



BOARD OF TRADE

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[HA 251]

# Report on the Census of Production 1963

43 Engineers' small tools and gauges

LONDON: HER MAJESTY'S STATIONERY OFFICE

Price 3s. 6d. net

# 43 Engineers' small tools and gauges

These notes give the main information regarding the figures in the industry reports. (More detailed information about the Census is given in a separate booklet - 'Introductory Notes', Part I of the report on the Census of Production 1963.)

Working proprietors and their partners are included in the figures for the industry. This includes those who are employed by their own firms and those who are employed by other firms. The figures for the industry are based on the Census of Production 1963.

## BOARD OF TRADE

# Report on the Census of Production 1963

The second edition of the Standard Industrial Classification (Consolidated Edition 1958) is published. Each industry was defined in terms of its principal products, these being of a similar nature or commonly associated in production. Normally, the principal products of an industry are those which are produced in the greatest quantities.

# 43 Engineers' small tools and gauges

The figures in this report are based on the Census of Production 1963. The figures for the industry are based on the Census of Production 1963. The figures for the industry are based on the Census of Production 1963.

Presented by the Board of Trade to Parliament in pursuance of the Statistics of Trade Act 1947 (10 & 11 Geo. 6 Cha. 39 Sec. 7)

The figures in this report are based on the Census of Production 1963. The figures for the industry are based on the Census of Production 1963. The figures for the industry are based on the Census of Production 1963.

### TERMS USED IN THE CENSUS REPORT

Average number employed: This was calculated from the number of persons on the payroll (i.e. whose National Insurance cards were paid by them) on the average during the year of return, whether full-time or part-time employees. Separate figures were reported for (a) administrative, technical and clerical employees and (b) operatives (see below). Averages could be calculated from figures relating to the last week of each calendar month; figures shown in respect of the average number employed relate to the sum of these averages. Firms were also required to state the number of working proprietors (see below) whose appropriate and these are included in total employment figures. Outworkers are excluded.

Notes - continued on pages iii and iv



# Notes

These notes give the main information needed for interpreting the figures in the industry reports. (More detailed information about the Census is given in a separate booklet - 'Introductory Notes': Part 1 of the Report on the Census of Production for 1963.)

## GENERAL INFORMATION

### Changes in the 1963 census

There were few changes resulting from amendments to the Standard Industrial Classification and only minor changes in the scope of certain industry reports compared with 1958. Any such changes are explained in the introductions to the industry reports concerned or by footnotes to the tables.

### Industrial Classification

Establishments were classified to industries on the basis of major activity in conformity with the second edition of the Standard Industrial Classification (Consolidated Edition 1963, incorporating Amendment 1). Each industry was basically defined in terms of its principal products, these being of a similar nature or commonly associated in production. Normally, an establishment was classified to an industry if its sales of the principal products of that industry accounted for a greater proportion of its total sales than did its sales of the principal products of any other industry. However, where the application of this rule would have resulted in a change of classification between 1958 and 1963, the establishment was reclassified only if the sales of principal products of the newly predominant industry was more than one third greater than the sales of principal products of the previously predominant industry. This modification of the general rule was introduced for 1958 to avoid discontinuities which would result from marginal changes in sales between successive censuses.

The principle of classification by major output was also normally followed in compiling the analysis by sub-divisions of an industry.

In certain industries, classification was dealt with in a different way. Details of any non-standard treatment are given in the introductions to the relevant industry reports.

## TERMS USED IN THE CENSUS REPORT

### Average number employed

Firms were required to state the number of persons on the payroll (i.e. whose National Insurance cards were held by them) on the average during the year of return, whether full-time or part-time employees. Separate figures were required for (a) administrative, technical and clerical employees and (b) operatives (see below). Averages could be calculated from figures relating to the last week of each calendar month; figures shown in respect of the average number employed relate to the sum of these averages. Firms were also required to state the number of working proprietors (see below) where appropriate and these are included in total employment figures. Outworkers are excluded.

The figures include persons engaged in merchandising or factoring and canteen workers where particulars in respect of these activities could not be excluded from the return.

### Working Proprietors

These include all persons regarded as 'self-employed' for National Insurance purposes, and members of their families who worked in the business without receiving a fixed wage or salary; but persons who worked less than half the normal number of working hours are excluded. For Great Britain, directors working in the business but not in receipt of a definite wage, salary or commission are included under this heading for 1963, but are excluded for 1958. For Northern Ireland, directors of limited companies, other than those paid by fee only, are included for both years. (Directors paid by fee only are not included in any of the employment figures for either year.)

### Employees

(i) Administrative, technical and clerical employees include managers, superintendents and works foremen; research, experimental, development, technical and design employees (other than operatives); draughtsmen and tracers; editorial staff, staff reporters, canvassers, competition and advertising staff; travellers; and office (including works office) employees. For Great Britain, but not for Northern Ireland, they include also managing and other directors in receipt of a definite wage, salary or commission.

(ii) Operatives include all other classes of employees, that is, broadly speaking, all manual wage earners. They include those employed in and about the factory or works; operatives employed in power houses, transport work, stores, warehouses, shops and canteens; inspectors, viewers and similar workers; maintenance workers; and cleaners. Operatives engaged in outside work of erection, fitting, etc. are also included, but outworkers (i.e. persons employed by the firm who worked in their own homes, etc. on materials supplied by the firm) are excluded. Information about the numbers of outworkers employed was collected only for the gloves industry.

### Capital Expenditure

(i) New building work.

This represents the cost incurred during the year of new building and other new constructional work (including office buildings, canteens and the like used in connection with the business covered by the return but not dwelling houses for employees). The value is that charged to capital account during the year of return; it includes expenditure on new buildings or on the extension or reconstruction of old buildings, the value of work of a capital nature carried out by firms' own staff, and the cost of any newly constructed buildings purchased. The figures shown include any legal charges, stamp duties, agents' commissions, etc.

# 43 Engineers' small tools and gauges

This Report on the Engineers' Small Tools and Gauges Industry relates to establishments engaged wholly or mainly in manufacturing engineers' small tools, tool holders and work holders of the types used with metal-working machine tools, and engineers' gauges. The principal products of the industry include three other items manufactured in association with engineers' small tools, namely bits for wood, circular saw blades fitted with toothed segments of metal for cutting wood as well as metal, and detachable tools used in rock drilling machinery.

This industry corresponds to minimum list heading 333 in the Standard Industrial Classification (Consolidated edition, 1963).

In interpreting the data in the tables it is essential to bear in mind the notes and definitions which appear on pages (ii), (iii) and (iv).

	1958	1963
Total	10,000	10,000
New building work	1,000	1,000
Land and existing buildings (f)	1,000	1,000
Plant and machinery (ff)	1,000	1,000
Vehicles (ff)	1,000	1,000



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TABLE 1 Industry summary: United Kingdom

Estimates for all firms, 1958 and 1963 (a)

	Unit	1958	1963
Number of enterprises	No.	1,106	1,296
Number of establishments	"	1,168	1,377
Gross output	£'000	77,685	111,720
Net output	"	51,828	73,751
Net output per head	£	1,005	1,291
Sales and work done	£'000	73,521	103,316(b)
Purchases	"	23,059	28,207
			6,670
Payments to other organisations	"	2,191	2,390
		610	531
Stocks and work in progress			
Total stocks and work in progress	"	+ 377	+ 438
		18,972	28,055
Goods on hand for sale	"	+ 565	+ 290
		6,414	10,468
Work in progress	"	- 189	+ 320
		6,852	9,344
Materials, stores and fuel	"	+ 1	- 171
		5,706	8,242
Average number employed	Th.	51.5	57.1
		39.8	42.1
		11.5	13.0
Wages and salaries	£'000	23,855	29,736
		9,007	12,322
Employers' contributions to National Insurance and private pension schemes, etc. (d)	"	..	2,414
Capital expenditure (e)			
Total	"	..	6,243
New building work	"	1,037	1,332
Land and existing buildings (f)	"	..	131
Plant and machinery (f)	"	3,122	4,377
Vehicles (f)	"	372	402

(a) For 1963, estimates for small firms and for firms not making satisfactory returns accounted for about 20 per cent. of the total figures in which they were incorporated. (For 1958 the comparable figure was 17 per cent.) A summary of the detailed returns received is given in Table 2.

(b) Including services rendered to other organisations (amounts charged for hiring out plant, machinery and other goods, for providing transport, or for technical or other services rendered).

(c) Administrative, technical and clerical employees.

(d) Including pensions and gratuities paid other than from pension funds.

(e) Excluding expenditure for establishments not yet in production.

(f) Acquisitions less disposals.

TABLE 2 Analysis of larger firms by sub-divisions within the industry, 1958 and 1963

Firms employing 25 or more persons: United Kingdom (a)

	Unit	Sub-divisions of the industry (b)				Total		
		Engineers' small tools 01		Engineers' gauges 02		1958	1963	
		1958	1963	1958(c)	1963			
Number of enterprises	No.	324	328	31	28	355	354(d)	
Number of establishments	"	378	393	37	31	415	424	
Gross output	£'000	58,357	83,507	6,321	5,982	64,679	89,489	
Net output	"	38,258	54,742	4,891	4,334	43,150	59,076	
Net output per head	£	1,012	1,295	959	1,248	1,005	1,291	
Sales and work done	£'000	goods produced and work done	77,154(e)	6,134	5,603(e)	61,211	82,757(e)	
		merchanted goods and canteen takings	3,053	5,952	101	291	3,154	6,244
Sales of characteristic products	"	44,241	65,255	3,793	4,288	(f)	(f)	
Index of specialisation (g)	Per cent.	80	85	62	77	82	86	
Purchases	£'000	materials for processing and packaging, and fuel	21,401	1,397	1,193	19,198	22,594	
		goods for merchandising and canteen purchases	17,800	5,035	308	5,342		
Payments to other organisations	"	for work done on materials given out	1,745	1,791	78	123	1,824	1,914
		for transport	460	397	48	29	508	425
Stocks and work in progress								
Goods on hand for sale	"	change during year	+ 351	+ 204	+ 119	+ 28	+ 471	+ 232
		at end of year	4,736	7,888	604	497	5,340	8,385
Work in progress	"	change during year	- 124	+ 197	- 33	+ 60	- 157	+ 256
		at end of year	4,889	6,777	816	708	5,705	7,485
Materials, stores and fuel	"	change during year	- 93	- 141	+ 95	+ 4	+ 1	- 137
		at end of year	4,217	6,113	533	489	4,750	6,602
Average number employed	No.	total, including working proprietors	37,788	42,281	5,129	3,472	42,917	45,753
		operatives	29,290	32,049	4,012	2,676	33,302	34,725
		other employees (h)	8,465	9,975	1,115	777	9,580	10,752
Wages and salaries	£'000	of operatives	17,421	22,795	2,537	1,725	19,958	24,519
		of other employees (h)	6,682	9,350	853	810	7,536	10,160
Wages and salaries per head	£	operatives	595	711	632	645	599	706
		other employees (h)	789	937	765	1,042	787	945
Employers' contributions to National Insurance (i)	£'000	..	1,220	..	90	..	1,309	
Employers' contributions to private pension schemes, etc. (j)	"	..	627	..	54	..	681	
Capital expenditure (k)								
New building work	"	813	973	50	94	864	1,067	
Land and existing buildings (l)	"	..	+ 106	..	- 2	..	+ 105	
Plant and machinery	"	acquisitions	2,550	3,507	209	233	2,759	3,739
		disposals	148	207	12	26	160	233
Vehicles	"	acquisitions	514	513	21	35	535	548
		disposals	217	209	9	17	226	225

For notes to this table - see page 43/6

TABLE 3 Analysis of larger firms by size of enterprise within the industry, 1963

(i) Output, employment, capital expenditure and stocks

Firms employing 25 or more persons: United Kingdom

Average number employed by the enterprise in the industry (a)	Enter-prises	Estab-lish-ments	Average number employed (a)	Gross output	Net output	Net output per head	Capital expenditure (b)	Total value of stocks and work in progress at end of year
	Number	Number	Number	£'000	£'000	£	£'000	£'000
25-49	151	157	5,633	9,083	6,921	1,229	580	1,080
50-99	106	112	7,249	12,882	9,389	1,295	899	2,050
100-199	52	62	6,979	14,797	9,943	1,425	965	3,449
200-299	17	25	3,943	8,821	5,347	1,356	541	3,210
300-399	7	11	2,382	5,105	3,236	1,359	431	1,618
400-499	4	8	1,791	2,708	1,848	1,032	106	941
500-749	8	20	5,217	10,733	6,645	1,274	483	2,772
750-999	5	7	4,158	8,836	5,516	1,326	283	2,635
1,500 and over	4	22	8,401	16,525	10,231	1,218	713	4,718
Total	354	424	45,753	89,489	59,076	1,291	5,000	22,472

(ii) Employees, wages and salaries, and employers' contributions

Firms employing 25 or more persons: United Kingdom

Average number employed by the enterprise in the industry (a)	Employees		Wages and salaries		Employers' contributions		Wages and salaries per head	
	Oper-atives	Others (c)	Oper-atives	Others (c)	National Insurance (d)	Private pension schemes, etc. (e)	Oper-atives	Others (c)
	Number	Number	£'000	£'000	£'000	£'000	£	£
25-49	4,492	1,001	3,584	1,006	177	44	798	1,005
50-99	5,739	1,416	4,578	1,419	227	86	798	1,002
100-199	5,330	1,616	4,098	1,596	198	121	769	987
200-299	2,940	1,002	2,166	885	111	64	737	883
300-399	1,603	779	1,118	751	73	48	697	964
400-499	1,366	425	861	386	49	30	630	908
500-749	3,821	1,390	2,727	1,261	145	82	713	907
750-999	2,899	1,259	1,910	1,063	111	72	659	844
1,500 and over	6,535	1,864	3,478	1,794	218	135	532	962
Total	34,725	10,752	24,519	10,160	1,309	681	706	945

(a) Including working proprietors.

(b) Acquisitions less disposals.

(c) Administrative, technical and clerical employees.

(d) Including both flat rate and graduated contributions.

(e) Including pensions and gratuities paid other than from pension funds. These amounted in total to £67,000.

TABLE 4 Percentage analysis of employees, by age and sex, all firms, 1963: United Kingdom (a)

Ages	Males	Females	All employees
	Per cent.	Per cent.	Per cent.
Under 18	5	2	7
18 and over	72	21	93
All ages	77	23	100

Source: Ministry of Labour

(a) The percentages relate to the numbers employed (excluding working proprietors) at mid-June, 1963.

## Footnotes to Table 2.

(a) The following information relates to small firms (employing fewer than 25 persons) in this industry. It includes an estimate for small firms not making satisfactory returns, which account for 3 per cent. of the employment shown for 1963. (For 1958 the comparable figure was also 3 per cent.)

	1958	1963
Number of firms	742	920

Average number employed:

Working proprietors	} 8,280	{ 1,683
Other persons employed		

- (b) The method of classifying returns to sub-divisions of the industry is explained in the notes; the characteristic products of each sub-division are identified in Table 5.
- (c) Including engineers' measuring instruments, which in 1963 are included in the report on Scientific, Surgical and Photographic Instruments.
- (d) The sum of the figures for the sub-divisions exceeds the total for the industry to the extent that enterprises made returns for more than one sub-division.
- (e) Including services rendered to other organisations (amounts charged for hiring out plant, machinery and other goods, for providing transport, or for technical or other services rendered).
- (f) Characteristic products relate only to sub-divisions of the industry.
- (g) For sub-divisions of the industry, this is the ratio of sales of characteristic products to total sales of goods produced and work done. For the industry as a whole, this is the ratio of total sales of principal products by the industry to total sales of goods produced and work done.
- (h) Administrative, technical and clerical employees.
- (i) Including both flat rate and graduated contributions.
- (j) Including pensions and gratuities paid other than from pension funds.
- (k) Excluding expenditure for establishments not yet in production.
- (l) Acquisitions less disposals.

TABLE 5 Sales of principal products of the industry by larger firms, including sales by establishments classified to other industries, 1958 and 1963

Firms employing 25 or more persons: United Kingdom

Industry sub-division (a)	1958		1963		Enterprises	Entries
	Quantity	Value	Quantity	Value		
	Th.doz.	£'000	Th.doz.	£'000		
01 Engineers' cutting and forming small tools, and tool and work holders and parts thereof						
Hard metal tipped tools	266	3,357	203	2,439	} 52	} 56
	..	1,408	..	3,811		
Hard metal tips and inserts, sold separately	711	1,751	563	2,268	} 22	} 26
	..	..	..	450		
Hard metal dies and die pellets, sold separately	6.1	339	..	849	} 17	} 19
	..	354	..	..		
Diamond tipped tools and diamond dies	5.2	449	8.4	790	} 9	} 9
	..	244	..	1,070		
Other than hard metal						
Drills, cylindrical, helically grooved (commonly known as twist drills), bit stock drills and machine bits for wood (but not including auger bits)	3,174	3,446	4,745	5,506	} 26	} 28
	..	488	..	826		
Circular saws and bandsaws, for metal cutting	..	129(b)	16.6	377	} 17	} 19
	..	..	..	675		
Slitting saws	42.0	515	39.4	445	} 9	} 9
	..	..	..	229		
Milling cutters	49.9	1,747	44.1	1,839	} 39	} 43
	..	729	..	717		
Reamers, end mills and similar shank tools	208	1,957	264	2,489	} 39	} 44
	..	371	..	911		
Lathe and planer tools	275	1,254	307	1,445	} 24	} 25
	..	102	..	292		
Broaches	..	1,208	..	1,331	11	12
Hacksaw blades	..	2,355	..	2,985	13	13
Cut and ground thread screwing tackle	..	4,479	..	6,516	32	36
Other cutting tools, except saws and saw blades	..	1,850	..	2,637	56	57
Press tools	..	6,262	..	16,768	205	218
Moulds and dies	..	2,699	..	4,654	136	141
Lathe chucks	..	1,605	..	2,366	12	14
Drill chucks	..	532	..	731	9	9
Jigs and fixtures	..	11,828	..	14,884	299	319
Other tool and work holders	..	2,190	..	4,287	97	102
01 Circular saw blades fitted with toothed segments of metal and toothed segments therefor (for metal or wood)	..	943	..	1,185	11	11
01 Detachable tools (drilling bits etc. used in rock drilling machinery)	179	1,304	189	2,057	} 16	} 16
	..	567	..	1,966		
01 Other and unclassified engineers' small tools	..	9,622	..	8,139	79	84
Total engineers' small tools		66,084		97,934	..	..

Continued on next page

TABLE 5 (continued)

Industry sub-division (a)	1958		1963			
	Quantity	Value	Quantity	Value	Enter-prises	Entries
	Th.doz.	£'000	Th.doz.	£'000	Number	Number
Engineers' gauges (excluding optical, and pressure and vacuum gauges)						
02 Dial gauges and other dial indicators	48.9	242	198	557	20	21
	..	575	..	963		
02 Other and unclassified	1,248	1,953(c)	1,411	2,199	84	88
	..	2,926	..	2,978		
Total engineers' gauges		5,696		6,697	..	..
Other products	-	-	..	296	29	29
Waste products						
Scrap metals	Th.tons		Th.tons			
Iron and steel	5,923	132	..	234	117	126
	..	64	..	..	..	..
Brass	7	1	37	4	20	20
	..	2	..	..	..	..
Other scrap metals	..	10	..	13	28	28
Other waste products	..	31	..	12	11	11
Work done						
Installation work		79				
Research and development work done for customers (including Government Departments)		321		199	16	16
Total		72,417		105,390	..	..
Sales in other industries (see Table 6)		22,356		34,456		
Principal products of this industry sold by establishments in the industry		50,061		70,934	369	359(d)

(a) The number given is that of the sub-division of which the item is a characteristic product. The sales shown are the total sales by larger firms, not merely sales by establishments classified to the sub-division.

(b) Metal cutting bandsaws only in 1958.

(c) Including engineers' measuring instruments, which in 1963 are included in the report on Scientific, Surgical and Photographic Instruments.

(d) This figure represents the total number of returns made by larger firms in this industry, which is less than the total number of establishments in Table 2 on account of combined returns covering more than one establishment.

TABLE 6 Sales of principal products of the industry by establishments classified to other industries, 1958 and 1963

Firms employing 25 or more persons: United Kingdom

	1958		1963			Principal industries in which produced (a)
	Quantity	Value	Quantity	Value	Entries	
	Th.doz.	£'000	Th.doz.	£'000	Number	
Engineers' cutting and forming small tools, and tool and work holders and parts thereof						
Hard metal tipped tools	82.9	1,280	19.3	479	15	42,49,52,74
	..	972	..	1,456		
Hard metal tips and inserts, sold separately	52.7	271		940	12	42,46,74
Hard metal dies and die pellets, sold separately	..	255				
Other than hard metal						
Drills, cylindrical, helically grooved (commonly known as twist drills), bit stock drills and machine bits for wood (but not including auger bits)	..	368	10.0	101	7	37,42,49
	..	..	..	138		
Circular saws and bandsaws for metal cutting	-	-	..	145	11	42,51,68
Milling cutters	12.2	122	..	283	9	42,49
	..	290	..	..	..	..
Reamers, end mills and similar shank tools	..	188	..	385	8	42,52,68
Lathe and planer tools	..	171	14.9	96	5	37,42,51
	..	..	..	47		
Hacksaw blades	..	435	..	1,509	17	42,49,51,68
Cut and ground thread screwing tackle	..	1,229	..	..		
Other cutting tools, except saws and saw blades	..	1,582	..	1,138	22	37,42,49,52
Press tools	..	2,531	..	11,099	81	42,49,62,74
Moulds and dies	..	849	..	1,657	57	(b)
Lathe chucks	..	..	..	..		
Drill chucks	..	474	..	670	9	37,42
Jigs and fixtures	..	1,611	..	5,216	124	42,49,62,64
Other tool and work holders	..	1,256	..	1,207	44	42,49,51,74
Circular saw blades fitted with toothed segments of metal and toothed segments therefor (for metal or wood)	-	-	..	261	*	37,49,51,68
Detachable tools (drilling bits, etc.) used in rock drilling machinery	24.1	320	93.2	559	7	46,49,60,68
	..	58	..	270		
Other and unclassified engineers' small tools	..	6,784	..	5,203	45	40,42,52,64
Total engineers' small tools		21,045		32,859	..	
Engineers' gauges (excluding optical, and pressure and vacuum gauges)						
Dial gauges and other dial indicators	..	127	..	366	7	52,53,58,62
Other and unclassified	..	1,184	..	1,228	30	42,53,60,68
Total		22,356		34,456	..	

(a) The references given are to the list of industries at the back of this report.

(b) Production is widely distributed.

TABLE 7 Sales of other than principal products by larger firms in the industry, 1958 and 1963  
Firms employing 25 or more persons: United Kingdom

	1958	1963
	Value £'000	Value £'000
Permanent magnets and other metal manufactures	605	662
Metal-working machine tools		
New		
Complete	1,886	2,438
Parts	547	329
Textile machinery and accessories	31	54
Mining machinery, complete and parts	273	1,291
Other (non-electric) machinery, complete and parts	667	
Mechanical engineering products	1,177	502
Scientific, surgical and photographic instruments, etc.	118	224
Parts and accessories of motor vehicles and aircraft	405	161
Tools and implements, other than engineers' small tools and gauges	817	1,120
Cutlery	944	181
Miscellaneous metal goods	1,382	492
Electrical machinery, complete and parts		340
Other products	2,297	1,338
Repair and jobbing work		963
Other work done on commission, sub-contract work, etc.	..	1,416
Services rendered to other organisations (a)		315
Total value of goods sold without having been subjected to any manufacturing process (merchanted or factored)	2,964	5,964
Canteen takings	191	280
<b>Total</b>	<b>14,303(b)</b>	<b>18,067</b>

(a) Amounts charged for hiring out plant, machinery or other goods, for providing transport, or for technical or other services rendered to other organisations.

(b) Excluding amounts charged for services rendered to other organisations.

TABLE 8 Production of certain principal products of the industry by larger firms, including production by establishments classified to other industries, 1958 and 1963

This table is not applicable to this industry.

TABLE 9 Purchases of selected principal products of the industry by larger firms, 1963

This table is not applicable to this industry.

TABLE 10 Purchases by larger firms in the industry, 1954 and 1963  
Firms employing 25 or more persons: United Kingdom

	1954		1963	
	Quantity Th.tons	Cost £'000	Quantity Th.tons	Cost £'000
Materials for processing				
Iron castings	4.9	351	5.5	580
Steel				
Ingots, blooms, billets, slabs, and sheet and tinplate bars	1.7	131	2.0	198
Bars and rods (including wire rods), angles, shapes and sections, girders, beams, joists and pillars rolled (not fabricated), including tube rounds and squares (a)	21.1	2,903	18.7	3,547
Plates, 3mm. thick and over	2.8	180	3.9	262
Hoop and strip (including tape of all thicknesses)	..	20	1.4	140
Sheets under 3mm. thick (including electrical sheets)	3.2	677	2.4	659
Tinplate, terneplate and blackplate	..	4	0.1	10
Forgings (except drop forgings)	0.5	85	1.0	260
Castings	0.9	187	0.6	119
Drop forgings (b)	0.2	38	2.8	592
Iron and steel not elsewhere specified except finished parts, wire and scrap	..	..	..	..
Wrought tubes and fittings for wrought tubes (including welded, seamless, conduits, etc.)	..	13	0.1	25
Other (c)	0.4	13	0.7	168
Springs, laminated and other types	..	8	..	12
Single steel wire (excluding insulated wires and cables) (d)	..	(e)	..	82
Ferro-alloys	..	76	..	136
Light metals and non-ferrous metals in all forms except finished parts, wire and scrap				
Aluminium and aluminium alloys	0.1	52	0.2	97
Brass and other copper alloys (including nickel silver and cupro-nickel, but excluding all other nickel alloys)	0.3	91	0.3	122
Copper (excluding blister) (f)	..	16	..	8
Lead and alloys of lead (excluding solder)	..	6	..	3
Zinc and alloys of zinc	0.1	22	..	17
Solder, soft	..	9	..	17
Metal powders	..	(g)	..	752
Heavy chemicals (acids, alkalis, alcohols, other inorganic and organic chemicals, compressed gases, etc.)	..	(g)	..	94
Paint and varnish (including lacquers and stains)	..	30	..	44
Synthetic resins and plastics materials (excluding leathercloth and reinforced plastics)	..	(g)	..	19
Refractory materials	..	9	..	28
Rubber, including hard rubber, balata, gutta-percha and synthetic rubber in all forms, including finished parts	..	3	..	7

Continued on next page



TABLE 10 (continued)

	1954		1963	
	Quantity	Cost	Quantity	Cost
		£'000	Th.cu.ft.	£'000
Materials for processing (continued)				
Timber				
Softwood, sawn or planed, but not further prepared or manufactured	..	34	..	12
Hardwood, sawn or planed, but not further prepared or manufactured	..	..	{ 11.8 ..	{ 7 8
			Th.sq.ft.	
Plywood, including blockboard, laminboard and battenboard	..	16	{ 91.3 ..	{ 6 3
Insulated wires, cables, strips and strands (h)	..	12	..	17
Bolts, rivets, nuts and washers, screws, nails, tacks, etc.	..	149	..	175
Machinery bought for installation	..	(g)	..	100
Purchased components for incorporation in firms' own products				
Ball and roller bearings and parts thereof	..	27	..	100
Electric motors				
Of less than 1 h.p.	..	47	..	48
Of 1 h.p. and over	..	..	..	59
Industrial valves	..	12	..	19
Gear and gear wheels of metal	..	14	..	25
Pumps	..	6	..	16
Measuring instruments and gauges and parts				
Industrial process measuring and control instruments and equipment	..	11	..	187
Other	..	..	..	111
Plastic goods moulded and fabricated	..	12	..	27
Other components not elsewhere specified except those of rubber and asbestos (i)	..	690	..	1,659
	Th.gal.		Th.gal.	
Lubricating oils and greases (including cutting oils and emulsions)	{ 143 ..	{ 41 29	{ 286 ..	{ 89 28
Replacement parts for firms' own machinery, plant and vehicles, and accessories and consumable tools bought as replacement	..	1,056	..	1,338
All other materials for processing	..	3,901	..	4,379
Packaging materials				
Paper and board				
Boxes, cartons, packing cases and drums and canisters (with or without metal ends) of paper, cardboard and fibreboard	..	..	..	355
Wrapping paper (including paper coated with plastics and any laminates incorporating paper but not metal), moulded pulp units, labels and other packaging materials of paper, cardboard and fibreboard (except multiwall sacks)	..	156	..	65
Timber				
Containers wholly or mainly of wood, including plywood boxes and drums, baskets and wickerwork crates	..	..	..	149
Timber (sawn or planed) for manufacture into packing cases, etc.	..	84	..	12
Plywood for manufacture into packing cases	..	..	..	..

TABLE 10 (continued)

	1954		1963	
	Quantity	Cost	Quantity	Cost
		£'000		£'000
Packaging materials (continued)				
All other packaging materials	..	112	..	47
Fuel and electricity (j)	Th.tons		Th.tons	
Coal	10.8	45	5.9	33
Coke (including screenings) and manufactured fuel	{ 10.3 ..	{ 58 7	{ 4.7 ..	{ 39 9
	Th.gal.		Th.gal.	
Derv fuel and motor spirit for use in road vehicles	{ 435 ..	{ 95 11	{ 589 ..	{ 134 33
Other liquid fuels (including creosote/pitch mixtures, etc., and liquefied petroleum gases)	{ 433 ..	{ 22 5	{ 3,634 ..	{ 317 ..
	Th.therms		Th.therms	
Gas	{ 5,423 ..	{ 220 44	{ 6,045 ..	{ 391 82
	Th.kWh.		Th.kWh.	
Electricity	{ 64,744 ..	{ 365 86	{ 116,447 ..	{ 754 260
Total cost of materials and fuel		13,898		22,594
Goods purchased for merchanting		..		5,002
Canteen purchases		..		340
Total cost of purchases		..		27,937

- (a) 'Pillars rolled (not fabricated) including tube rounds and squares' were not included in the heading in 1954.
- (b) Described in 1954 as 'Drop forgings of iron and steel'.
- (c) Heading in 1954 covered iron only.
- (d) Described as covering 'Iron and steel' in 1954.
- (e) Owing to the risk of disclosure relating to individual enterprises separate details cannot be given and have been included with 'All other materials for processing'.
- (f) 'Blister' was not specifically excluded in 1954.
- (g) Not recorded separately.
- (h) 'Strips and strands' were not included in 1954.
- (i) Components of rubber and asbestos were not specifically excluded in 1954.
- (j) The total quantity of electricity generated in firms' own establishments in this industry was 769 thousand kWh in 1954 and 1,002 thousand kWh in 1963.

TABLE 11 Transport costs and employment of larger firms, 1963

Firms employing 25 or more persons: United Kingdom

	Unit	1963
Average number employed mainly on transport	No.	311
<b>Transport costs</b>		
Wages and salaries	£'000	230
Derv fuel and motor spirit	"	166
Payments to other organisations for transport	"	425
<b>Costs of operating road goods vehicles</b>		
Insurance	"	20
Vehicle licences	"	13
Depreciation	"	97
Payments to other organisations for repairs and maintenance	"	63
<b>Total</b>	"	<b>1,015</b>

TABLE 12 Payments for certain services, etc. by larger firms, 1963 (a)

Firms employing 25 or more persons: United Kingdom

	Amounts payable
Repairs and maintenance to	£'000
Buildings	206
Road goods vehicles	63
Plant, machinery, and other capital equipment	500
Insurance, licensing and depreciation of road goods vehicles (b)	131
Rates, excluding water rates	616
Hire of plant and machinery	117
Postage, telephone, telegrams and cables	525
<b>Total</b>	<b>2,158</b>

(a) No deduction is made for these payments to arrive at the figures of net output given in this report.  
 (b) For details see Table 11.

TABLE 13 Percentage analysis of twelve-month periods covered by returns from larger firms, 1963

Firms employing 25 or more persons: United Kingdom

Year ended	Percentage of total number employed	Year ended	Percentage of total number employed
1963	Per cent.	1963 (contd.)	Per cent.
April (a)	4.8	November	3.6
May	6.3	December	31.5
June	6.6		
July	6.0	1964	
August	3.2	January	0.6
September	7.8	February	1.0
October	3.4	March	25.0
		<b>Total</b>	<b>100</b>

(a) Including returns made for twelve-month periods ended 1st to 5th April, 1964.

TABLE 14 Sales of all parts of machinery and plant by larger firms, including sales by establishments classified to other industries, 1958 and 1963

This table is not applicable to this industry.

**Capital Expenditure (continued)**

(ii) Land and existing buildings.

The items shown are the capital cost of freeholds purchased and the capital cost or premium payable for leaseholds acquired (excluding the value of any assets acquired in taking over an existing business), and the amounts receivable for any freeholds or leaseholds disposed of. The value is that charged to capital account during the year of return.

(iii) Plant, machinery and vehicles.

The items shown are the value of plant and machinery and of vehicles acquired, both new and second-hand, and the amount received for items disposed of during the year. The value of plant and machinery acquired includes plant, etc. which firms produced for their own use in connection with the business covered by the return. The value of plant, etc. acquired is the expenditure charged to capital account during the year of return less any discounts received, but including the cost of transport and installation. No deduction is made for depreciation, amortisation or obsolescence. The proceeds of items disposed of during the year exclude amounts written off for items scrapped.

Capital expenditure during the year in respect of manufacturing establishments where production had not started before the end of the year is excluded in this report for both 1958 and 1963.

**Characteristic Products**

The characteristic products of a sub-division are those in terms of which the sub-division is defined. They are products commonly associated in production and are usually similar in nature or manner of production. In most cases the characteristic products of each sub-division are indicated in Table 5 of the industry reports. For those industries for which an analysis by sub-divisions has been made, Table 2 shows the total sales of such characteristic products for each sub-division. The totals include, besides the products which define the sub-division, other items of output assumed to be closely related to them, e.g. waste products and work done.

**Enterprise**

The term enterprise is used in this report to mean one or more firms under common ownership or control. An enterprise normally consists either of a single firm, or of a parent company together with its subsidiary companies.

**Entries**

The number of entries shown in Tables 5, 6 and 8 against a particular output or production heading is the number of returns on which figures were recorded for that item.

**Establishment**

The census was based on the establishment, comprising in most cases the whole of the premises under the same ownership or management at a particular address (e.g. a factory or mine); but firms were asked to exclude from all sections of their returns particulars relating to any department not engaged in production for which they kept a separate set of accounts. Where separate accounts were not kept, they were asked to include merchanting or factoring, canteens operated by them and other

ancillary activities such as bottling, packing and the manufacture of containers for packing their own products, whether or not these activities are carried on at the same address as the works. Building and engineering maintenance departments and selling and transport departments were treated similarly.

**Gross Output**

The gross output of an industry is the aggregate value of goods made and other work done during the year by the establishments classified to the industry. It is derived by subtracting from the value of sales and work done, the value of stocks of goods on hand for sale and work in progress at the beginning of the year and adding the value at the end of the year.

**Larger Firms**

These are firms in which twenty-five or more persons were employed on the average during the year.

**Net Output**

The net output of an industry represents the value added to materials by the process of production. It includes the gross margin on any merchanted or factored goods sold; it constitutes the fund from which wages, salaries, insurance, pensions, hire of plant and machinery, payments for repairs and maintenance, costs of operating road vehicles, rents, rates and taxes, advertising and other selling expenses and all other similar charges have to be met, as well as depreciation and profits. There is no appreciable duplication in net output. Net output has been obtained by deducting from the gross output the cost of purchases adjusted for stock changes, payments for work given out to other firms, and payments for transport.

Normally any customs or excise duty on materials purchased is included in the cost of materials. Similarly, finished goods sold have been valued as they were sold, duty paid or duty free. The amounts of duty, subsidies, allowances and levies receivable or payable, where of substantial importance in the industry, were required to be stated separately, and these items were taken into account when calculating net output.

**Net output per person employed**

The figures for net output per person employed are derived by dividing the net output by the average number of persons employed (full-time and part-time) on all activities covered by the returns, including operatives, administrative, technical and clerical employees and working proprietors, but excluding outworkers.

**Principal Products**

The principal products of an industry are those in terms of which the industry is defined. They are products commonly associated in production, and are usually similar in nature or manner of production.

**Production**

This means the total quantity of a product made during the year, whether sold in the year, added to stock, transferred to another department of the same firm, or used in the manufacture of other products within the business covered by the return. It includes goods produced from materials supplied by other firms.

### Purchases

Purchases include the cost of materials and components bought for use in production; of fuel and electricity for all purposes; of packing materials, including the full cost of returnable cases and containers when first purchased; of workshop materials, office materials and materials for repairs to firms' own buildings, plant and vehicles when carried out by their own workpeople included in the return; of consumable tools; and of parts for machinery purchased during the year as replacements. Water charges are also included. In general purchases of goods for merchandising or factoring and canteen supplies are included. Materials supplied by customers for processing are excluded.

The values shown include any duty paid (less rebate, etc.) but exclude trade discounts allowed. The cost of transport is included only if included in the cost of materials as invoiced; amounts paid to transport organisations, including firms' own separate transport organisations, for delivery of materials and fuel are, therefore, excluded. Materials purchased overseas are included at their c.i.f. cost plus any duty payable if the cost of transport from the docks was not included in the invoiced price, but at their full delivered cost if invoiced 'carriage paid home'. Materials and fuel transferred from another department of the firm not covered by the same return are included at the estimated selling value recorded by the other department.

### Sales

Sales are in respect of goods made by the business covered by the return, goods made for it by outworkers or by other firms from materials given out to them (sometimes described as goods made on commission) and waste products. Any machinery or other capital items produced for use in the business covered by the return are included, the value being that adopted in the firm's capital asset account. Goods sold without being subjected to any manufacturing process (merchanted or factored) and canteen takings are included as in 1958.

The value shown for sales is the net selling value, defined as the amount charged to customers whether on an ex-works or delivered basis, net of any trade discounts, agents' commissions, allowances for returnable cases, purchase tax, etc.; the net amount charged for packing materials is included. Goods charged on a delivered basis to customers overseas are included at the f.o.b. value. For work done on commission or for the trade the value shown is the net amount charged.

Where goods produced in one department were transferred to another department of the same firm not covered by the return, these transfers were treated as sales by the producing department and valued as far as possible as if they had been sold to an independent purchaser. Goods transferred to wholesale or retail selling organisations for which separate accounts were kept were valued on the same basis.

Estimations of a similar kind were also sometimes necessary in valuing transfers between different firms belonging to the same enterprise. To the extent that the sales of finished products of one establishment may constitute the materials purchased by another, total figures of the value of sales (and of materials and fuel purchased) include an element of duplication.

### Services rendered

This represents the amounts charged for hiring out plant, machinery and other goods, providing transport, or for any technical or other

services rendered to other organisations. It includes amounts credited for similar services rendered to other departments of the same firm not covered by the return.

### Small Firms

These are firms in which fewer than twenty-five persons were employed on the average during the year.

### Stocks and Work in Progress

Values are given of stocks of goods on hand for sale, and of materials and fuel, at the beginning and end of the year of return, including any stocks of goods held for merchandising or factoring. The values include duty in the case of dutiable goods held out of bond. The value of work in progress at the two dates is also usually shown. This excludes any progress payments made to sub-contractors, and no deduction is made on account of progress payments received.

### Transport Payments

These represent the total amount paid or credited during the year for both outwards transport of finished goods sold and inwards transport of materials and fuel purchased. They include payments to other firms, and to any separate transport organisation of the same firm, not covered by the return, but exclude the value of transport services provided by the business covered by the return. The items included are payments for hired cartage and for inwards and outwards carriage by all forms of inland transport, i.e. railways, road haulage, canals, coast-wise shipping, air, etc. Payments made for sea freight on goods sold to customers overseas and on materials and fuel purchased from overseas suppliers are excluded.

### Wages and Salaries

These are the amounts paid during the year to operatives and to administrative, technical and clerical employees. Payments to working proprietors, whether called salaries or not, are excluded; in Northern Ireland this exclusion extends also to payments to directors of limited companies. The values shown include all overtime payments, bonuses and commissions, whether paid regularly or not, and no deduction is made for income tax, insurances, contributory pensions, etc. The value of any payments in kind, travelling expenses, lodging allowances, etc. and employers' contributions to National Insurance and pension schemes is excluded.

### Work given out

The figures shown represent the total amount paid for work done by other firms on materials supplied to them, and also by firms' own establishments for which separate returns were made. They do not include payments to individual outworkers or payments for business and other services.

### Symbols used

The following symbols are used throughout the report:

- .. Not available
- Nil or negligible (less than half the final digit shown)
- \* Figures cannot be shown owing to the risk of disclosing information about individual enterprises.

### Rounding of Figures

The figures in the tables have, where necessary, been rounded to the nearest final digit. There may, therefore, be apparent slight discrepancies between the sums of the constituent items and the totals shown.

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