## 84 Aerospace equipment manufacturing and repairing

This Report on the Aerospace Equipment Manufacturing and Repairing Industry relates to establishments engaged wholly or mainly in manufacturing, assembling, modifying and repairing airframes, complete aircraft, gliders, guided weapons, spacecraft, launch vehicles, sub-orbital vehicles and associated ground equipment (other than electronic or telemetric equipment), manufacturing and repairing aero-engines and power plant for aircraft, and rocket motors for guided weapons and spacecraft, manufacturing and repairing air cushion vehicles (hovercraft). Parts and accessories (other than those made wholly or primarily of asbestos, glass, rubber or plastics) are included but aeronautical instruments, radio, radar and other electronic equipment, and electrical accessories and equipment are excluded.

This industry corresponds to minimum list heading 383 in the Standard Industrial Classification (Revised 1968) which has been used for the first time as a basis of classification in the 1968 Census.

The industry corresponds to Aircraft Manufacturing and Repairing Industry (Part 64 ) in the Reports on the last detailed Census of Production for 1963, except that aircraft passenger seats included in the 1963 Report on the Furniture and Upholstery Industry (Part 109) are now included in this industry.

Throughout this Repbrt, the figures given for 1963 have been reclassified, as far as possible, according to the Standard Industrial Classification (Revised 1968) so that data for 1963 and 1968 are on the same industrial basis. However the reclassification of small firms, which provided limited information only, has been arbitrary.

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

TABLE 1 Industry summary, 1963 and 1968
United Kingdom (a) (b)

## No.

Title
SECTION I - Estimates for al l establishments in the industry

$$
\text { Industry summary, } 1963 \text { and } 1968
$$

2 Analysis by size of establishment within the industry, 1968
3 Percentage analysis of employees, by age and sex, 1969
SECTION II - Analysis of returns received
4 Analysis of 1 arger establ ishment s, 1963 and 1968
5 Sales of principal products of the industry by 1 arger establishments including sal es by establishments cl assified to other industries, 1963 and 1968
Sales of principal products of the industry by larger establishments
classified to other industries, 1963 and 1968
Sales of other than principal products by 1 arger establishments in the industry, 1963 and 1968
Production of certain principal products of the industry by larger establ ishments, 1963 and 1968

9 Purchases by 1 arger establishments of selected principal products of the industry, 1968

10 Purchases by larger establishments in the industry, 1963 and 1968
11 Transport costs and employment of 1 arger establishments, 1963 and 1968
12 Payments for certain services, etc by larger establishments, 1963 and 1968
13 Percentage analysis of twelve-month periods covered by returns from larger

## Footnotes continued from page 84/3.

(c) Including services rendered to other organisations (anounts charged for hiring out plant, machinery or other goods, for providing transport, or for technical or other services
rendered). rendered).
(d) Administrative, technical and clerical employees
(e) Excluding expenditure for establishments not yet in production.
(f) Acquisitions less disposals.

(a) For 1968, estimates for establishments not making satisfactory returns and for small establishments, fron Fhich only employment data were collected, accounted for 1 per cent. of the total figures in which the were incorporated: of this
situation existed for 1963 .
(b) The following information relates to small establishments (employing fewer than 25 persons) in this
industry. It includes an estimate for small establishments not making satisfactory returns.
industry. It includes an estimate for small establishments not making satisfactory return

$$
\begin{aligned}
& \text { Number of establishments } \\
& \text { Average number employed: } \\
& \text { Working proprietors } \\
& \text { Other persons employed }
\end{aligned}
$$

Other persons employed
1968
$21 \quad 132$
e $84 / 2$.

TABLE 2 Analysis by size of establishment within the industry, 1968 (i) Output and employment

All establishments: United Kingdom

| Number employed on average during the year by the establishment (a) | $\begin{aligned} & \text { Estab- } \\ & \text { lish- } \\ & \text { ments } \end{aligned}$ | Enterprises (b) | $\left\lvert\, \begin{aligned} & \text { Total number } \\ & \text { employed on } \\ & \text { average } \\ & \text { during the } \\ & \text { year (a) } \end{aligned}\right.$ | Gross output | Net output | Net output per head |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Number | Number | £'000 | £'000 | £ |
| 1-5 | 24 | 23 | 67 | .. | . | . |
| 6-10 | 24 | 24 | 195 | .. | . | .. |
| 11-24 | 57 | 56 | 1,036 | .. | .. |  |
| 25-49 | 24 | 24 | 907 | 2,106 | 1,540 | 1,698 |
| 50-99 | 32 | 30 | 2,282 | 6,825 | 4,210 | 1,845 |
| 100-199 | 40 | 35 | 5,892 | 18,093 | 11, 196 | 1,900 |
| 200-299 | 20 | 19 | 4,965 | 14,009 | 8,536 | 1,719 |
| 300-399 | 20 | 15 | 6,827 | 18,500 | 11, 167 | 1,636 |
| 400-499 | 8 | 8 | 3,597 | 10,335 | 5,906 | 1,642 |
| 500-749 | 15 | 10 | 8,804 | 26, 370 | 16,868 | 1,916 |
| 750-999 | 12 | 11 | 10,373 | 30,858 | 18,016 | 1,737 |
| 1,000-1,499 | 15 | 11 | 16,786 | 63,646 | 33,698 | 2,008 |
| 1,500-1,999 | 9 | 7 | 15,876 | 50,298 | 28,638 | 1,804 |
| 2,000-2,499 | 5 | 5 | 11,215 | 35,332 | 22,423 | 1,999 |
| 2, 500-4,999 | 15 | 8 | 57,035 | 223,856 | 125, 783 | 2,205 |
| 5,000 and over | 9 | 3 | 90,201 | 381,167 | 186, 304 | 2,065 |
| Unsatisfactory returns | 26 | 25 | 637 | .. | .. | .. |
| Total | 355 | 226 | 236,695 | 888,630 (c) | 478,174(c) | 2,020 (c) |

TABLE 2 (continued) (ii) Employees, wages and salaries
All establishments: United Kingdom

| Number employed on average during the year by the establishment (a) | Employees |  | Wages and salaries |  | Wages and salaries per head |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Operatives | 0thers <br> (d) | Operatives | 0thers <br> (d) | $\begin{aligned} & \text { Oper- } \\ & \text { atives } \end{aligned}$ | Others (d) |
|  | Number | Number | £'000 | £'000 | £ | £ |
| 1-5 | . | .. |  |  |  |  |
| 6-10 |  |  |  |  |  |  |
| 11-24 | .. | . | . | .. |  |  |
| 25-49 | 687 | 196 | 719 | 270 | 1,046 | 1,377 |
| 50-99 | 1,678 | 591 | 1,819 | 720 | 1,084 | 1,218 |
| 100-199 | 4, 104 | 1,777 | 4,376 | 2,215 | 1,066 | 1,246 |
| 200-299 | 3, 251 | 1,708 | 3,580 | 2,258 | 1,101 | 1,322 |
| 300-399 | 4,337 | 2,490 | 4,368 | 3,100 | 1,007 | 1,245 |
| 400-499 | 2,157 | 1,438 | 2, 124 | 1,776 | 985 | 1,235 |
| 500-749 | 5,063 | 3,741 | 5,681 | 4,851 | 1,122 | 1,297 |
| 750-999 | 5,637 | 4,736 | 6,009 | 6,040 | 1,066 | 1,275 |
| 1,000-1,499 | 9,948 | 6,838 | 11,215 | 8,462 | 1,127 | 1,238 |
| 1,500-1,999 | 8,157 | 7,719 | 8,406 | 9,510 | 1,031 | 1,232 |
| 2,000-2,499 | 6,815 | 4,400 | 7,390 | 5,472 | 1,084 | 1,244 |
| 2,500-4,999 | 28,598 | 28,435 | 31,795 | 36,714 | 1,112 | 1,291 |
| 5,000 and over | 48,200 | 42,000 | 54,046 | 55, 171 | 1,121 | 1,314 |
| Unsatisfactory returns | .. | .. | .. | . . |  |  |
| Total | 129,638(c) | 108,866(c) | 142,633(c) | 137,593(c) | 1,100(c) | 1,288(c) |

(a) Including working proprietors.
(b) The sum of the figures for the size groups exceeds the total for the industry to group.
group.
(c) Including estimates for establishments employing fewer than 25 persons and for (d) Administrative, technical and clerical employees.

TABLE 3 Percentage analysis of employees, by age and sex, 1969 (a)
All establishments: United Kingdom

| Ages | Males | Females | All employees |
| :--- | :---: | :---: | :---: |
| Under 18 <br> 18 and over | Per cent. | Per cent. | Per cent. |
|  | 2 | 1 | 3 |
|  | 84 | 13 | 97 |
|  | Source: Department of Employment |  |  |  |

(a) The percentages rel ate to the numbers employed (excluding working proprietors) at June 1969, the earliest date for Standard Industrial Classification, (Revised 1968).

Footnotes to Table 4
(a) Some establishments employing fewer than 25 persons were included in returns for larger establishments. These
amounted to 7 establ ishments in 1968 and 10 in
(b) Including services rendered to other organisations
(amounts charged for hiring out plant, machinery or other goods, for providing transport, or for technical or other
services rendered)
services rendered)
(c) Direct sales of goods (excluding canteen takings) made to, and work done for, the general public by larger establish-
ments are included. These amounted to $£ 89,000$ in 1968 . Similar information is not available for 1963 .
(d) This is the ratio of total sales of principal products by the industry to total sales of goods produced and work done. (e) Progress payments received for work in progress in 1968
from United Kingdom customers were recorded as $£ 169,354$, from United Kingdom customers were recorded as $£ 169,354,000$
at the beginning of year and $£ 170,846$ at the beginning of year and $£ 170,846,000$ at the end of year;
and from overseas customers $£ 48,130,000$ at the beginning of year and $446,953,000$ at the end of year. ${ }^{\text {it }}$ ther Similar
information is not available for 1963.
(f) Administrative, technical and clerical employees.
(g) Excluding expenditure for establishments not yet in
production.

TABLE 4 Analysis of larger establishments, 1963 and 1968
Establishments employing 25 or more persons: Analysis of returns received,
United Kingdom (a)


TABLE 5 Sales of principal products of the industry by larger establishments, including sales by establishments classified to other industries, 1963 and 1968
Astablishments employing 25 or more persons:


TABLE 5 (continued)

|  | 1963 |  | 1968 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Quantity | Value | Enterprises | Entries |
| Work done |  | £'000 |  | £’000 | Number | Number |
| Development and experimental work on aircraft and air cushion vehicles (including hovercraft), including prototypes for which payment was receivable | .. | 103,569 | .. | 121,662 | 29 | 49 |
| Development and production work on guided weapons, missiles and 1 aunches | .. | 47,929 | . | 56,856 | 19 | 46 |
| Repair work, modifications, conversions, etc | . | ๑نં, 776 | . | 64,397 | 38 | 66 |
| Other work done |  |  |  |  |  |  |
| Aeronautical |  |  | .. | 42,767 | 52 | 70 |
| Non-aeronautical |  |  | .. | 9,308 | 26 | 35 |
| Total |  | 541,042 |  | 847,633 | . | . |
| Sales in other industries (see Table 6) |  | 13,356 |  | 19,960 | .. | . |
| Principal products of this industry sold by establishments in the industry |  | 527,686 |  | 827,673 | 113 | 164(b) |

(a) Not recorded separately for 1963.
(b) This figure represents the total number of returns made for larger establishments in this
industry which is less than the total number of establishments shown in Table 4 on account of combined returns covering more than one establishment.

TABLE 6 Sales of principal products of the industry by larger establishments classified to other industries, 1963 and 1968
Establishments employing 25 or more persons: Analysis of returns received, United Kingdom

(a) The references given are to the list of industries at the front of this report.
(b) Including gliders, aircraft new and reconditioned, and air frames for 1963.

TABLE 7 Sales of other than principal products by larger establishments in the industry, 1963 and 1968
Establishments employing 25 or more persons:
Analysis of returns received, United Kingdom

|  | 1963 | 1968 |
| :--- | ---: | ---: |
|  | Value | Value |
| Mechanical engineering | $£{ }^{\prime} 000$ | $£{ }^{\prime} 000$ |
| Pumps, valves and compressor s | 72 | 1,368 |
| Industrial plant and steelwork | 1,525 | 1,026 |
| Other mechanical engineering products | $7,954(a)$ | 7,043 |
| Scientific and industrial instruments and systems | 1,242 | 1,628 |
| Electrical engineering |  |  |
| Radio, radar and electronic capital goods | 617 | 1,663 |
| 0ther electrical goods | 1,644 | 5,914 |
| Shipbuilding and marine engineering products | 931 | 556 |
| Motor vehicle parts and accessor ies | 954 | 1,735 |
| Other products | 2,444 | 2,748 |
| Services rendered to other organisations (b) | 2,353 | 3,909 |
| Total value of goods sold without having been subjected |  |  |
| to any manufacturing process (merchanted or factored) | 21,371 | 26,189 |
| Canteen takings | 2,214 | 2,391 |
| Total | 43,320 | 56,168 |

(a) May include some engineers' small tools.
(b) Amounts charged for hiring out plant, machinery or other goods, for
providing transport, or for technical or other services rendered to other providing tran
organisations.

TABLE 8 Production of certain principal products of the industry by larger establishments, 1963 and 1968

This table is not applicable to this industry.

TABLE 9 Purchases by larger establishments of selected principal products of the industry, 1968

TABLE 10 Purchases by larger establishments in the industry, 1963 and 1968 Establishments employing 25 or more persons: Analysis of returns received, United Kingdom

|  |
| :--- | ---: | ---: | ---: | ---: |



TABLE 10 (cont inued)

(a) Cadmium copper was not specifically excluded for 1963.
(b) For 1963 described as 'Copper (excluding blister)'.
(c) Not recorded separately for 1963.
(d) Foil was specifically included for 1963.
(e) For 1963 described as 'Rubber manufactures including tyres and tubes'
(f) For 1963 described as 'Gases, compressed'.
(g) Moulded pulp units, labels and other packaging materials of paper, cardboard and fibreboard (except $\quad 196$
(h) For 1963 described as 'Sheet, film, foams, etc; wholly or mainly of polyethylene (including bags
(h) For 1963 described as 'Sheet, film, foams, etc; wholly or mainly of polyethylene (including bags
and lay flat tubing)'.
(i) The total quantity of electricity generated in establishment
(j) For 1968, may include a small amount of fuels not covered by specific headings.

TABLE 11 Transport costs and employment of larger establishments, 1963 and 1968
Establishments employing 25 or more persons:
Analysis of returns received, United Kingdom

|  | Unit | 1963 | 1968 |
| :---: | :---: | :---: | :---: |
| Average number mainly employed on transport | No. | 1,731 | 1,999 |
| Transport costs |  |  |  |
| Wages and salaries | £'000 | 1,274 | 2,131 |
| Derv fuel and motor spirit | " | 376 | 704 |
| Tyres and other spare parts for road goods vehicles | " |  | 237 |
| Payments to other organisations for transport $\quad\left\{\begin{array}{l}\text { by road } \\ \text { by rail and other } \\ \text { means excluding } \\ \text { postal services }\end{array}\right.$ | " | $] 836\{$ | 873 486 |
| Costs of operating road goods vehicles Insurance | " | 60 | 53 |
| Vehicle licences | " | 56 | 97 |
| Depreciation | " | 517 | 566 |
| Payments to other organisations for repairs and maintenance | " | 118 | 157 |
| Total | " | 3,237(a) | 5,304 |

(a) Excluding tyres and other spare parts for road goods vehicles,
not collected separately for 1963

TABLE 12 Payments for certain services, etc by larger Payments for certain services, etc
establ ishments, 1963 and 1968 (a)
Establishments employing 25 or more persons:

|  | Amounts payable |  |
| :--- | ---: | ---: |
|  | 1963 | 1968 |
| Repairs and maintenance to | $£ ’ 000$ | $£ ’ 000$ |
| Buildings | 2,193 | 3,770 |
| Road goods vehicles | 118 | 157 |
| Plant, machinery and other capital equipment | 3,406 | 6,767 |
| Insurance, licensing and depreciation of road goods | 633 | 1,724 |
| vehicles (b) | 2,893 | 4,039 |
| Rates, excluding water rates | 2,551 | 4,743 |
| Hire of plant and machinery | 2,061 | 3,406 |
| Postage, telephone, telegrams, cables and telex (c) | 13,855 | 24,606 |

(a) No deduction is made for these payments to arrive at the figures of net output given in this report.
(b) For details see Table 11
(c) Excluding telex for 1963.

