.	2,816	1,245
Net output per person employed	£	436	212
Mechanical power available :—			
Prime movers	H.P.	20,560	14,876
Electric motors driven by purchased electricity	"	19,065	(not recorded)

Qualifications affecting comparisons.—In considering the above table and other sections of this Report, which give figures for the two censal years, the following qualifications should be borne in mind :—

(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 Census of 1907 covered the whole of Great Britain and Ireland, but that of 1924 applied only to Great Britain and

* See also the Notes on pages vii-xiv.

Northern Ireland. The exclusion of Southern Ireland in 1924 does not seriously affect the comparability of the figures, since no separate Report on the output of that area was found necessary in connexion with the Census of Production taken by the Government of the Irish Free State in respect of the year 1926.

(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 number of persons employed in the establishments thus excluded was 205 or 15·8 per cent. of the number employed by the remaining firms. The proportion of output excluded in this way is sufficiently large to invalidate comparisons, and, consequently, the relative information obtained for 1912 is not dealt with in this Report.

Production.

The detailed information as to the output of the Ice Trade in 1924 will be found in Table II on page 143.

In addition to the output dealt with in this Report, ice valued, on a cost basis, at £3,000, was made by Local Authorities in 1924.* The corresponding figure for 1907 was £5,000.

Amount of output.—Manufacturers of ice were instructed to include in their statements of output only ice made for sale and not ice made for their own use, e.g., for cold storage or fish preserving. Ice re-sold in the same condition in which it was purchased or only cut into blocks was also to be excluded.

The reported output of ice in 1924 was 1,286,000 tons valued at £1,649,000, of which 12,000 tons, valued at £16,000, were returned on schedules for other trades.† The total quantity made in 1907 was 613,000 tons, valued at £393,000.

In addition to ice, an output of ice-cream, valued at £22,000, and of other products valued at £2,000, was returned. The main output of ice-cream, however, was recorded by firms that made their Returns on schedules for the Bread and Biscuit Trades (see page 50).

The output shown above is free from duplication.

Exports of ice are not separately recorded. Retained imports in 1924 were 10,400 tons, or less than 1 per cent. of the quantity available for consumption in the United Kingdom.

Cost of materials.—The cost of materials used by firms making their Returns on schedules for the Ice Trade was £428,000 in 1924, and £126,000 in 1907.

* Such production falls within the scope of the Report on Public Utility Services, which forms part of a separate volume.

† Including the Chemical Trades, the Report on which forms part of a separate volume.

Net output.—The net output in 1924 of the firms making their Returns on schedules for the Ice Trade (whose gross output was valued at £1,657,000) was £1,229,000, that sum representing the total amount by which the value of the aggregate output exceeded the cost of the materials used.

The net output per head of persons employed in the censal year 1924 was £436, as compared with £212 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. As a result, however, of the voluntary enquiry undertaken by the Ministry of Labour into wages and hours in the United Kingdom in 1924, information was obtained as to the total wage-bill of a group of firms in the Ice Trade which made Returns both to the Ministry of Labour and to the Census of Production office. According to the Census records this group of firms employed, in the week ended 18th October, 1924, 1,228 operatives, or 53 per cent. of the total of 2,322 operatives for the trade as a whole, and their net output totalled £620,000, or 50 per cent. of the aggregate net output of £1,229,000 for the trade as a whole. The total wage-bill of these firms, as returned to the Ministry of Labour, was £185,000, representing about 30 per cent. of their aggregate net output.

Employment.

The detailed information relating to employment in 1924 is summarised in Table III on page 144. The following table sets out certain particulars for that year together with those obtained at the 1907 Census. For the purpose of this comparison the average numbers of operatives of each sex returned for 1924 have been divided between the two age-groups in the proportions shown by the data relating to the week ended 18th October:—

Average number.	Males.		Females.		Males and females.	
	Under 18.	All ages.	Under 18.	All ages.	Under 18.	All ages.
1924.						
Operatives	55	2,358	—	6	55	2,364
Administrative, etc. ..	17	376	8	76	25	452
TOTAL	72	2,734	8	82	80	2,816
1907.						
Wage earners	17	1,082	—	3	17	1,085
Salariéd	9	147	3	13	12	160
TOTAL	26	1,229	3	16	29	1,245

The numbers of operatives recorded month by month in 1924 ranged from 333 above the average, in July, to 221 below the average,

in January (see Table IIIB, p. 144). The numbers, at their maximum in July and August, rose steadily during the first half of the year, and fell during the second half.

Mechanical Power.

The detailed information relating to mechanical power in 1924 is summarised in Table IV on page 145. The following table sets out the particulars for 1924 and 1907 relating to the capacity and kinds of *prime movers*, and the capacity of *electric generators* installed.

The particulars are necessarily inclusive of the horse-power of engines and motors required by certain of the ice manufacturers for their cold storage purposes, and are therefore in excess of the power required for the manufacture of ice for sale. It is not possible from the particulars available to determine what proportion of the horse-power returned was required for the production of ice for sale in either year.

Power equipment.	1924.			1907.
	Ordinarily in use.	In reserve or idle.	Total.	Total.
PRIME MOVERS :—	H.P.	H.P.	H.P.	H.P.
Reciprocating steam engines ..	9,045	1,143	10,188	11,859
Steam turbines	84	50	134	130
Gas engines	7,831	1,360	9,191	} 2,747
Petrol and light oil engines ..	165	8	173	
Heavy oil engines	798	—	798	} 40
Water-power	76	—	76	
Other	—	—	—	100
TOTAL	17,999	2,561	20,560	14,876
ELECTRIC GENERATORS :—	Kw.	Kw.	Kw.	Kw.
Driven by—				
Reciprocating steam engines ..	1,409	109	1,518	} 410
Gas engines	652	95	747	
Petrol and light oil engines ..	—	—	—	} 122
Heavy oil engines	44	—	44	
Water-power	3	—	3	
Other prime movers (not steam turbines)	—	—	—	
TOTAL	2,108	204	2,312	532

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

Electric motors.	1924.		
	Ordinarily in use.	In reserve or idle.	Total.
Driven by—	H.P.	H.P.	H.P.
Electricity generated in own works	1,546	102	1,648
Purchased electricity	16,605	2,460	19,065

Corresponding information was not required for 1907. The total number of Board of Trade units of electricity purchased for power and lighting purposes in that year was returned as 88,000.

TABLES.

I.—Summary of results.

Particulars.	Unit.	England and Wales and N. Ireland.*	Scotland.	United Kingdom.
Value of goods made (Gross output) ..	£'000	1,454	203	1,657
Cost of materials used	"	372	56	428
Net output	"	1,082	147	1,229
Average number of persons employed ..	No.	2,514	302	2,816
Net output per person employed	£	430	487	436
Mechanical power available :—				
Prime movers	H.P.	19,484	1,076	20,560
Electric motors driven by purchased electricity	"	15,483	3,582	19,065

* In order to avoid the possible disclosure of information relating to individual firms, the particulars for Northern Ireland have been combined with those for England and Wales.

II—Production..

Output sold or added to stock.	Unit.	England and Wales and N. Ireland.*	Scotland.	United Kingdom.
Ice made for sale	Th. tons.	1,076	198	1,274
Ice cream	£'000	1,430	203	1,633
Other products	"	22	—	22
	"	2	—	2
TOTAL VALUE OF GOODS MADE (GROSS OUTPUT)	£'000	1,454	203	1,657

* See footnote to Table I.

III.—Employment.

A.—NUMBERS EMPLOYED IN WEEK ENDED 18TH OCTOBER, 1924.

Kind of staff.	Males.		Females.		Males and females.	
	Under 18.	All ages.	Under 18.	All ages.	Under 18.	All ages.
<i>England and Wales and Northern Ireland—†</i>						
Operatives	53	2,066	—	2	53	2,068
Administrative, etc.* ..	17	340	8	61	25	401
TOTAL	70	2,406	8	63	78	2,469
<i>Scotland :—</i>						
Operatives	1	251	—	3	1	254
Administrative, etc.* ..	—	36	—	15	—	51
TOTAL	1	287	—	18	1	305
<i>United Kingdom :—</i>						
Operatives	54	2,317	—	5	54	2,322
Administrative, etc.* ..	17	376	8	76	25	452
TOTAL	71	2,693	8	81	79	2,774

* Administrative, technical and clerical staff. † See footnote to Table I.

B.—OPERATIVES EMPLOYED IN ONE WEEK IN EACH MONTH OF 1924.

England and Wales and Northern Ireland. (Annual average : Males, 2,110 ; Females, 3 ; Total, 2,113.)*

Week ended.	Males.	Females.	Total.	Week ended.	Males.	Females.	Total.
Jan. 12th ..	1,923	1	1,924	July 19th ..	2,406	7	2,413
Feb. 16th ..	1,946	1	1,947	Aug. 16th ..	2,409	7	2,416
March 15th ..	1,925	1	1,926	Sept. 13th ..	2,254	5	2,259
April 12th ..	2,006	1	2,007	Oct. 18th ..	2,066	2	2,068
May 17th ..	2,144	5	2,149	Nov. 15th ..	1,984	1	1,985
June 21st ..	2,329	8	2,337	Dec. 13th ..	1,926	1	1,927

Scotland. (Annual average : Males, 248 ; Females, 3 ; Total, 251.)

Jan. 12th ..	216	3	219	July 19th ..	280	4	284
Feb. 16th ..	220	3	223	Aug. 16th ..	274	4	278
March 15th ..	222	3	225	Sept. 13th ..	277	4	281
April 12th ..	237	3	240	Oct. 18th ..	251	3	254
May 17th ..	258	4	262	Nov. 15th ..	243	3	246
June 21st ..	261	4	265	Dec. 13th ..	236	3	239

United Kingdom. (Annual average : Males, 2,358 ; Females, 6 ; Total, 2,364.)

Jan. 12th ..	2,139	4	2,143	July 19th ..	2,686	11	2,697
Feb. 16th ..	2,166	4	2,170	Aug. 16th ..	2,683	11	2,694
March 15th ..	2,147	4	2,151	Sept. 13th ..	2,531	9	2,540
April 12th ..	2,243	4	2,247	Oct. 18th ..	2,317	5	2,322
May 17th ..	2,402	9	2,411	Nov. 15th ..	2,227	4	2,231
June 21st ..	2,590	12	2,602	Dec. 13th ..	2,162	4	2,166

* See footnote to Table I.

IV.—Mechanical Power.

PARTICULARS OF PRIME MOVERS, ELECTRIC GENERATORS AND ELECTRIC MOTORS.*

Power equipment.	England and Wales and Northern Ireland.†		Scotland.		United Kingdom.	
	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	8,200	1,063	845	80	9,045	1,143
Steam turbines	84	50	—	—	84	50
Gas engines	7,741	1,320	90	40	7,831	1,360
Petrol and light oil engines	165	8	—	—	165	8
Heavy oil engines	798	—	—	—	798	—
Water-power	55	—	21	—	76	—
TOTAL	17,043	2,441	956	120	17,999	2,561
TOTAL OF PRIME MOVERS INSTALLED	19,484		1,076		20,560	
ELECTRIC GENERATORS :—	Kw.	Kw.	Kw.	Kw.	Kw.	Kw.
Driven by—						
Reciprocating steam engines	1,279	109	130	—	1,409	109
Gas engines	610	95	42	—	652	95
Heavy oil engines	44	—	—	—	44	—
Water-power	—	—	3	—	3	—
TOTAL	1,933	204	175	—	2,108	204
TOTAL OF ELECTRIC GENERATORS INSTALLED	2,137		175		2,312	
ELECTRIC MOTORS :—	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
Driven by—						
Electricity generated in own works	1,459	102	87	—	1,546	102
Purchased electricity	14,083	1,400	2,522	1,060	16,605	2,460

* See page 142 : *Mechanical Power*, para. 2. † See footnote to Table I.