

80 Shipbuilding and marine engineering

This Report on the Shipbuilding and Marine Engineering Industry relates to establishments engaged wholly or mainly in building or repairing ships (naval and merchant), boats, barges, lighters, etc of all types and sizes, whether self-propelled or not; making oars, masts and spars, rigging and other tackle and ships' models, off-shore oil and gas drilling rigs (floating); manufacturing and repairing main and auxiliary steam (reciprocating and turbine) engines for ships and marine boilers. The manufacture or repair of internal combustion engines for ships and boats (including out-board motors) is included, as indicated below, if carried out at marine engineering establishments. The manufacture of ships' capstans and winches is excluded.

This industry corresponds to minimum list heading 370 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 definition of this industry however is unchanged from the last detailed Census of Production for 1963 in which it was reported (Part 61).

METHOD OF CLASSIFICATION

In classifying returns to this industry the standard procedure as outlined in the notes on page (i) was modified so that when sales of marine internal combustion engines and marine gas turbine engines were reported as the most important items of output and they were not accompanied by sales of any other principal products of the industry, the return was classified to the Industrial Engines Industry, (Part 53) unless the sales were 95 per cent. or more of total output.

The classification rules were also modified for the sub-division 'Ship repairing'. Returns were classified to this sub-division only if (a) ship repairing and maintenance work as the predominant activity was carried on in conjunction with general engineering repair and jobbing work or (b) ship repairing and maintenance work and any lesser amount of repair and jobbing work or marine machinery, together accounted for 80 per cent. or more of total output. Otherwise returns that showed ship repairing or repair and jobbing work on marine machinery as their main activity (although less than 80 per cent. of total output) were classified to the residual sub-division 'Ships' or boats' fittings, etc'. The standard classification procedure was followed for the other sub-divisions.

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).

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Footnotes to Table 1.

(a) For 1968, estimates for establishments not making satisfactory returns and for small establishments, from which only employment data were collected, accounted for 4 per cent. of the total figures in which they were incorporated: of this, unsatisfactory returns accounted for 1 per cent. A similar 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.

	1963	1968
Number of establishments	843	895
Average number employed:		
Working proprietors	1,019	835
Other persons employed	6,904	7,174

(c) 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).

(d) Total work in progress, change during year.

(e) Total work in progress at end of year.

(f) Administrative, technical and clerical employees.

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

(h) Acquisitions less disposals.

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

	Unit	All establishments	
		1963	1968
Number of enterprises	No.	1,061	1,071
Number of establishments	"	1,309	1,298
Gross output	£'000	424,862	516,538
Net output	"	215,545	273,618
Net output per head	£	1,057	1,461
Sales and work done	£'000	427,285	453,489
	"	3,005	4,684
Purchases	"	163,413	193,704
	"	2,719	4,181
Payments to other organisations	"	40,881	43,299
	"	1,159	1,371
	"		859
Stocks and work in progress	"	- 349	- 31
Goods on hand for sale (excluding ships completed during the year)	"	2,066	2,656
	"		+ 31,143
Work in progress	"		110,028
	"		+ 28,797
On war vessels	"		101,472
	"		+ 140
On other than war vessels	"		2,771
	"		- 1,247
Self-propelled, 100 gross tons and over	"		619
	"		- 436
Self-propelled under 100 gross tons and vessels not self-propelled	"		60,233
	"		+ 495
On floating docks, pontoons, caissons and off-shore gas and oil drilling rigs etc	"		18,610
	"		187.3
Other	"		148.1
	"		38.2
Materials, stores and fuel	£'000	126,927	153,665
	"	30,477	49,638
Number employed on average during the year	Th.	203.8	187.3
	"	170.1	148.1
Wages and salaries	"	32.5	38.2
	"		
Capital expenditure (g)	£'000	126,927	153,665
	"	30,477	49,638
Total	"	16,043	24,882
New building work	"	5,600	13,322
Land and existing buildings (h)	"	96	- 128
Plant and machinery (h)	"	9,729	11,309
Vehicles (h)	"	618	378

For footnotes to this table - see page 80/2.

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)	Estab-lish-ments	Enter-prises (b)	Total number employed on average during the year (a)	Gross output	Net output	Net output per head
1-5	296	290	944	..	..	..
6-10	215	212	1,645	..	..	..
11-24	273	263	4,779	..	..	..
25-49	95	84	3,559	13,752	5,862	1,647
50-99	109	92	7,877	22,419	12,708	1,613
100-199	68	58	9,568	28,559	15,756	1,647
200-299	28	22	6,811	18,127	10,691	1,570
300-399	15	13	5,216	15,150	8,523	1,634
400-499	8	8	3,635	10,173	5,552	1,527
500-749	17	15	10,832	28,519	15,348	1,417
750-999	14	13	12,659	41,791	21,507	1,699
1,000-1,499	10	7	11,900	38,364	18,048	1,517
1,500-2,999	15	11	28,271	82,330	44,654	1,580
5,000 and over	10	6	78,330	193,331	102,334	1,306
Unsatisfactory returns	125	123	1,241	..	..	..
Total	1,298	1,071	187,267	516,538(c)	273,618(c)	1,461(c)

(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	
	Oper-atives	Others (d)	Oper-atives	Others (d)	Oper-atives	Others (d)
	Number	Number	£'000	£'000	£	£
1-5	..	..	..	..	..	..
6-10	..	..	..	..	..	..
11-24	..	..	..	..	..	..
25-49	2,941	566	3,081	709	1,048	1,253
50-99	6,534	1,293	6,895	1,625	1,055	1,257
100-199	7,942	1,603	8,857	2,036	1,115	1,270
200-299	5,514	1,294	6,272	1,621	1,138	1,253
300-399	4,438	774	4,786	986	1,079	1,275
400-499	2,909	725	2,842	875	977	1,207
500-749	8,883	1,949	9,274	2,388	1,044	1,225
750-999	10,469	2,189	10,537	2,647	1,007	1,209
1,000-1,499	9,824	2,076	10,379	2,597	1,057	1,251
1,500-2,999	22,716	5,555	25,152	6,851	1,107	1,233
5,000 and over	59,755	18,577	59,178	25,265	990	1,360
Unsatisfactory returns	..	..	..	..	..	..
Total	148,119(c)	38,174(c)	153,665(c)	49,638(c)	1,037(c)	1,300(c)

(a) Including working proprietors.

(b) The sum of the figures for the size groups exceeds the total for the industry to the extent that enterprises made returns for establishments in more than one size group.

(c) Including estimates for establishments employing fewer than 25 persons and for establishments not making satisfactory returns.

(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
	Per cent.	Per cent.	Per cent.
Under 18	4	-	4
18 and over	90	6	96
All ages	94	6	100

Source: Department of Employment

(a) The percentages relate to the numbers employed (excluding working proprietors) at June 1969, the earliest date for which the information is available on the basis of the 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 28 establishments in 1968 and 47 in 1963.
- (b) The method of classifying returns to sub-divisions of the industry is explained in the notes.
- (c) The sum of the figures for the sub-divisions exceeds the total for the industry to the extent that enterprises made returns for more than one sub-division.
- (d) 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).
- (e) Direct sales of goods (excluding canteen takings) made to, and work done for, the general public by larger establishments are included. These amounted to £1,212,000 in 1968. Similar information is not available for 1963.
- (f) Characteristic products relate only to specific sub-divisions of the industry.
- (g) For sub-divisions of the industry, this is the ratio of sales of characteristic products to total sales of goods produced and work done. For the industry as a whole, this is the ratio of total sales of principal products by the industry to total sales of goods produced and work done.
- (h) Progress payments received for work in progress in 1968 from United Kingdom customers were recorded as £131,960,000 at the beginning of year and £185,132,000 at the end of year, and from overseas customers £38,534,000 at the beginning of year and £52,208,000 at the end of year. Similar information is not available for 1963.
- (i) Total work in progress, change during year.
- (j) Total work in progress at end of year.
- (k) Administrative, technical and clerical employees.
- (l) Excluding expenditure for establishments not yet in production.
- (m) Acquisitions less disposals.

TABLE 4 Analysis of larger establishments, 1963 and 1968

Establishments employing 25 or more persons: Analysis of returns received, United Kingdom (a)

	Unit	Sub-divisions of the industry (b)				Sub-divisions of the industry (b)					
		Shipbuilding		Marine engineering		Boatbuilding		Sub-contract work on new ships under construction		Ship repairing	
		1963	1968	1963	1968	1963	1968	1963	1968	1963	1968
Number of enterprises (c)	No.	44	32	58	40	46	51	19	20	108	86
Number of establishments	"	78	73	83	78	55	56	39	25	196	149
Gross output	£'000	180,573	233,973	92,943	76,814	7,308	13,400	7,254	11,780	110,734	150,549
Net output	"	76,094	98,575	44,211	39,810	3,640	6,398	3,911	7,536	74,808	104,953
Net output per head	£	997	1,337	1,167	1,484	922	1,639	1,013	1,599	1,092	1,565
Sales and work done	£'000	194,285	177,979	89,306	80,366	7,034	12,908	7,320	8,628	104,705	146,486
Sales of characteristic products and characteristic work done	"	218	802	1,262	1,712	214	313	261	53	586	1,300
Index of specialisation (g)	Per cent.	89	88	70	70	71	86	67	89	82	77
Purchases	£'000	78,527	103,973	39,421	30,765	3,304	6,472	2,818	3,939	28,788	37,610
Payments to other organisations	"	251	694	1,001	1,574	165	253	294	57	596	1,179
	"	24,550	30,136	7,667	4,689	201	367	211	258	6,124	5,578
	"	285	231	402	260	45	76	35	22	302	1,203
	"		93		181		12				
Stocks and work in progress											
Goods on hand for sale (excluding ships completed during the year)	"	69	133	225	88	3	71	30	2	32	7
Work in progress (h)	"	373	574	1,158	1,618	104	164	77	14	76	62
On war vessels	"		+ 28,607				+ 41				- 64
On other than war vessels	"		101,659				50				82
Self-propelled 100 gross tons and over	"		+ 23,949				+ 359				+ 1,010
Self-propelled under 100 gross tons and vessels not self-propelled	"	- 13,861 (i)	90,792	+ 2,600 (i)	- 5,172 (i)	57 (i)	410	- 297 (i)	+ 3,097 (i)	+ 5,475 (i)	2,515
On floating docks, pontoons, caissons and off-shore gas and oil drilling rigs, etc	"	80,945 (j)	597	44,219 (j)	31,393 (j)	1,511 (j)	1,782	1,303 (j)	4,322 (j)	9,857 (j)	114
Other	"		- 1,102				71				- 20
Materials, stores and fuel	"		464				-				128
	"		+ 3,411				9				+ 1,801
	"		24,680				316				3,261
	"	- 867	- 272	- 242	+ 474	47	+ 177	+ 16	+ 32	- 115	- 25
	"	5,291	4,759	6,613	7,513	700	1,096	357	474	3,420	3,289
Number employed on average during the year	No.	76,297	73,756	37,871	26,831	3,949	3,903	3,862	4,712	68,513	67,054
Wages and salaries	£'000	63,034	58,568	29,155	19,554	3,286	3,156	3,348	3,926	61,072	54,719
Wages and salaries per head	£	13,239	15,176	8,689	7,254	623	700	507	771	7,393	12,308
Capital expenditure (l)	"	45,074	60,278	22,060	19,322	2,027	3,098	2,783	4,420	47,661	58,036
New building work	£'000	12,476	19,736	8,071	8,664	534	814	456	843	7,200	17,062
Land and existing buildings	"	942	1,300	929	1,194	857	1,164	900	1,094	974	1,386
Plant and machinery	"	2,885	4,762	322	375	70	225	19	18	2,005	7,186
Vehicles	"	148	92	424	14	170	85	3		118	29
	"	245	48	299	199	30	3		-	218	42
	"	4,220	4,016	2,735	1,931	62	147	32	36	3,579	5,147
	"	591	261	341	206	18	2		1	471	109
	"	129	97	89	117	28	66	42	32	530	181
	"	34	24	24	33	12	17	13	19	164	59

Continued on next page.

TABLE 4 (continued)

	Unit	Sub-divisions of the industry (b)		Total	
		Ships' or boats' fittings, etc		1963	1968
		1963	1968	1963	1968
Number of enterprises (c)	No.	36	28	272	28
Number of establishments	"	44	41	495	41
Gross output	£'000	8,357	7,354	407,170	493,87
Net output	"	3,905	4,330	206,569	261,61
Net output per head	£	805	1,550	1,057	1,46
Sales and work done	£'000	goods produced and work done (d) (e)		409,492	433,58
		merchanted goods and canteen takings		2,880	4,47
Sales of characteristic products and characteristic work done	"	(f)	(f)	(f)	(f)
Index of specialisation (g)	Per cent.	..	..	91	91
Purchases	£'000	materials for use in production and packaging and fuel		156,608	185,20
		goods for merchandising and canteen purchases		2,606	3,99
Payments to other organisations	"	for work done		39,179	41,39
		for transport		1,111	1,31
	"	by road		1,111	1,31
		by rail and other means excluding postal services			
Stocks and work in progress					
Goods on hand for sale (excluding ships completed during the year)	"	change during year		- 335	- 3
		at end of year		1,980	2,53
Work in progress (h)					
On war vessels	"	change during year		+ 29,77	105,20
		at end of year			
On other than war vessels					
Self-propelled 100 gross tons and over	"	change during year		+ 27,53	97,01
		at end of year			
Self-propelled under 100 gross tons and vessels not self-propelled	"	change during year		+ 184	2,64
		at end of year			
On floating docks, pontoons, caissons, and off-shore gas and oil drilling rigs, etc	"	change during year		- 1,19	59
		at end of year			
Other	"	change during year		- 41	57,59
		at end of year			
Materials, stores and fuel	"	change during year		+ 47	17,79
		at end of year			
Number employed on average during the year	No.	total including working proprietors		179,04	142,24
		operatives		163,911	36,66
		other employees (k)		31,268	147,57
Wages and salaries	£'000	of operatives		122,326	47,67
		of other employees (k)		29,371	1,05
Wages and salaries per head	£	678	1,041	746	1,05
Capital expenditure (l)					
New building work	£'000	65	172	5,367	12,73
Land and existing buildings	"	acquisitions		884	25
		disposals		792	3
Plant and machinery	"	acquisitions		10,751	11,38
		disposals		1,427	5
Vehicles	"	acquisitions		848	5
		disposals		255	1

TABLE 5 Sales of principal products of the industry by larger establishments, including sales by establishments classified to other industries, 1963 and 1968

Establishments employing 25 or more persons: Analysis of returns received, United Kingdom

	1963			1968				
	Quantity		Selling value	Quantity		Selling value	Enterprises	Entries
	Number	Displacement tonnage	£'000	Number	Displacement tonnage	£'000	Number	Number
SHIPS, BOATS, ETC, COMPLETED FOR SALE IN THE YEAR OF RETURN								
War vessels	31 14	34,864	41,731 43	30 ..	27,562	35,273 4,734	8	11
Other than war vessels		..			..
Self-propelled of 100 gross tons and over								
Tankers		Th.tons			Th.tons			
300 gross tons and over	20 ..	476	49,604 407	17 3	198	21,192 268	8 *	10 *
100 to 299 gross tons		..			..
Passenger and passenger-cargo designed to carry more than twelve passengers	8	30.7	10,129	4	..	4,577	*	*
Refrigerated cargo	6	58.0	8,729	2	2.9	1,426	*	*
Other bulk carriers	54	376	44,673	22	536	41,011	10	10
Container vessels					3				20.0	4,987	*	*
Other cargo	23	144	25,774	9	11			
Fishing vessels	13	4.7	2,338	24	8.2	4,118	11	11
Tugs	54 4	69.5 ..	11,579 850	29 20	6.4 13.3	4,867 6,548	9 13	9 13
Other								
Self-propelled under 100 gross tons	Number			Number				
Cargo-carrying (including passenger-cargo and fishing)	36		284	42		1,200	13	13
Lifeboats	330		596	..		764	7	8
Other	770		3,519	2,456		6,716	58	59
	..		555	..		1,345		
Not self-propelled								
Cargo-carrying	22		159	26		323	7	7
Lifeboats	387		261	285		213	8	8
Other	678		393	3,176		1,522	31	32
	..		1,105	..		334		
Floating docks, pontoons, caissons, off-shore oil and gas drilling rigs, etc			945			2,882	11	11
Total value of ships, boats, etc, completed in the year of return			177,901			170,074	..	..
MARINE ENGINEERING (a)	No. of sets	Shaft h.p.	Net selling value	No. of sets	Shaft h.p.	Net selling value		
Marine machinery (excluding the value of installation work)								
Propelling machinery								
Steam turbine								
Complete	12 9	107,839 ..	3,735 3,790	12	193,300	2,356	*	5
Parts								

For footnotes to this table - see page 80/5.

Continued on next page.

TABLE 5 (continued)

	1963			1968			Enter-prises	Entr-
	Quantity		Net selling value	Quantity		Net selling value		
	Number	B.h.p.	£'000	Number	B.h.p.	£'000	Number	Number
II - MARINE ENGINEERING (a) (continued)								
Marine machinery (excluding the value of installation work) (continued)								
Propelling machinery (continued)								
Internal combustion reciprocating engines								
Complete								
Compression ignition (all types)								
Not over 50 b.h.p.	{ 2,807 2,502	53,595 ..	836 448	{ 12,128 ..	290,771 ..	4,153	9	12
Over 50 b.h.p., not over 100 b.h.p.	{ 463 3,625	34,561 ..	507 1,250	{ 3,114 ..	..	1,197	8	10
Over 100 b.h.p., not over 300 b.h.p.	{ 507 158	88,196 ..	1,183 127	{ 716 ..	106,519	1,795	10	14
Over 300 b.h.p., not over 1,500 b.h.p.	262	155,065	2,361	303	167,801	2,568	8	11
Over 1,500 b.h.p., not over 4,000 b.h.p.				91	176,166	4,381	6	8
Over 4,000 b.h.p., not over 10,000 b.h.p.	{ 96 3	483,000 ..	12,349 1,076	25	177,450	5,837	6	6
Over 10,000 b.h.p.				10	155,400	2,928	5	5
Other	..	..	1,349	..	..	1,423	7	8
Parts	..	..	7,028	..	..	11,991	36	46
Gas turbine engines, complete and parts	..	..	1,804	..	..	437	6	6
Auxiliary machinery								
Internal combustion engines								
Compression ignition								
Complete	2,295	194,407	3,213	2,817	304,566	5,221	7	12
Parts	..	..	2,469	..	..	2,221	7	10
Other, complete and parts	..	..	1,365	..	..	2,242	5	5
Boilers, complete	..	..	1,772	78	..	1,267	5	6
Steering gear, complete	{ 349 ..	1,651 392	..	{ 355 ..	2,506	..	8	8
Reduction gear, complete	185	753	..	..	3,556	..	8	8
Marine machinery, complete, not specified above (excluding compressors and pumps)	..	..	8,625	..	..	18,268	36	37
Parts of boilers, steering gear, reduction gear and of marine machinery not elsewhere specified	..	..	6,353	..	..	8,360	58	63
Total value of marine machinery (excluding the value of installation work) (a)			65,119			83,509	..	..

TABLE 5 (continued)

	1963		1968		Enter-prises	Entries
	Value of work done		Value of work done			
	£'000	£'000	£'000	£'000	Number	Number
WORK DONE						
Sub-contract, etc, work done for others during the year on new ships, boats, floating docks, etc, under construction						
Insulation (not electrical) and similar work	2,348		2,833		15	21
Painting	242		419		11	13
Heating, ventilating, etc, work	282		677		7	10
Electrical and like work	940		2,135		12	15
Deck and flooring work	405		545		7	11
Other (excluding the value of installation work)	1,611		5,837		29	35
Repair and maintenance work, etc, done in the year of return to ships, etc						
War vessels	44,536		62,926		23	31
Tankers			11,322		41	58
Other ships and boats			50,573		153	221
Floating docks, pontoons, caissons, off-shore oil and gas drilling rigs, etc	60,076		868		18	21
Marine engineering work done						
Installation of marine machinery	16,146		10,986		56	56
Repair and jobbing work on marine machinery	22,546		17,114		91	112
Other work done	1,517		5,180		56	77
Total work done	150,651		171,414		..	..
	Quantity	Net selling value	Quantity	Net selling value		
		£'000		£'000		
OTHER GOODS SOLD						
Ships' or boats' fittings (blocks, masts, spars, oars, etc) sold separately	..	2,484	..	3,186	44	46
Other products	..	1,839	..	965	34	39
Waste products			Th.tons			
Scrap metals						
Iron and steel	..	873	76.9	662	107	155
Non-ferrous	..	389	..	1,017	79	122
Other waste products	..	31	..	132	39	52
Total		399,286		430,959	..	..
Sales in other industries (see Table 6)		26,217		37,865	..	..
Principal products of this industry sold by establishments in the industry		373,069		393,094	236	329 ^(b)

(a) In addition to marine machinery sold, the value of marine machinery recorded as made by establishments for installation in ships of their own construction amounted to £8,970,000 in 1963. Owing to the risk of disclosure of information relating to individual firms a similar figure cannot be shown for 1968.

(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

	1963		1968				Principal industries in which produced (a)	
	Quantity	Value	Quantity	Value	Entries			
		£'000		£'000	Number			
Ships, boats, etc, including vessels not self-propelled and other work of new construction	..	195	..	315	*	63,84,149		
Marine machinery (excluding the value of installation work)								
Propelling machinery								
Steam turbine, complete and parts	..	671	..	1,660	14	58,59,64,71		
Internal combustion reciprocating engines								
Complete								
Compression ignition (all types)								
Not over 100 b.h.p.	{ 3,003 5,604	{ 76,998 ..	{ 1,103 1,483	{ 11,825 ..	{ .. 5,026	{ .. 11	{ 53,81,82	
Over 100 b.h.p., not over 1,500 b.h.p.	{ 629 172	{ 234,906 ..	{ 3,093 521	{ 823 77	{ 227,825 146,746	{ 3,332 3,709	{ 14 *	{ 53,82 53
Over 1,500 b.h.p.								
Other, including parts for all types of internal combustion reciprocating engines	..	3,405	..	5,894	34	53,64,81,97		
Gas turbine engines, complete and parts	..	781	..	437	6	53,54,71		
Auxiliary machinery, internal combustion engines complete and parts	..	5,032	..	6,294	14	53,71		
Boilers, complete	..	978	..	1,117	*	64		
Steering gear and reduction gear, complete	..	128	..	787	5	53,63,84		
Marine machinery, complete, not specified above (excluding compressors and pumps)	..	2,986	..	2,966	27	52,54,56,64		
Parts of boilers, steering gear, reduction gear and of marine machinery not elsewhere specified	..	2,687	..	4,280	47	63,64,71,84		
Total value of marine machinery (excluding the value of installation work)		22,869		35,502	..			
Ships' or boats' fittings (blocks, masts, spars, oars, etc) sold separately	..	667	..	444	13	48,56,61,97		
Sub-contract, etc, work done for others during the year on new ships, boats, floating docks, etc, under construction	..	94	..	200	*	44,84,151		
Repair, maintenance and marine engineering work done in the year of the return to ships, etc	..	2,393	..	1,404	26	52,56,64,66		
Total		26,217		37,865	..			

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

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
	£'000	£'000
Steel tubes and iron castings	1,037(a)	376
Mechanical engineering products		
Industrial engines	6,798	2,894
Space heating, ventilating and air-conditioning equipment	38	124
Industrial (including process) plant and steelwork	1,139	1,708
Other	16,316	24,869
Scientific and electrical engineering	1,821	1,002
Other products	3,273	3,468
Building and civil engineering work		
Work done as main contractors	504	541
Work done as sub-contractors	2,209	1,469
Services rendered to other organisations (b)	3,288	4,043
Total value of goods sold without having been subjected to any manufacturing process (merchanted or factored)	2,559	4,019
Canteen takings	322	459
Total	39,303	44,972

(a) Includes steel castings.

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

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

Particulars for this table cannot be given as the details of quantities recorded were incomplete.

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

This table is not applicable to this industry.

TABLE 10 Purchases by larger establishments in the industry, 1963 and 1968

Establishments employing 25 or more persons: Analysis of returns received, United Kingdom

	1963		1968	
	Quantity	Cost	Quantity	Cost
Materials for use in production	Th.tons	£'000	Th.tons	£'000
Iron castings	26.2	2,795	16.3	2,210
Steel				
Bars and rods (including wire rods), angles, shapes and sections, girders, beams, joists and pillars rolled (not fabricated), including tube rounds and squares	113	5,577	131	6,778
Plates, 3 mm. thick and over	396	18,414	423	20,770
Sheets under 3 mm. thick (including electrical sheets)	5.3	374	8.7	518
Forgings (except drop forgings)	12.1	2,730	10.1	2,284
Castings	11.9	2,526	19.0	3,884
Drop forgings	1.0	236	0.7	164
Iron and steel not elsewhere specified except finished parts, wire and scrap	..	37	..	77
Wrought tubes and fittings for wrought tubes (including welded, seamless, conduits, etc)	15.7	1,872	14.3	1,684
Other	2.6	227	4.3	551
Chains and chain cable of iron and steel (excluding transmission, timing and conveyor chains)	..	215	..	167
Steel wire (including cable and ropes)	..	429	..	456
Light metals and non-ferrous metals in all forms except finished parts, wire and scrap	..	662	..	772
Aluminium and aluminium alloys	3.8	1,792	3.2	1,604
Brass and other copper alloys (including nickel silver and cupro-nickel, but excluding all other nickel alloys and cadmium copper) (a)				
Castings in the rough	1.8	743	1.6	1,148
Other	4.5	1,728	1.0	308
Copper (including cadmium copper) (b)	1.8	726	1.9	600
Nickel and nickel alloys (excluding nickel silver and cupro-nickel)	0.1	51	0.1	266
Tin	3.6	152	2.7	939
Solder, soft	..	19	..	67
Non-ferrous metal wire, not insulated	..	28	..	10
Insulated wires and cables	..	33	..	..
Flux covered electrodes for electric arc welding (including continuous electrodes)	..	1,180	..	2,260
Paint and varnish (including lacquers and stains)	..	995	..	1,050
Anti-fouling and anti-corrosive paints and compositions for use below the water line only	115	203	239	536
Other (including composition for deck sheathing)	803	1,299	688	1,137
General chemicals				205
Inorganic (including inorganic gases)	..	1,061(c)	..	1,239
Organic (including organic gases)	..	..	..	359

TABLE 10 (continued)

	1963		1968	
	Quantity	Cost	Quantity	Cost
Materials for use in production (continued)		£'000		£'000
Manufactures wholly or mainly of rubber (including synthetic rubber), balata and gutta-percha, including sheeting (d)	..	382	..	488
Glass in all forms, (including finished parts)	..	333	..	602
Asbestos				
Millboard	..	84	..	70
All other kinds (including finished parts)	..	332	..	529
Timber	Th.stds.		Th.stds.	
Softwood, sawn or planed, but not further prepared or manufactured	11.6	1,270	9.8	1,119
Hardwood, sawn or planed, but not further prepared or manufactured	..	278	..	463
Plywood, including blockboard, laminboard and battenboard	Th.cu.ft.		Th.cu.ft.	
Chipboard	519	791	364	599
Cork in all forms	..	378	..	633
Bolts, rivets, nuts and washers, screws, nails, tacks, etc	Th.sq.ft.		Th.sq.ft.	
Purchased components for incorporation in firms' finished products or for use in repair and maintenance work on customers' ships, etc	7,607	665	3,837	491
Propelling machinery complete	..	188	..	416
Internal combustion engines (including engine and boiler room auxiliaries)	..	269	1,454	166
1,500 b.h.p. and less	..	225	..	209
Exceeding 1,500 b.h.p.	..	1,616	..	76
Steam turbines (including engines and boiler room auxiliaries)	..	3,737	..	4,412
Marine boilers	..	13,996	..	17,043
Pumps	..	5,028	..	4,225
Propellers and propeller blades for ships	..	830	..	538
Industrial valves	..	3,410	..	2,259
Ball and roller bearings and parts thereof	..	1,197	..	2,020
Ships' boats (lifeboats, etc)	..	1,888	..	2,619
Radio communication and navigational aid (including radar) equipment	..	329	..	459
Electric motors	..	433	..	382
Electrical machinery, appliances and fittings of all kinds not elsewhere specified	..	1,146	..	2,189
Gears and gear wheels of metal	..	1,508	..	1,527
Measuring instruments and gauges and parts	..	5,010	..	6,474
Electronic (including valves)	..	442	..	855
Other	..	124	..	346
Scientific instruments and parts other than measuring instruments	..	589	..	574
Plastic goods moulded and fabricated	..	226	..	245
Fittings of non-ferrous metals and non-ferrous metal alloys not elsewhere specified	..	377	..	572
Furniture and upholstery	..	532	..	832
	..	838	..	3,571

Continued on next page.

TABLE 10 (continued)

	1963		1968	
	Quantity	Cost	Quantity	Cost
Materials for use in production (continued)		£'000		£'000
Purchased components for incorporation in firms' finished products or for use in repair and maintenance work on customers' ships, etc (continued)				
All other purchased components, whether driven by electric motor, internal combustion engine or steam including auxiliary deck machinery not elsewhere specified (such as winches, windlasses, capstans and motor generators) and refrigerating machinery, ventilating and air-conditioning machinery, bridge components, etc	..	34,953	..	35,632
	Th.gal.		Th.gal.	
	650	156	545	176
Lubricating oils and greases (including cutting oils and emulsions)	Th.cwt.		Th.cwt.	
	6.8	30	7.6	34
	..	30	..	42
Replacement parts for firms' own machinery, plant and vehicles, and accessories and consumable tools bought as replacement				
Tyres and other spare parts for firms' own road goods vehicles	..	2,397	..	205
Other				
	..		..	4,057
All other materials for use in production	..	17,224	..	24,237
Packaging materials	..	181	..	236
Fuel and electricity (e)	Th.tons		Th.tons	
Coal	71.9	499	..	200
Coke (including screenings) and manufactured fuel	45.8	444	28.3	344
	..	49		
	Th.gal.		Th.gal.	
Derv fuel and motor spirit for use in road vehicles	1,430	249	1,267	312
	..	56	..	69
Other liquid fuels (including creosote/pitch mixtures, etc and liquefied petroleum gases)	16,854	831	21,167	926
			..	693(f)
	Th.therms		Th.therms	
Gas	11,303	512	11,466	798
	..	119		
	Th.kWh		Th.kWh	
Electricity	403,446	2,698	707,099	5,190
	..	759		
Total cost of materials and fuel		156,608		185,204
Goods purchased for merchanting		2,188		3,342
Canteen purchases		417		656
Total cost of purchases		159,213		189,202

(a) For 1963 cadmium copper was not specifically excluded.

(b) For 1963 cadmium copper was not specifically included but blister was specifically excluded.

(c) Gases, compressed only for 1963.

(d) For 1963 described as 'Rubber, including hard rubber, balata, gutta-percha and synthetic rubber in all forms including finished parts'.

(e) The total quantity of electricity generated in establishments employing 25 or more persons in this industry was 5,818 Th.kWh in 1963. Owing to the risk of disclosure of information relating to individual firms details cannot be given for 1968.

(f) 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.	768	984
Transport costs			
Wages and salaries	£'000	558	1,059
Derv fuel and motor spirit	"	305	380
Tyres and other spare parts for road goods vehicles	"	..	205
Payments to other organisations for transport	"	1,111	1,311
	{ by road		
	{ by rail and other means excluding postal services		
Costs of operating road goods vehicles			
Insurance	"	46	56
Vehicle licences	"	42	77
Depreciation	"	291	230
Payments to other organisations for repairs and maintenance	"	85	108
Total	"	2,436(a)	4,246

(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 establishments, 1963 and 1968 (a)

Establishments employing 25 or more persons:
Analysis of returns received, United Kingdom

	Amounts payable	
	1963	1968
Repairs and maintenance to	£'000	£'000
Buildings	2,146	3,088
Road goods vehicles	85	108
Plant, machinery and other capital equipment	663	1,089
Insurance, licensing and depreciation of road goods vehicles (b)	378	362
Rates, excluding water rates	2,732	3,235
Hire of plant and machinery	536	1,099
Postage, telephone, telegrams, cables and telex (c)	673	1,107
Total	7,213	10,087

(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.

TABLE 13 Percentage analysis of twelve-month periods covered by returns from larger establishments, 1968

Establishments employing 25 or more persons:
Analysis of returns received, United Kingdom

Year ended	Percentage of total returns received	Percentage of total number employed
1968	Per cent.	Per cent.
April (a)	1.5	1.1
May	1.5	0.4
June	4.0	5.0
July	1.8	0.4
August	2.7	6.4
September	10.0	4.3
October	1.2	0.1
November	1.8	0.6
December	48.3	48.0
1969		
January	2.1	0.4
February	1.5	0.3
March	21.6	32.5
April (b)	1.8	0.4
	100	100

(a) From 6 April.

(b) To 5 April.