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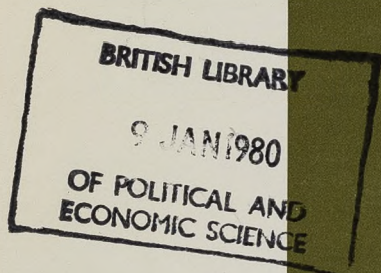
1977

Business Statistics Office

# Business Monitor

Report on the  
Census of Production

Refractory goods



HMSO



A publication of the Government Statistical Service

# PA46 1.1 Business Monitor

A publication of the Government Statistical Service

## Report on the Census of Production 1977

### Refractory goods

Presented by the Secretary of State for Industry  
to Parliament in pursuance of the Statistics of Trade Act 1947  
(10 & 11 Geo.6 Cha.39 sec 7)

Department of Industry  
Business Statistics Office

London: Her Majesty's Stationery Office

#### Special Note for Purchasers

Commencing with the 1971 Census, the Census of Production reports are being numbered in a uniform series embracing all industrial inquiries in the Business Monitor series. These Business Monitors have a code P (for production) followed first by A (indicating that it is an annual series) or Q (quarterly) or M (monthly); and then by a number indicating the minimum list heading, or sub-division of a minimum list heading, of the Standard Industrial Classification (revised 1968).

The Census of Production (PA) reports are available on standing order (details on application to Her Majesty's Stationery Office, P.O. Box 569, London SE1 9NH. Telephone 01-928 6977), although they are not included in the global subscription arrangements for the Business Monitor series.

#### Government Statistical Service

A service of statistical information and advice is provided to the Government by specialist staffs employed in the statistics division of individual Departments. Statistics are made generally available through their publications and further information and advice on them can be obtained from the Departments concerned.

#### Enquiries:

Business Statistics Office

Newport, Gwent

NPT 1XG

Newport 56111 (STD code 0633) ext 2455

Telex 497121

Answer Back BSONPT G

#### LIST OF CONTENTS

Refractory goods	1
Other goods	2
Summary	3
Index	4
Appendix	5
Notes	6
Tables	7
References	8
Tables	9
Tables	10
Tables	11
Tables	12
Tables	13
Tables	14
Tables	15
Tables	16
Tables	17
Tables	18
Tables	19
Tables	20
Tables	21
Tables	22
Tables	23
Tables	24
Tables	25
Tables	26
Tables	27
Tables	28
Tables	29
Tables	30
Tables	31
Tables	32
Tables	33
Tables	34
Tables	35
Tables	36
Tables	37
Tables	38
Tables	39
Tables	40
Tables	41
Tables	42
Tables	43
Tables	44
Tables	45
Tables	46
Tables	47
Tables	48
Tables	49
Tables	50
Tables	51
Tables	52
Tables	53
Tables	54
Tables	55
Tables	56
Tables	57
Tables	58
Tables	59
Tables	60
Tables	61
Tables	62
Tables	63
Tables	64
Tables	65
Tables	66
Tables	67
Tables	68
Tables	69
Tables	70
Tables	71
Tables	72
Tables	73
Tables	74
Tables	75
Tables	76
Tables	77
Tables	78
Tables	79
Tables	80
Tables	81
Tables	82
Tables	83
Tables	84
Tables	85
Tables	86
Tables	87
Tables	88
Tables	89
Tables	90
Tables	91
Tables	92
Tables	93
Tables	94
Tables	95
Tables	96
Tables	97
Tables	98
Tables	99
Tables	100

List of Industry Reports, etc.

PA1001	Introductory notes	PA369.1	Electrical equipment for motor vehicles, cycles and aircraft
PA101	Coal mining	PA369.2	Primary and secondary batteries
PA102	Stone and slate quarrying and mining	PA369.4	Electric lamps, electric light fittings, wiring accessories, etc.
PA103	Chalk, clay, sand and gravel extraction	PA370	Shipbuilding and marine engineering
PA104	Petroleum and natural gas	PA380	Wheeled tractor manufacturing
PA109	Miscellaneous mining and quarrying	PA381.1	Motor vehicle manufacturing
PA211	Grain milling	PA381.2	Trailers, caravans and freight containers -
PA212	Bread and flour confectionery	PA382	Motor cycle, tricycle and pedal cycle manufacturing
PA213	Biscuits	PA383	Aerospace equipment manufacturing and repairing
PA214	Bacon curing, meat and fish products	PA384	Locomotives, railway track equipment, railway carriages, wagons and trams
PA215	Milk and milk products	PA390	Engineers' small tools and gauges
PA216	Sugar	PA391	Hand tools and implements
PA217	Cocoa, chocolate and sugar confectionery	PA392	Cutlery, spoons, forks and plated tableware, etc.
PA218	Fruit and vegetable products	PA393	Bolts, nuts, screws, rivets, etc.
PA219	Animal and poultry foods	PA394	Wire and wire manufactures
PA221	Vegetable and animal oils and fats	PA395	Cans and metal boxes
PA229.1	Margarine	PA396	Jewellery and precious metals
PA229.2	Starch and miscellaneous foods	PA399.1	Metal furniture
PA231	Brewing and malting	PA399.5	Drop forgings, etc.
PA232	Soft drinks	PA399.6	Metal hollow-ware
PA239.1	Spirit distilling and compounding	PA399.8	Miscellaneous metal manufacture
PA239.2	British wines, cider and perry	PA411	Production of man-made fibres
PA240	Tobacco	PA412	Spinning and doubling on the cotton and flax systems
PA261	Coke ovens and manufactured fuel	PA413	Weaving of cotton, linen and man-made fibres
PA262	Mineral oil refining	PA414	Woolen and worsted
PA263	Lubricating oils and greases	PA415	Jute
PA271.1	Inorganic chemicals	PA416	Rope, twine and net
PA271.2	Organic chemicals	PA417.1	Hosiery and other knitted goods
PA271.3	Miscellaneous chemicals	PA417.2	Warp knitting
PA272	Pharmaceutical chemicals and preparations	PA418	Lace
PA273	Toilet preparations	PA419	Carpets
PA274	Paint	PA421	Narrow fabrics
PA275	Soap and detergents	PA422.1	Household textiles and handkerchiefs
PA276	Synthetic resins and plastics materials and synthetic rubber	PA422.2	Canvas goods and sacks and other made-up textiles
PA277	Dyestuffs and pigments	PA423	Textile finishing
PA278	Fertilizers	PA429.1	Asbestos
PA279.1	Polishes	PA429.2	Miscellaneous textile industries
PA279.2	Formulated adhesives, gelatine, etc.	PA431	Leather (tanning and dressing) and fellmongery
PA279.3	Explosives and fireworks	PA432	Leather goods
PA279.4	Formulated pesticides, etc.	PA433	Fur
PA279.5	Printing ink	PA441	Weatherproof outerwear
PA279.6	Surgical bandages, etc.	PA442	Men's and boys' tailored outerwear
PA279.7	Photographic chemical materials	PA443	Women's and girls' tailored outerwear
PA311	Iron and steel (general)	PA444	Overalls and men's shirts, underwear, etc.
PA312	Steel tubes	PA445	Dresses, lingerie, infants' wear, etc.
PA313	Iron castings, etc.	PA446	Hats, caps and millinery
PA321	Aluminium and aluminium alloys	PA449.1	Corsets and miscellaneous dress industries
PA322	Copper, brass and other copper alloys	PA449.2	Gloves
PA323	Miscellaneous base metals	PA450	Footwear
PA331	Agricultural machinery (except tractors)	PA461.1	Refractory goods
PA332	Metal-working machine tools	PA461.2	Building bricks and non-refractory goods
PA333.1	Pumps	PA462	Pottery
PA333.2	Valves	PA463	Glass
PA333.3	Compressors and fluid power equipment	PA464	Cement
PA334	Industrial engines	PA469.1	Abrasives
PA335	Textile machinery and accessories	PA469.2	Miscellaneous building materials and mineral products
PA336	Construction and earth-moving equipment	PA471	Timber
PA337	Mechanical handling equipment	PA472	Furniture and upholstery
PA338	Office machinery	PA473	Bedding, etc.
PA339.1	Mining machinery	PA474	Shop and office fitting
PA339.2	Printing, bookbinding and paper goods machinery	PA475	Wooden containers and baskets
PA339.3	Refrigerating machinery, space-heating, ventilating and air-conditioning equipment	PA479	Miscellaneous wood and cork manufactures
PA339.5	Scales and weighing machinery and portable power tools	PA481	Paper and board
PA339.7	Food and drink processing machinery and packaging and bottling machinery	PA482.1	Cardboard boxes, cartons and fibre-board packing cases
PA339.9	Miscellaneous (non-electrical) machinery	PA482.2	Packaging products of paper and associated materials
PA341	Industrial (including process) plant and steelwork	PA483	Manufactured stationery
PA342	Ordnance and small arms	PA484.1	Wallcoverings
PA349.1	Ball, roller, plain and other bearings	PA484.2	Miscellaneous manufactures of paper and board
PA349.2	Precision chains and other mechanical engineering	PA485	Printing, publishing of newspapers and periodicals
PA351	Photographic and document copying equipment	PA489	General printing and publishing
PA352	Watches and clocks	PA491	Rubber
PA353	Surgical instruments and appliances	PA492	Linoleum, plastics floor-covering, leathercloth, etc.
PA354	Scientific and industrial instruments and systems	PA493	Brushes and brooms
PA361	Electrical machinery	PA494.1	Toys, games and children's carriages
PA362	Insulated wires and cables	PA494.3	Sports equipment
PA363	Telegraph and telephone apparatus and equipment	PA495	Miscellaneous stationers' goods
PA364	Radio and electronic components	PA496	Plastics products
PA365.1	Gramophone records and tape recordings	PA499.1	Musical instruments
PA365.2	Broadcast receiving and sound reproducing equipment	PA499.2	Miscellaneous manufacturing industries
PA366	Electronic computers	PA500	Construction
PA367	Radio, radar and electronic capital goods	PA601	Gas
PA368	Electrical appliances primarily for domestic use	PA602	Electricity
		PA603	Water supply
		PA1002	Summary tables

PA461.1 REFRACTORY GOODS

The information in this report relates to establishments classified to the Refractory goods industry, minimum list heading 461.1 in the Standard Industrial Classification (revised 1968). The activities of the industry include:-

Manufacturing heat-resisting products such as ganister and silica bricks, fireclay and graphite crucibles, gas retort and kiln linings, steel moulders' composition and radiants for gas and electric fires.

In interpreting the data in the tables it is essential to bear in mind the notes and definitions which commence on page (iii).

Table No.	Title	Page
1	Output and costs, 1973-1977	2
2	Capital expenditure, 1973-1977	3
3	Stocks and work in progress, 1973-1977	3
4	Analysis of establishments by size, 1977	4-5
5	Regional distribution of employment, net capital expenditure, net output and gross value added at factor cost, 1977	6
6	Percentage analysis of twelve-month periods covered by returns received from United Kingdom establishments employing 20 or more persons, 1977	7
7	Percentage analysis of employees, by full and part-time employment and sex, 1977	7
8	Operating ratios, 1977	8

TABLE 1 Industry Reports, etc.

GOODS REFRATORY PA461.1

Output and costs, 1973-1977  
All United Kingdom establishments classified to the industry (a)

Unit	1973	1974	1975	1976	1977	
Enterprises	Number	116	119	120	116	118
Establishments	"	166	157	158	159	164
Sales of goods produced	£ thousand	96,822	125,610	150,460	188,509	227,981
Receipts for work done and industrial services rendered	(b)	(b)	(b)	3,239	2,904	
Capital goods produced for establishments' own use	"	229	136	213	461	545
Non-industrial services rendered	"	282	507	352	363	393
Goods merchanted or factored	"	4,801	7,658	6,670	7,345	7,658
<b>Total sales and work done (c)</b>	"	<b>102,134</b>	<b>133,911</b>	<b>157,695</b>	<b>199,916</b>	<b>239,480</b>
Increase during the year, work in progress and goods on hand for sale	"	223	2,606	3,908	2,826	8,594
<b>Gross output</b>	"	<b>102,357</b>	<b>136,517</b>	<b>161,604</b>	<b>202,742</b>	<b>248,075</b>
Purchases of materials for use in production, and packaging and fuel	"	42,778	66,972	73,995	93,686	124,057
Purchases of goods for merchenting or factoring	"	3,838	6,737	5,569	5,830	6,463
Increase during the year, stocks of materials, stores and fuel	"	1,480	4,392	5,850	5,965	9,864
Cost of industrial services received	"	3,988	2,448	3,080	3,660	4,536
<b>Net output</b>	"	<b>53,231</b>	<b>64,754</b>	<b>84,810</b>	<b>105,531</b>	<b>122,882</b>
Total employment (d)	Thousands	14.4	14.0	13.1	13.3	13.5
<b>Net output per head</b>	£	<b>3,704</b>	<b>4,620</b>	<b>6,451</b>	<b>7,921</b>	<b>9,133</b>
Payments for non-industrial services						
Hire of vehicles, plant and machinery	£ thousand	827	962	981	746	1,110
Rents of industrial and commercial buildings	(e)	(e)	(e)	505	609	
Commercial insurance premiums	"	479	508	657	823	1,038
Bank charges	"	93	134	143	77	106
Other non-industrial services	"	5,931	8,312	9,248	10,224	12,062
Licensing of motor vehicles	"	45	45	49	44	62
Rates, excluding water rates	"	822	1,114	1,367	1,496	1,792
<b>Gross value added at factor cost</b>	"	<b>45,034</b>	<b>53,679</b>	<b>72,365</b>	<b>91,617</b>	<b>106,103</b>
<b>Gross value added at factor cost per head</b>	£	<b>3,134</b>	<b>3,830</b>	<b>5,504</b>	<b>6,877</b>	<b>7,886</b>

- (a) Including estimates for establishments not making satisfactory returns, non-response and establishments with fewer than 20 persons. Satisfactory returns accounted for 85 per cent of employment within the industry.
- (b) Included in sales of goods produced.
- (c) Details of manufacturers' quarterly sales of principal products are published regularly in Business Monitor PQ461.1.
- (d) Average number employed, including full and part-time employees (see table 7) and working proprietors.
- (e) For 1973-1975 rents of industrial and commercial buildings were not recorded separately, but included in hire of vehicles, plant and machinery.

TABLE 2

PA461.1

Capital expenditure, 1973-1977  
All United Kingdom establishments classified to the industry (a)(b)

	1973	1974	1975	1976	1977
<b>Land and buildings</b>					
New building work	614	553	650	679	1,261
Land and existing buildings					
Acquisitions	234	207	113	78	877
Disposals	265	40	77	145	216
<b>Vehicles</b>					
Acquisitions	674	670	696	1,061	1,249
Disposals	224	204	193	190	303
<b>Plant and machinery</b>					
Acquisitions	4,165	3,434	4,127	6,959	10,019
Disposals	30	169	97	343	74
<b>Total net capital expenditure</b>	<b>5,168</b>	<b>4,451</b>	<b>5,219</b>	<b>8,099</b>	<b>12,812</b>

- (a) Including estimates for establishments not making satisfactory returns, non-response and establishments with fewer than 20 persons.
- (b) Capital expenditure in respect of manufacturing establishments where production had not commenced before the end of the year, is included.

TABLE 3

Stocks and work in progress, 1973-1977  
All United Kingdom establishments classified to the industry (a)

	1973	1974	1975	1976	1977
					Value at end of year
			Increase		
Materials, stores and fuel	1,480	4,392	5,850	5,965	9,864
Work in progress	385	679	306	901	678
Goods on hand for sale	-163	1,927	3,602	1,925	7,916
<b>Total</b>	<b>1,703</b>	<b>6,998</b>	<b>9,759</b>	<b>8,791</b>	<b>18,458</b>
					<b>69,938</b>

- (a) Including estimates for establishments not making satisfactory returns, non-response and establishments with fewer than 20 persons.

TABLE 4

Analysis of establishments by size, 1977  
All United Kingdom establishments classified to the industry (a)

Size group (b)	Estab-lish-ments	Enter-prises (c)	Employment			Wages and salaries (f)			
			Total (d)	Opera-tives	Others (e)	Operatives		Others (e)	
						Total	per head	Total	per head
Number	Number	Number	Number	Number	£ thousand	£	£ thousand	£	
1-10	67	60	329						
11-19	21	19	312						
20-49	26	23	868	2,304	654	7,426	3,223	2,452	3,749
50-99	19	15	1,504						
100-199	14	11	1,822	1,342	475	4,940	3,681	1,811	3,812
200-299	8	7	1,958	1,457	501	5,051	3,467	2,251	4,493
300-499	3	3	1,191	824	367	2,811	3,411	1,468	4,000
500 and over	6	5	5,471	3,849	1,622	13,334	3,467	5,757	3,549
<b>Total</b>	<b>164</b>	<b>118</b>	<b>13,455</b>	<b>9,776</b>	<b>3,619</b>	<b>33,562</b>	<b>3,433</b>	<b>13,738</b>	<b>3,796</b>

- (a) Including estimates for establishments not making satisfactory returns, non-response and establishments with fewer than 20 persons.
- (b) Average number employed, including full and part-time employees (see table 7) and working proprietors.
- (c) The sum of the figures for the size groups may exceed the total for the industry because some enterprises control establishments in more than one size group.
- (d) Including working proprietors.

PA461.1

TABLE 5

Regional distribution of employment, net capital expenditure, net output and gross value added at factor cost, 1977  
All United Kingdom establishments classified to the industry (a)

Total sales and work done (g)	Gross output (h)	Net output (i)	Gross value added at factor cost		Net capital expenditure (h)		Total stocks and work in progress at end of year
			Total	per head	Total	per head	
50,806	52,916	24,945	8,279	(j)	(j)	2,479	13,694
34,323	35,714	17,457	9,581	37,100(j)	7,673(j)	1,186	8,818
43,018	44,241	23,585	12,045	20,433	10,436	4,222	11,108
17,465	18,142	10,518	8,831	8,998	7,555	2,053	4,951
93,868	97,061	46,377	8,477	39,572	7,233	4,388	31,367
<b>239,480</b>	<b>248,075</b>	<b>122,882</b>	<b>9,133</b>	<b>106,103</b>	<b>7,886</b>	<b>12,812</b>	<b>69,938</b>

- (f) The cost of employers' contributions to national insurance, pensions and welfare schemes and the running costs of canteens, is estimated for the industry at £6,808 thousand.
- (g) Sales of goods produced, capital goods manufactured, buildings constructed by establishments for their own use, work done, industrial and non-industrial services rendered and merchanted goods.
- (h) New building work plus acquisitions less disposals of land and existing buildings, vehicles and plant and machinery.
- (i) Gross value added data relate to establishments employing 1-199.

TABLE 5

Regional distribution of employment, net capital expenditure, net output and gross value added at factor cost, 1977  
All United Kingdom establishments classified to the industry (a)

Area	Total employment (b)		Net capital expenditure (c)		Net output (d)	Gross value added at factor cost (d)	Gross value added at factor cost returned by establishments with 80 per cent or more of their employment in the region as a proportion of total gross value added at factor cost in the region
	Thousands	per cent of United Kingdom	£ thousand	per cent of United Kingdom			
Standard regions of England							
North	1.2	9.2	2,935	22.9	14,192	12,577	46.8
Yorkshire and Humberside	2.9	22.0	2,359	18.4	25,090	22,588	55.7
East Midlands	2.3	17.2	2,242	17.5	24,850	21,535	47.2
East Anglia	—	0.3	32	0.2	326	282	—
South East	0.5	3.8	349	2.7	4,896	4,000	80.8
South West	*	*	*	*	*	*	*
West Midlands	2.2	16.3	1,368	10.7	16,207	13,711	74.9
North West	0.8	6.1	758	5.9	8,775	7,884	86.5
England	*	*	*	*	*	*	/
Wales	0.6	4.1	192	1.5	5,812	5,108	73.5
Scotland	2.7	20.4	2,497	19.5	21,901	18,198	97.7
Great Britain	*	*	*	*	*	*	/
Northern Ireland	*	*	*	*	*	*	*
United Kingdom	13.5	100.0	12,812	100.0	122,822	106,103	/

- (a) Including estimates for establishments not making satisfactory returns, non-response and establishments with fewer than 20 persons.
- (b) Average number employed, including full and part-time employees (see table 7) and working proprietors.
- (c) New building work plus acquisitions less disposals of land and existing buildings, vehicles and plant and machinery.
- (d) Where a census return covered addresses in two or more regions, an estimate of the net output attributable to each address was made by assuming that net output was proportionate to employment. An estimate for each region was obtained by aggregating estimates of net output for addresses located in that region. Gross value added at factor cost is treated similarly.

(i) Gross value added data relate to establishments employing 10 or more persons.  
 (ii) New building work plus acquisitions less disposals of land and existing buildings, vehicles and plant and machinery.  
 (iii) The sum of the figures for the size groups may exceed the total for the industry because some establishments are classified in more than one size group.  
 (iv) Sales of goods produced, capital goods manufactured, buildings constructed by establishments for their own work, work done on premises, work done on contract and work done on order for the industry.  
 (v) Figures for the industry are in thousands.

TABLE 6

Percentage analysis of twelve-month periods covered by returns received from United Kingdom establishments employing 20 or more persons, 1977

Accounting year ended	Percentage of total returns received		Percentage of total number employed	
	per cent	per cent	per cent	per cent
1977 April (a)	1.8		0.3	
May	0.0		0.0	
June	3.5		0.9	
July	0.0		0.0	
August	3.5		0.6	
September	0.0		0.0	
October	3.5		1.8	
November	0.0		0.0	
December	52.6		74.4	
1978 January	0.0		0.0	
February	1.8		0.2	
March (b)	33.3		21.8	

- (a) From 6th April.
- (b) Including returns made for twelve-month period ended 1st to 5th April 1978.

TABLE 7

Percentage analysis of employees, by full and part-time employment and sex, 1977(a)  
Bricks, fireclay and refractory goods industries, minimum list heading 461

Sex	Full-time		Part-time		All employees
	per cent	per cent	per cent	per cent	
Male	89		1		90
Female	7		2		10

**Industrial classification**  
The United Kingdom Standard Industrial Classification (SIC) was introduced in 1968. The percentages relate to the numbers employed (excluding working proprietors) in the United Kingdom in minimum list heading 461 at mid-June, 1976 because 1977 information is not yet available. In the 1977 Census of Production the employment of the Refractory goods industry represented 34 per cent of the employment of minimum list heading 461 as a whole.

**Statistical units**  
The statistical unit for the purpose of the Census is the establishment which is defined in the SIC as the smallest unit which can provide the information normally required for an economic census, for example, employment, expenses, turnover, capital formation, etc. It is the smallest unit which can be identified by a single address in a single address in a single factory, including those establishments which are carried on at a number of addresses. Where this is so, businesses are asked to provide the full range of separate information in respect of each address, whether or not the activities are different. Their activities may, however, be integrated to such an extent that they constitute a single establishment. In the latter case the establishment is defined to cover the combined activities at these addresses (termed local units). Separate estimates of gross value added at factor cost, capital expenditure at factor cost and employment are provided for each local unit. Efforts are made by the Business Statistics Office (BSO) to ensure, by negotiating with the business, that the statistical unit covered by the return does not cover local units or addresses in more than one of the countries of the United Kingdom.

Further information on the statistical unit covered by an article "The Statistical Unit in Business Inquiries" in Statistical News No 13 May 1971.

Establishments are asked to exclude from their returns particular activities which are carried on at a number of addresses. These are: transport warehousing, for which they keep a separate set of accounts; transfers of goods produced to such departments as are engaged in the production of other goods; and other activities which are carried on at a number of addresses. Where more than one of these activities are carried on at a number of addresses, the information in respect of the head office was reported separately.

For certain purposes in the enterprise analysis of Business Monitor (1977) establishments are combined. For these purposes an enterprise may be defined as a business consisting of either a single establishment or a number of establishments which are carried on at a number of addresses. For the purpose of ensuring that the information obtained from the enterprise analysis is comparable with the information obtained from the Census of Production, the enterprise analysis is based on the same geographical areas as the Census of Production. The information obtained from many sources, including the Quarterly Business Monitor, is used to supplement the information supplied by the establishments.

Source: Department of Employment

TABLE 8

Operating ratios, 1977  
All United Kingdom establishments classified to the industry (a)

Percentage of total number employed	Unit		1977	
	(b) Thousands	(c) per cent of United Kingdom	(d) £ thousand	(e) percentage
Gross output per head	8.1	£	18,437	
Net output per head	0.0	£	9,133	
Gross value added per head	8.8	£	7,886	
Gross value added as a percentage of gross output	0.0	%	43	
Ratio of gross output to stocks	0.0		3.5	
Wages and salaries as a percentage of gross value added	18.4	%	45	
Ratio of operatives to administrative, technical and clerical employees	17.5		2.7	
Wages and salaries per operative	0.0	£	3,433	
Wages and salaries per administrative, technical and clerical employee	10.7	£	3,796	
Net capital expenditure per head		£	952	
Net capital expenditure as a percentage of gross value added		%	12	

(a) Including estimates for establishments not making satisfactory returns, non-response and establishments employing fewer than 20 persons.

Percentage of total number employed	Unit		1977	
	(b) Thousands	(c) per cent of United Kingdom	(d) £ thousand	(e) percentage
Gross output per head	8.1	£	18,437	
Net output per head	0.0	£	9,133	
Gross value added per head	8.8	£	7,886	
Gross value added as a percentage of gross output	0.0	%	43	
Ratio of gross output to stocks	0.0		3.5	
Wages and salaries as a percentage of gross value added	18.4	%	45	
Ratio of operatives to administrative, technical and clerical employees	17.5		2.7	
Wages and salaries per operative	0.0	£	3,433	
Wages and salaries per administrative, technical and clerical employee	10.7	£	3,796	
Net capital expenditure per head		£	952	
Net capital expenditure as a percentage of gross value added		%	12	

Source: Department of Employment

(a) The percentages relate to the numbers employed (excluding working proprietors) in the United Kingdom in minimum list heading 481 at mid-June, 1978 because 1977 information is not available. In the 1977 Census of Production the employment of the Refractory goods industry represented 34 per cent of the employment of minimum list heading 481 as a whole.

TABLE 8  
PA461.1

Notes

These notes give the main information needed for interpreting the figures in the industry Business Monitors: more detailed information about the census is given in a separate Business Monitor - PA 1001 (Introductory Notes) of the Report on the Census of Production, 1977.

## GENERAL INFORMATION

## Changes made for 1977

The Census for 1977 is in line with similar inquiries being conducted in other member countries of the European Economic Communities. There was a small number of changes in the scope of the industry reports compared with 1976. For the first time in the industry monitors a table has been included on operating ratios, calculated from census measures of output, investment, manpower and labour costs.

Specific changes are explained in the introductions to the industry reports or by footnotes to the tables.

Suppression of information relating to individual undertakings Section 9(5)(b) of the Statistics of Trade Act 1947 states - "The following provisions shall have effect with respect to any report, summary or other communication to the public of information obtained under the foregoing provisions of this Act - in compiling any such report, summary or communication the competent authority shall so arrange it as to prevent any particulars published therein from being identified as being particulars relating to any individual person or undertaking except with the previous consent in writing of that person or the person carrying on that undertaking, as the case may be; but this provision shall not prevent the disclosure of the total quantity or value of any articles produced, sold or delivered; so, however, that before disclosing any such total the competent authority shall have regard to any representations made to them by any person who alleges that the disclosure thereof would enable particulars relating to him or to an undertaking carried on by him to be deduced from the total disclosed".

If a figure involved disclosure the contributor concerned was sometimes asked to give permission for its publication. In the majority of cases permission was given. When it was refused and where contributors were not approached the figure has been suppressed, either by combining it with other figures, or as in the regional tables, by omitting the figure altogether.

## Symbols used

The following symbols are used throughout the PA series of Business Monitors:

- .. not available
- nil or less than half the final digit shown
- \* figures cannot be shown owing to the risk of disclosing information about individual enterprises.
- R revised

## Rounding of figures

Figures in the tables have, where necessary, been rounded to the nearest final digit. Where figures have been so rounded, the sum of the constituent items may not always agree exactly with the total shown.

## Industrial classification

The United Kingdom Standard Industrial Classification (SIC) was first issued in 1948 and was subsequently revised in 1958 and 1968. It exists to promote uniformity and comparability in the official statistics of the United Kingdom. The general principles followed are those of the International Standard Industrial Classification of all Economic Activities of the United Nations Statistical Office but the United Kingdom SIC reflects the organisation and structure of industry and trade as it exists in the United Kingdom. The SIC is a classification by activity and is not a commodity classification. However, an index of all commodity headings for which sales data are provided in the Quarterly Business Monitors, is published in Business Monitor PQ 1000.

## Statistical units

The statistical unit for the purpose of the Census is the establishment which is defined in the SIC as the smallest unit which can provide the information normally required for an economic census, for

example, employment, expenses, turnover, capital formation. Usually the principal activities carried on in an establishment fall within a single heading of the classification (eg steel making or sugar refining). Typically the establishment embraces all the activities carried on at a single address eg a mine or a factory, including those which are ancillary to the principal activities. Frequently distinct activities characteristic of different industries are carried on at one address, but normally these are not classified separately and the whole establishment is classified according to the main activity. If, however, the required range of data can be provided for each activity, each is taken to constitute a separate establishment. Sometimes activities which are conducted as a single business are carried on at a number of addresses. Where this is so, businesses are asked to provide the full range of separate information in respect of each address, whether or not the activities are different. Their activities may, however, be integrated to such an extent that they constitute a single establishment. In the latter case the establishment is defined to cover the combined activities at these addresses (termed local units). Separate figures are obtained of employment and net capital expenditure at each unit in order to compile regional tables. Efforts are made by the Business Statistics Office (BSO) to ensure, by negotiating with respondents, that the return from an establishment does not cover local units or addresses in more than one of the countries of the United Kingdom.

Further information about the statistical unit appeared in an article "The statistical unit in business inquiries" in Statistical News No 13 May 1971.

Establishments are asked to exclude from their returns particulars relating to any department not engaged in production eg merchandising, transport, warehousing, for which they keep a separate set of accounts. Transfers of goods produced to such departments are treated as sales and respondents are asked to value them as far as possible as if sold to an independent purchaser. Where separate accounts are not kept they are asked to include details of all these activities in their return.

Particulars relating to head offices mainly engaged in the administration of the production units within the scope of the census were included. Where more than one return was made the information in respect of the head office was apportioned among them.

For certain purposes in the annual censuses of production (especially the enterprise analyses of Business Monitor PA 1002) related establishments are combined. For these purposes an enterprise group may be defined as a business consisting of either a single establishment or two or more establishments under common ownership or control. Bringing together establishments into enterprise groups is also necessary for the purpose of ensuring that there will be no disclosure of the activities of any one enterprise group. Information about the relationship of establishments, the changing structure of groups of companies and about common ownership links is obtained from many sources, including the Stock Exchange Year Book, company reports, press reports and information supplied by individual establishments.

## THE REGISTER

The register permits a questionnaire to be sent direct to the reporting establishment on which the latter can include information relating to all the manufacturing (or local) units which it comprises. The inquiries provide a major source of information for keeping the register continuously up-to-date and act as a check on its detail and structure. For the establishments on the register making returns to the quarterly inquiries, the industrial classification is derived from an analysis of their sales of commodities and is reviewed annually. Employment data are entered on the register from returns to the annual census of production. In cases where an establishment does not make a return to these inquiries the employment data are based on information provided by the Department of Employment from the annual censuses of employment. New additions to the register are obtained from various sources including Companies Registration Office and the Department of Employment. The 1973 Finance Act allows HM Customs and Excise to pass to the BSO lists of businesses registered for VAT. Information from all these sources is used to improve the register, and where necessary, details are sought directly from new businesses. Units which cease to trade are removed from the live register.

Increasing use of the information obtained from the Department of Employment, HM Customs and Excise and BSO inquiries has led to improvements on the register, which in turn enabled the BSO to produce better estimates, particularly of numbers of smaller establishments and enterprises.

#### Coverage

A return was required in the 1977 Census from each establishment with 20 or more employees. Each establishment is classified to an industry, as defined in the SIC, whose principal products form the major part of the establishment's sales.

#### Regions

The regions defined in Table 5 take account of the boundary changes arising out of the Local Government Act 1972 and the Local Government Act (Scotland) 1973. These changes came into effect in April 1974 in England and Wales and May 1975 in Scotland.

#### TERMS USED IN THE CENSUS REPORT

##### Average number employed

Establishments were required to state the number of persons on the payroll on average during the year of return, whether full-time or part-time employees. Separate figures were required for:

- (a) administrative, technical and clerical employees
- (b) all other employees (operatives)

Averages could be calculated from the figures relating to the last week of each calendar month. Establishments were also required to state the number of working proprietors where appropriate and these are included in total employment figures. Outworkers (ie persons employed by establishments who worked in their own homes etc on materials supplied by the establishment) are excluded. The figures include persons engaged on 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 wage or salary; but such persons who worked less than half the normal number of working hours are excluded. Directors working in the business but not in receipt of a definite wage, salary or commission are included under this heading: directors paid by fee only are not included.

##### Employees

Administrative, technical and clerical employees include directors in receipt of a definite wage, salary or commission, managers and works foremen; research and design employees (other than operatives); draughtsmen, editorial staff, advertising staff, travellers and all office employees.

Operatives include all other classes of employees, that is, broadly speaking, all manual wage earners. They include operatives employed in power stations, transport (including roundsmen), warehouses, stores, shops and canteens, inspectors, maintenance workers and cleaners. Operatives engaged in outside work of erecting, fitting etc are also included, but outworkers are excluded.

##### Capital expenditure

Capital expenditure during the year in respect of manufacturing units where production had not started before the end of the year is included. Establishments were asked not to deduct from the value of capital expenditure amounts received or expected to be received in grants or allowances from the Government or any statutory body or local authority. Establishments with 100 or more employees were asked to include a total net capital expenditure figure for each calendar year.

##### (a) New building work

This represents the cost incurred during the year of new building and other constructional work to be used in connection with the business covered by the return. The value is that charged to capital account during the year of return; it includes expenditure on new buildings and on the extension or reconstruction of old buildings, the value of works of a capital nature carried out by the establishment's own staff and the cost of any newly constructed buildings purchased. Figures shown include legal charges, stamp duties, agents' commissions, etc.

##### (b) 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 assets acquired in taking over an existing business), and the amounts receivable for freeholds or leaseholds disposed of. The value is that charged to capital account during the year of return.

##### (c) 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. Deductible value added tax is excluded but non-deductible value added tax on motor cars acquired is included. No deduction is made for depreciation, amortization or obsolescence. The proceeds of items disposed of during the year exclude amounts written-off for items scrapped.

##### Cost of industrial services

This includes amounts payable to other firms for work done on materials supplied by the establishment, payments for repairs and maintenance (including those in respect of rented buildings) and amounts paid to other firms for contracts which have been sublet. Payments to outworkers are excluded.

##### Cost of non-industrial services

This includes rents of industrial and commercial buildings, hire of plant, machinery and vehicles (excluding vehicles hired with drivers), commercial insurance premiums, bank charges and amounts paid for professional services, post office services, transport (within the United Kingdom), advertising etc. Amounts payable on royalties for the right to use patents, trademarks, copyrights etc, manufacturing and quarrying rights and technical "know-how" are also included.

##### Gross output

In the calculation of gross output the value of total sales and work done is increased by the rise (or reduced by the fall) during the year in the value of work in progress and goods on hand for sale.

##### Net output

Net output, a customary census measure, is calculated by deducting from gross output the cost of purchases (reduced by the rise, or increased by the fall, during the year of stocks of materials etc) and the cost of industrial services received, and where applicable, duties etc.

##### Net output per head

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

##### Gross value added at factor cost

Gross value added at factor cost is calculated by deducting from net output the cost of non-industrial services eg rent of buildings, hire of plant, machinery and vehicles (excluding vehicles hired with drivers), commercial insurance premiums, bank charges and amounts paid for professional services, post office services, transport (within the United Kingdom) and advertising, rates (excluding water rates) and the cost of licensing motor vehicles. This estimate of gross value added approaches more closely than census net output to the definition of net output or value added in national accounts statistics.

##### Gross value added at factor cost per head

The figures of gross value added at factor cost per head are derived by dividing the gross value added by the average number of persons employed (full and part-time) on all activities covered by the returns, including operatives, administrative, technical and clerical employees and working proprietors, but excluding outworkers.

##### Purchases

Purchases include the cost of raw materials, components, semi-manufactured goods and workshop materials; of replacement parts and consumable tools not charged to capital account; of packaging materials of all types; of stationery and printed matter; of fuel, electricity and water; of materials to be used by the establishment or given out to other establishments for the production of machinery or other capital items for the establishment's own use; of materials for use by the establishment when working on goods supplied by

customers; and of food, etc for any canteen covered by the establishment's return. Transfers of goods to the establishment from another department of the same firm not covered by the establishment's return are included at a cost corresponding to the estimated selling value recorded by the other department. Amounts payable to transport firms or credited to the firm's own transport department for delivery of materials are excluded, as are all purchases of machinery and plant charged to capital account. Purchases of goods for merchandising or factoring have been collected separately since 1973. The values shown exclude VAT. They include, in addition to the actual purchase price, the value of packaging material charged to the establishment. The value of returned goods or packaging material returned to suppliers and any trade discounts are excluded. Materials purchased duty-paid are included at their duty-paid value, less any drawback, rebate, etc. The cost of transport is included only if it is included with the purchase price in the firm's accounts. Imported goods are included at their full delivered cost. If in the firm's accounts the transport from docks or airport is not included in the cost of goods purchased, the cost is entered at cif plus duty (if applicable). Leasing, renting and hire purchase charges are excluded.

##### Sales of goods produced

Sales for the purposes of the annual censuses means deliveries on sale of goods made by establishments in the United Kingdom covered by the inquiry. Sales of goods made for these establishments by outworkers or by other establishments from materials given out to them and sales of waste products are included. New building work and machinery or other capital items produced by establishments for hiring out or leasing are included as sales, the value included in the return being that adopted in the establishments' capital asset accounts. Forward sales and canteen takings are excluded. All sales in the period of the inquiry are included irrespective of when the goods were manufactured. Goods produced in one establishment and transferred either to ancillary departments not engaged in production for which there are separate accounts, or to another establishment of the same firm not covered by the return, are treated as sales by the producing establishment 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 are kept are valued on the same basis. The value shown for sales in the "net selling value" defined as the amount (excluding VAT) charged to customers whether on an ex-works or delivered basis, after any trade discounts and agents' commissions have been deducted. The cost of packing materials less allowance for returnable cases is included. In industries where products attract Excise Duty the value stated is usually inclusive of duty if sold duty-paid and exclusive of duty if sold in bond or exported.

##### Receipts for work done and industrial services rendered

Figures for work done represent the amount charged for work carried out on materials supplied by a customer and include repair work. Within certain industries this heading covers a wide variety of activities, for example, within the food sector - butter packed on commission; within the textile industries - making up of garments, fur dressing and textile finishing; within printing and publishing - preparatory work on type-setting, block making and binding. Work done is also significant in the electrical machinery and heavy engineering industries, covering erection, installation and repair and jobbing work. Other activities within this heading include exploration work, research and development, glass cutting and dressing and planing of timber. Industrial services rendered include repairs and maintenance, installation work, and technical research and studies for other organisations.

##### Capital goods produced for establishments' own use

This includes all work of a capital nature carried out during the year by the establishments' own staff for their own use.

##### Non-industrial services rendered

This includes rents received for commercial and industrial buildings, amounts charged for hiring out plant, machinery and vehicles and other goods and amounts charged to other organisations for the provision of transport. It also includes amounts received for the right to use patents, trademarks, copyrights etc, manufacturing and quarrying rights and technical "know-how" and revenue from such staff facilities as canteens.

##### Goods merchanted or factored

Merchanted goods are those (excluding canteen sales) sold without

having been subjected to any manufacturing process by the seller.

##### Stocks and work in progress

Values are given of stocks of goods on hand for sale and of materials, stores and fuel, at the end of the year of return and of the change during the year, including any stocks of goods held for merchandising or factoring. Work in progress is defined as materials which have been partially processed by the establishment but which are not usually sold or transferred to another establishment without further processing. The values include the cost of materials consumed and labour used, together with a margin of overhead costs and profits. Progress payments made to sub-contractors are excluded and progress payments received from other organisations are not deducted.

##### Wages and salaries

These are 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. The values shown include all overtime payments, bonuses, commissions and holiday pay, whether paid regularly or not, and no deduction is made for income tax, insurances, contributory pensions etc. The value of redundancy payments less any amounts reimbursed from Government sources is included. The value of any payments in kind, travelling expenses etc is excluded.

##### Remuneration paid to outworkers

The remuneration paid to outworkers (ie persons employed by the establishment who do their work in their own homes) is generally on a piece-work basis. Only amounts paid to outworkers whose names appear on the establishment's payroll are included. Amounts paid to outworkers by sub-contractors are excluded.

##### Employers' insurance and welfare contributions

This item includes employers' contributions to national insurance (and/or earnings related basic contributions under the Social Security Pensions Act, 1975) and commercial insurance premiums to provide pensions, superannuation or other retirement benefits, sickness benefits, personal accident benefits, disability or death benefits for employees or former employees or their dependants. Contributions to the running costs of canteens, social centres, children's and holiday homes, etc for employees, former employees and their dependants are also included.

##### Operating ratios

The operating ratios shown were obtained by dividing the estimate of the industry total for the quantity shown in the numerator by the corresponding estimate for the quantity shown in the denominator. These estimates cover all establishments classified to the industry, including exempted establishments and non-respondents. Within an industry, it is possible to compare ratios for an individual firm with the ratios shown for the relevant industry. However, it is important to bear in mind that various factors may affect the results - for example, differences in definitions, treatment of depreciation (which is not identified in the census data) and varying practise with regard to stock valuation, may affect comparability in some respects.



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