

PA349.2

Business Statistics Office

# Business Monitor

## Report on the Census of Production

## Precision chains and other mechanical engineering

1978

DS/42(MAS)

②  $\frac{42}{R834}$

PA349.1 Ball, roller, plain and other bearings

BRITISH LIBRARY  
5 DEC 1980  
OF POLITICAL AND  
ECONOMIC SCIENCE

HMSO



A publication of the Government Statistical Service

#### 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. Business Monitors have a code P (for production) followed first by A (indicating that it is an annual series) or O (occasional) 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

# PA349.2 Business Monitor

A publication of the Government Statistical Service

## Report on the Census of Production 1978

## Precision chains and other mechanical engineering

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

## List of Industry Reports, etc.

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

## PA349.2 PRECISION CHAINS AND OTHER MECHANICAL ENGINEERING

PA349.2

The information in this report relates to establishments classified to the Precision chains and other mechanical engineering industry, minimum list headings 349.2 and 3 in the Standard Industrial Classification (revised 1968). The activities of the industry include:—

Manufacturing transmission and other precision chains including transmission chains for motor vehicles and cycles, and the undertaking by establishments of general sub-contract or repair work.

Establishments manufacturing mechanical engineering products (including machinery parts) not elsewhere specified, or of such a mixed character that they cannot be allocated elsewhere among the mechanical engineering group of industries (Order VII) are included.

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

## LIST OF CONTENTS

Table No	Title	Page
1	Output and costs, 1974–1978	2
2	Capital expenditure, 1974–1978	3
3	Stocks and work in progress, 1974–1978	3
4	Analysis of establishments by size, 1978	4–5
5	Regional distribution of employment, net capital expenditure, net output and gross value added at factor cost, 1978	6
6	Percentage analysis of twelve-month periods covered by returns received from United Kingdom establishments, 1978	7
7	Percentage analysis of employees, by full and part-time employment and sex, 1977	7
8	Operating ratios, 1977–1978	8

TABLE 1

PA349.2

Output and costs, 1974-1978  
All United Kingdom establishments classified to the industry (a)

	Unit	1974	1975	1976	1977	1978
Enterprises	Number	5,390	5,519	5,774	5,840	5,609
Establishments	"	5,577	5,694	5,955	6,031	5,803
Sales of goods produced	£ thousand	762,851	870,958	941,379	1,065,212	1,172,662
Receipts for work done and industrial services rendered	"	(b)	(b)	61,232	101,064	135,232
Capital goods produced for establishments' own use	"	1,086	1,293	1,186	1,098	1,240
Non-industrial services rendered	"	3,097	3,479	3,501	2,886	2,696
Goods merchanted or factored	"	29,841	31,772	41,009	58,167	79,779
<b>Total sales and work done (c)</b>	"	<b>796,876</b>	<b>907,502</b>	<b>1,048,307</b>	<b>1,228,426</b>	<b>1,391,609</b>
Increase during the year, work in progress and goods on hand for sale	"	29,158	15,069	21,510	28,906	21,625
<b>Gross output</b>	"	<b>826,034</b>	<b>922,571</b>	<b>1,069,816</b>	<b>1,257,333</b>	<b>1,413,234</b>
Purchases of materials for use in production, and packaging and fuel	"	306,009	315,333	389,397	446,448	488,415
Purchases of goods for merchenting or factoring	"	25,428	26,180	31,443	45,673	64,182
Increase during the year, stocks of materials, stores and fuel	"	15,760	3,265	10,096	12,322	12,803
Cost of industrial services received	"	30,139	36,648	38,588	48,839	55,911
<b>Net output</b>	"	<b>480,218</b>	<b>547,676</b>	<b>620,485</b>	<b>728,695</b>	<b>817,529</b>
Total employment (d)	Thousands	138.0	129.2	129.2	128.3	122.2
<b>Net output per head</b>	£	<b>3,480</b>	<b>4,240</b>	<b>4,803</b>	<b>5,678</b>	<b>6,692</b>
Payments for non-industrial services						
Hire of vehicles, plant and machinery	£ thousand	9,076	9,066	3,599	5,102	6,919
Rents of industrial and commercial buildings	"	(e)	(e)	5,179	7,138	7,126
Commercial insurance premiums	"	4,042	5,262	6,700	7,687	9,438
Bank charges	"	716	735	961	1,191	1,379
Other non-industrial services	"	19,876	22,504	36,383	40,503	47,820
Licensing of motor vehicles	"	291	265	455	584	540
Rates, excluding water rates	"	7,346	8,508	10,570	11,825	12,697
<b>Gross value added at factor cost</b>	"	<b>438,871</b>	<b>501,335</b>	<b>556,637</b>	<b>654,665</b>	<b>731,609</b>
<b>Gross value added at factor cost per head</b>	£	<b>3,180</b>	<b>3,882</b>	<b>4,309</b>	<b>5,101</b>	<b>5,989</b>

(a) Including estimates for establishments not making satisfactory returns, non-response and establishments not selected for the Census. Satisfactory returns accounted for 54 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 PQ349.2.

(d) Average number employed, including full and part-time employees (see table 7) and working proprietors.

(e) For 1974 and 1975 rents of industrial and commercial buildings were not recorded separately, but included in hire of vehicles, plant and machinery.

TABLE 2

PA349.2

Capital expenditure, 1974-1978  
All United Kingdom establishments classified to the industry (a)(b)

	£ thousand					
	1974	1975	1976	1977	1978	
Land and buildings						
New building work	5,311	3,641	4,126	6,262	10,329	
Land and existing buildings						
Acquisitions	1,659	1,185	1,781	3,097	7,622	
Disposals	1,566	468	551	457	1,512	
Vehicles						
Acquisitions	5,537	4,790	8,091	10,996	13,969	
Disposals	1,554	1,620	2,581	3,247	4,889	
Plant and machinery						
Acquisitions	29,651	31,798	36,720	51,305	69,969	
Disposals	2,479	2,817	3,013	4,208	4,891	
<b>Total net capital expenditure</b>	<b>36,559</b>	<b>36,509</b>	<b>44,575</b>	<b>63,748</b>	<b>90,597</b>	

(a) Including estimates for establishments not making satisfactory returns, non-response and establishments not selected for the Census.

(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, 1974-1978  
All United Kingdom establishments classified to the industry (a)

	£ thousand					
	1974	1975	1976	1977	* 1978	
	Increase					Value at end of year
Materials, stores and fuel	15,760	3,265	10,096	12,322	12,803	96,482
Work in progress	22,757	6,905	13,841	19,742	13,763	123,906
Goods on hand for sale	6,401	8,164	7,669	9,165	7,863	64,427
<b>Total</b>	<b>44,918</b>	<b>18,334</b>	<b>31,606</b>	<b>41,228</b>	<b>34,428</b>	<b>284,815</b>

(a) Including estimates for establishments not making satisfactory returns, non-response and establishments not selected for the Census.

TABLE 4

Analysis of establishments by size, 1978  
All United Kingdom establishments classified to the industry (a)

Size group (b)	Estab-lish-ments (c)	Enter-prises (c)	Employment			Wages and salaries (f)			
			Total (d)	Opera-tives	Others (e)	Operatives		Others (e)	
						Total	per head	Total	per head
1-10	3,723	3,685	17,398						
11-19	1,015	1,006	14,730						
20-49	709	701	21,155	48,458	13,261	161,802	3,339	54,843	4,136
50-99	197	193	13,239						
100-199	91	86	12,200	9,082	3,099	34,817	3,834	13,401	4,324
200-299	24	24	5,610	4,009	1,600	14,167	3,534	6,441	4,026
300-399	11	11	3,737	2,604	1,133	9,687	3,720	4,808	4,244
400-499	12	10	5,329	3,724	1,603	15,040	4,039	7,141	4,455
500-749	10	9	5,676	3,395	2,281	12,751	3,756	10,121	4,437
750-999	4	3	3,536	2,244	1,292	7,385	3,291	5,088	3,938
1,000-2,499	3	3	4,737	3,094	1,643	10,683	3,453	6,258	3,809
2,500 and over	4	3	14,817	10,920	3,897	36,775	3,368	16,010	4,108
<b>Total</b>	<b>5,803</b>	<b>5,609</b>	<b>122,164</b>	<b>87,530</b>	<b>29,809</b>	<b>303,108</b>	<b>3,463</b>	<b>124,112</b>	<b>4,164</b>

- (a) Including estimates for establishments not making satisfactory returns, non-response and establishments not selected for the Census.  
 (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.  
 (e) Administrative, technical and clerical employees.

PA349.2

PA349.2

Total sales and work done (g)	Gross output	Net output	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
£ thousand	£ thousand	£ thousand	£	£ thousand	£	£ thousand		
741,824	751,010	440,387	6,620	(j)	(j)	57,007		
146,907	149,035	87,203	7,148	473,696(j)	6,017(j)	7,978		
63,247	64,643	39,931	7,118	35,394	6,309	3,464		
48,770	49,646	23,564	6,306	21,191	5,671	2,072		
83,439	84,411	42,637	8,001	37,033	6,949	5,576		
78,037	79,352	42,949	7,567	38,184	6,727	1,980		
43,592	46,742	25,582	7,235	22,521	6,369	1,645		
50,099	50,761	29,371	6,200	25,813	5,449	1,577		
135,693	137,633	85,905	5,798	77,777	5,249	9,298		
<b>1,391,609</b>	<b>1,413,234</b>	<b>817,529</b>	<b>6,692</b>	<b>731,609</b>	<b>5,989</b>	<b>90,597</b>		
						<b>284,815</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 £ 74,438 thousand. The remuneration of outworkers on returns received was £68 thousand.  
 (g) Sales of goods produced, capital goods manufactured and buildings constructed by establishments for their own use, work done, industrial and non-industrial services rendered and merchant goods.  
 (h) New building work plus acquisitions less disposals of land and existing buildings, vehicles and plant and machinery.  
 (j) Gross value added data relate to establishments employing 1-199.

TABLE 5

PA349.2

Regional distribution of employment, net capital expenditure, net output and gross value added at factor cost, 1978  
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	£ thousand	£ thousand		
Standard regions of England								
North	7.9	6.5	5,252	5.8	54,328	48,970	63.1	
Yorkshire and Humberside	15.7	12.8	10,789	11.9	97,246	88,551	51.3	
East Midlands	6.5	5.3	5,190	5.7	44,200	39,849	39.6	
East Anglia	2.1	1.7	1,651	1.8	15,069	13,690	36.5	
South East	36.2	29.6	29,976	33.1	250,848	222,944	39.4	
South West	9.9	8.1	7,782	8.6	70,252	62,097	37.2	
West Midlands	18.0	14.7	12,877	14.2	118,453	106,133	47.1	
North West	14.8	12.1	9,065	10.0	93,980	83,957	41.9	
England	111.0	90.9	82,580	91.2	744,375	666,192	/	
Wales	4.7	3.8	2,764	3.0	29,068	25,767	37.8	
Scotland	5.4	4.4	4,523	5.0	37,761	34,043	47.5	
Great Britain	121.1	99.2	89,867	99.2	811,205	726,001	/	
Northern Ireland	1.0	0.8	730	0.8	6,324	5,608	51.8	
United Kingdom	122.2	100.0	90,597	100.0	817,529	731,609	/	

(a) Including estimates for establishments not making satisfactory returns, non-response and establishments not selected for the Census.

(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.

TABLE 6

PA349.2

Percentage analysis of twelve-month periods covered by returns received from United Kingdom establishments, 1978

Accounting year ended	Percentage of total returns received		Percentage of total number employed	
	per cent		per cent	
1978 April (a)	2.7		1.2	
May	2.9		1.3	
June	5.5		5.7	
July	3.8		3.6	
August	4.4		2.0	
September	8.6		21.2	
October	3.8		6.4	
November	3.6		2.0	
December	34.6		24.8	
1979 January	2.7		1.1	
February	1.6		1.1	
March (b)	25.9		29.8	

(a) From 6th April.

(b) Including returns made for twelve-month period ended 1st to 5th April 1979.

TABLE 7

Percentage analysis of employees, by full and part-time employment and sex, 1977(a)  
General mechanical engineering industries, minimum list heading 349

Sex	Full-time		Part-time		All employees	
	per cent		per cent		per cent	
Male	80		2		82	
Female	14		4		18	

Source: Department of Employment

(a) The percentages relate to the numbers employed (excluding working proprietors) in the United Kingdom in minimum list heading 349, at mid-June, 1977. In the 1977 Census of Production the employment of the Precision chains and other mechanical engineering industry represented 80 per cent of the employment of minimum list heading 349 as a whole.

TABLE 8

PA349.2

Operating ratios, 1977-1978  
All United Kingdom establishments classified to the industry (a)

	Unit	1977	1978
Gross output per head	£	9,797	11,568
Net output per head	£	5,678	6,692
Gross value added per head	£	5,101	5,989
Gross value added as a percentage of gross output	%	52	52
Ratio of gross output to stocks		4.7	5.0
Wages and salaries as a percentage of gross value added	%	62	58
Ratio of operatives to administrative, technical and clerical employees		3.1	2.9
Wages and salaries per administrative, technical and clerical employee	£	3,703	4,164
Wages and salaries per operative	£	3,134	3,463
Net capital expenditure per head	£	497	742
Net capital expenditure as a percentage of gross value added	%	10	12

(a) Including estimates for establishments not making satisfactory returns, non-response and establishments not selected for the Census.

Produced in Wales by Her Majesty's Stationery Office  
Reprographic Unit, Cardiff  
Dd. 699517 K6 Cdf 423 9/80

## 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, 1978.

## GENERAL INFORMATION

## Changes made for 1978

The Census for 1978 is in line with similar inquiries being conducted in other member countries of the European Economic Communities.

The census differed from earlier censuses in three respects. Sampling was introduced for establishments employing 20 to 49 and a sample of smaller units was selected. A new question on the leasing of capital assets was included for 1978 only. This will provide register information for use in related inquiries into leasing.

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 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 in more than one of the countries of the United Kingdom.

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. An enterprise group is 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 the Department of Employment and HM Customs and Excise. The 1973 Finance Act allows the latter to pass lists of businesses registered for VAT to the BSO. Where necessary details are sought directly from new businesses. Units which cease to trade are removed from the live register.

## Coverage

In recent censuses returns have been required from all establishments employing 20 or more. For the 1978 Census in 68 selected manufacturing industries coverage of establishments in the 20 to 49 employment size band has been reduced to a 1 in 2 sample. This change has relieved some 5,800 firms of the need to complete a census return. The Census has included for the first time a small sample (around 10 per cent) of units employing 11 to 19 to meet an EEC requirement to collect a limited range of data from smaller units every 5 years.

## 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 average number of persons on the payroll during the year of return. 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. Full-time and part-time employees are included but 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 and to state whether any of the investment shown in cost of new building work, vehicles or plant and machinery included goods for letting out on hire or leasing.

### (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 regarded 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 is 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. 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 and commissions, 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 included.

### 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 under the Social Security Pensions Act, 1975 as well as 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 each industry, including not selected 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 practice with regard to stock valuation, may affect comparability in some respects.

© Crown copyright 1980

**Her Majesty's Stationery Office**

*Government Bookshops*

49 High Holborn, London WC1V 6HB  
13a Castle Street, Edinburgh EH2 3AR  
41 The Hayes, Cardiff CF1 1JW  
Brazenose Street, Manchester M60 8AS  
Southey House, Wine Street, Bristol BS1 2BQ  
258 Broad Street, Birmingham B1 2HE  
80 Chichester Street, Belfast BT1 4JY

*Government publications are also available  
through booksellers*

*Extracts from this publication may be reproduced  
provided the source is acknowledged. Proposals for  
complete reproduction should be addressed to the  
Librarian, Business Statistics Office, Newport,  
Gwent NPT 1XG*