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MANUFACTURING INDUSTRIES 1965-66

No. 32
GAS WORKS



COMMONWEALTH BUREAU OF CENSUS AND STATISTICS
CANBERRA, AUSTRALIA

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NO. 32. GAS WORKS

CONTENTS

<u>Table</u>		<u>Page</u>
	Explanatory notes	2
1.	Gas works : Summary, Australia 1961-62 to 1965-66	4
2.	Gas works : Summary, States, 1965-66	5
3.	Gas works : Average salaries and wages, output, production etc. per employee, Australia, 1961-62 to 1965-66	5
4.	Gas works : Persons employed, Australia, 1961-62 to 1965-66	6
5.	Gas works : Persons employed by occupational status, Australia, 1965-66	6
6.	Gas works : Persons employed by occupational status, Australia, 1961-62 to 1965-66	7
7.	Gas works : Persons employed by age and sex, Australia, 1961-62 to 1965-66	7
8.	Gas works : Class of engine and rated horsepower, Australia, 1963-64 to 1965-66	8
9.	Gas works : Power, fuel, light etc. used, Australia, 1963-64 to 1965-66	8
10.	Gas works : Value of land and buildings, plant and machinery, Australia, 1961-62 to 1965-66	9
11.	Selected materials used in gas works : Australia, 1961-62 to 1965-66	9
12.	Gas produced : Australia, 1965-66	9
13.	Gas produced : Australia, 1961-62 to 1966-67	10
14.	Principal articles produced in all works or factories, Australia, 1964-65 and 1965-66	10

EXPLANATORY NOTES

GENERAL. The range of bulletins in this series for 1965-66 is the same as for 1964-65. A complete list of the series is shown inside the back cover. Where a number of industries are combined in one bulletin, the introductory paragraph on page 4 specifies the industries so included.

Statistics of the number of factories, persons employed, salaries and wages, value of fuel, materials, production and output, etc., for 1965-66 include details for the Northern Territory and Australian Capital Territory. Prior to 1964-65 details for the Territories were excluded. Statistics of materials used and articles produced do not include details for the Territories.

CLASSIFICATION OF FACTORIES. For purposes of industry classification, factories are classified to sub-classes according to the nature of their products. Where two or more distinct types of industrial activity are carried on in one establishment, a separate return is obtained, wherever practicable, for each activity, in order to allow classification on this basis. In cases where this is not practicable, factories are classified according to predominant activity. These cases are encountered most frequently in the Metal trades (e.g. General engineering firms also producing Agricultural implements or Stoves, etc.) and to a lesser degree in factories concerned with Skins, Leather, Clothing and Wood products.

Each of the summaries in the Manufacturing Industries series relates, in general, to the operations of factories classified to the industry specified. However, the statistics of articles produced represent total recorded production in all factories, irrespective of industry classification.

BASIS OF THE STATISTICS. The scope of the factory statistics is fully explained in the annual bulletin Manufacturing Industry which contains comprehensive statistics both for all factory sub-classes separately and in total.

Briefly, a "factory" is defined as an establishment in which four or more persons are employed or where power (other than manual) is used in any manufacturing process. The figures do not include details relating to small establishments not classified for statistical purposes as factories.

All persons employed in the manufacturing activities of the factory are counted as factory employees. The figures relating to employment, therefore, include working proprietors as well as out-workers, but exclude all those engaged in selling and distribution, such as salesmen, travellers, collectors, carters engaged solely on outward delivery of manufactured goods, and retailing storemen.

The value of materials, etc., used includes the value, in the usual sense, of the materials used, stores used, containers, tools replaced and materials used in repairs to plant. In general, it does not include the value of customers' articles or materials repaired, assembled or treated by the factory.

The value of power, fuel, light, etc., used includes the cost of lubricants and water.

The value of factory output is the value of the goods manufactured or their value after passing through the particular process of manufacture and includes the amount received for repair work, work done on commission and receipts for other factory work. The basis of valuation of the output is the selling value of the goods at the factory, exclusive of all delivery costs and charges and excise duties, but inclusive of bounty and subsidy payments to the manufacturer of the finished article.

The value of production is the value added to materials by the process of manufacture. It is calculated by deducting from the value of factory output the value (at the factory) of the materials used, containers and packing, power, fuel and light used, tools replaced and materials used in repairs to plant (but not depreciation charges). The value of production is the source from which, in addition to wages and salaries, such items as interest, depreciation, profits, taxation, advertising and other sundry charges are met. As details of these other costs of production are not collected, the amount of profit resulting from factory operations cannot be ascertained from figures contained herein.

There are many miscellaneous expenses, such as maintenance of buildings, etc., depreciation, workers' compensation insurance, other insurances, pay-roll tax, income tax, advertising, interest on borrowed money, bad debts and many other sundry charges, which are not taken into account. Consequently it must not be inferred that, when wages and salaries are deducted from value of production, the whole of the surplus is available for profits.

ROUNDING OF FIGURES. Any discrepancies between totals and sums of components in tables are due to rounding.

This bulletin refers, in general, to those factories which are classified to sub-classes 1604 (Gasworks-Government), 1605 (Gasworks-Local authority) and 1606 (Gasworks-Companies) of the Factory Classification (1945).

TABLE 1. - GAS WORKS : SUMMARY

AUSTRALIA

Year	Factories	Persons employed	Salaries and wages paid	Power, fuel, light, etc. used	Value of materials, etc. used	Value of production	Value of output
	(a) No.	(a)(2) No.	(b)(3) \$'000	(c)(4) \$'000	(d)(5) \$'000	(e)(6) \$'000	(f)(7) \$'000
1961-62	85	3,674	9,260	6,156	28,360	28,108	62,624
1962-63	87	3,561	9,288	5,710	26,651	31,740	64,100
1963-64	87	3,449	9,157	5,627	26,586	33,289	65,502
1964-65	89	3,272	9,200	5,538	26,708	35,018	67,263
1965-66	87	3,055	9,325	5,186	27,349	34,089	66,624

BY TYPE OF OWNERSHIP, 1965-66

Government	10	1,124	3,798	1,248	7,341	12,860	21,449
Local authority	23	211	590	382	1,091	1,228	2,702
Companies	54	1,720	4,938	3,556	18,117	20,001	42,473

(a) Average over whole year; includes working proprietors. (b) Excludes amounts drawn by working proprietors. (c) Includes water and lubricating oil but excludes the value of coke produced and used in own works in some States. (d) Includes value of containers, packing, etc., replacement of tools and repairs to plant. (e) Value of production equals column (7) less total of columns (4) and (5). (f) Value at the factory, of gas and other goods produced. Gas is valued at point of consumption less costs of distribution. Other articles produced are valued at selling value at works, excluding all delivery costs and charges.

TABLE 2. - GAS WORKS : SUMMARY
STATES, 1965-66

Particulars	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
	Number								
Factories	34	30	14	4	3	2	..	..	87
Persons employed (a) -									
Males	1,010	1,320	244	(h)	(h)	(h)	..	..	3,027
Females	12	9	5	(h)	(h)	(h)	..	..	28
TOTAL	1,022	1,329	249	(h)	(h)	(h)	..	..	3,055
	\$'000								
Salaries and wages paid (b)	3,107	4,339	615	(h)	(h)	(h)	..	..	9,325
Value of -									
Power, fuel, light etc. used (c)	3,448	1,183	108	(h)	(h)	(h)	..	..	5,186
Materials, etc. used. (d)	10,847	9,522	2,162	(h)	(h)	(h)	..	..	27,349
Production (e)	13,489	15,507	2,270	(h)	(h)	(h)	..	..	34,089
Output (f)	27,785	26,212	4,540	(h)	(h)	(h)	..	..	66,624
Land and buildings (g)	3,681	9,579	1,649	(h)	(h)	(h)	..	..	16,393
Plant and machinery (g)	17,472	32,323	3,888	(h)	(h)	(h)	..	..	65,864
	Horsepower								
Rated hp of engines ordinarily in use	19,519	26,998	3,268	(h)	(h)	(h)	..	..	59,127

For footnotes (a) to (f) see Table 1. (g) Depreciated or book values at end of year.
(h) Not available for publication.

TABLE 3. - GAS WORKS
AVERAGE SALARIES AND WAGES, OUTPUT, PRODUCTION ETC. PER EMPLOYEE
AUSTRALIA

Year	Salaries and wages per employee (a)	Value of output per person engaged (b)	Value of production per person engaged (b)	Ratio of salaries and wages to value of production
	\$	\$	\$	\$
1961-62	2,520	17,046	7,650	32.94
1962-63	2,608	18,000	8,914	29.26
1963-64	2,654	18,992	9,652	27.51
1964-65	2,812	20,557	10,702	26.27
1965-66	3,052	21,808	11,158	27.36

(a) Excludes working proprietors and amounts drawn by them. (b) Includes working proprietors.

TABLE 4. - GAS WORKS
PERSONS EMPLOYED (a) : AUSTRALIA

Persons employed in each factory	1961-62		1962-63		1963-64		1964-65		1965-66	
	No. of fac-tories	Number em-ployed	No. of fac-tories	Number em-ployed	No. of fac-tories	Number em-ployed	No. of fac-tories	Number em-ployed	No. of fac-tories	Number em-ployed
Under 4	7	14	10	17	13	17	16	27	19	36
4	7	28	8	32	5	20	4	16	5	20
5 to 10	29	208	24	167	27	194	27	195	30	215
11 to 20	20	293	23	328	21	324	21	310	16	239
21 to 50	10	336	8	250	7	219	8	232	4	115
51 to 100	3	252	4	304	4	303	3	249	3	243
101 to 200	5	743	6	847	6	825	7	974	7	927
201 and over	4	1,800	4	1,616	4	1,547	3	1,294	3	1,260
TOTAL	85	3,674	87	3,561	87	3,449	89	3,297	87	3,055
Average number employed per factory	43		41		40		37		35	

(a) Average number employed during the period of operation whether for the whole or only part of the year. Includes working proprietors.

TABLE 5. - GAS WORKS
PERSONS EMPLOYED (a) BY OCCUPATIONAL STATUS
AUSTRALIA, 1965-66

Occupational status	Type of ownership			
	Government	Local authority	Other	Total
Working proprietors	..	..	..	..
Managerial and clerical staff, including salaried managers and working directors	102	31	145	278
Chemists, draftsmen and other laboratory and research staff	55	1	68	124
Workers in factory (skilled and unskilled), firemen and overseers, carters (excluding delivery only), messengers etc.	967	179	1,507	2,653
TOTAL	1,124	211	1,720	3,055

(a) Average number employed calculated on a "whole year" basis, i.e. in factories working less than the full year, the average numbers are reduced to whole year equivalents.

TABLE 6. - GAS WORKS
PERSONS EMPLOYED (a) BY OCCUPATIONAL STATUS
AUSTRALIA

Occupational Status	1961-62	1962-63	1963-64	1964-65	1965-66
MALES -					
Working proprietors	..	..	..	..	..
Managerial and clerical staff including salaried managers and working directors	252	255	258	260	254
Chemists, draftsmen and other laboratory and research staff	132	138	133	129	120
Workers in factory (skilled and unskilled), foremen and overseers, carters (excluding delivery only), messengers etc.	3,262	3,143	3,035	2,860	2,653
	3,646	3,536	3,426	3,249	3,027
TOTAL { <u>Males</u>	28	25	23	23	28
{ <u>Females (b)</u>	3,674	3,561	3,449	3,272	3,057
{ <u>Persons</u>					

(a) See note (a) Table 5. (b) Mainly clerical staff.

TABLE 7. - GAS WORKS
PERSONS EMPLOYED BY AGE AND SEX : AUSTRALIA
(excluding working proprietors)

Last pay day in June	Under 16 years	16 to 20 years	21 years and over	Total all ages
MALES				
1962	3	53	3,637	3,693
1963	2	57	3,485	3,544
1964	2	62	3,364	3,428
1965	1	46	3,146	3,193
1966	1	51	3,004	3,056
FEMALES				
1962	..	9	18	27
1963	..	7	18	25
1964	..	5	18	23
1965	..	6	16	22
1966	..	10	18	28

TABLE 8. - GAS WORKS
CLASS OF ENGINE AND RATED HORSEPOWER : AUSTRALIA

Class of engine	Rated horsepower of engines					
	Ordinarily in use			In reserve or idle		
	1963-64	1964-65	1965-66	1963-64	1964-65	1965-66
Steam -						
Reciprocating	6,424	7,078	7,138	3,270	3,159	3,692
Turbine	9,452	8,498	9,486	3,120	3,496	3,507
Internal combustion -						
Gas	1,281	1,281	4,725	233	338	3,002
Petrol and other light oils	1,674	1,696		1,471	2,284	
Heavy oils	1,980	1,980	..	66		
Water	..	..	..	..	..	5
<u>Total hp prime movers</u>	20,811	20,533	21,349	8,094	9,343	10,206
Motors driven by electricity -						
Purchased	35,992	38,169	37,778	4,622	4,830	5,198
Own generation	(a)1,257	(a)3,868	(a)4,815	1,362	1,190	1,235
<u>Total hp electric motors</u>	40,249	42,037	42,593	5,984	6,020	6,433
<u>TOTAL POWER EMPLOYED</u>	56,803	58,702	59,127	14,078	15,363	16,639

(a) These motors are driven by electricity generated by prime movers and to avoid duplication are excluded from statistics of total power employed.

TABLE 9. - GAS WORKS
POWER, FUEL, LIGHT ETC. USED : AUSTRALIA

Particulars	Unit of quantity	Quantity			Value (\$'000)		
		1963-64	1964-65	1965-66	1963-64	1964-65	1965-66
Power, fuel and light -							
Coal - Black	ton	662	1,233	1,873	6	13	12
Brown	"	84,226	70,784	82,000	184	150	165
Brown coal briquettes	"	209	1,339	..	2	10	..
Coke	"	228,322	220,633	214,262	2,957	2,899	2,739
Wood	"	2,296	930	550	11	4	3
Fuel oil	'000 gal	740	781	990	47	53	64
Tar (fuel)	ton	24,146	21,185	22,618	360	335	336
Electricity	-	}	}	}	1,393	1,370	1,288
Coal gas	-				6	3	..
Other (charcoal, etc.)	-				198	228	141
Water and lubricating oil	-				463	473	437
<u>TOTAL</u>		(a)	(a)	(a)	5,627	5,538	5,186

(a) Value only available.

TABLE 10. - GAS WORKS
VALUE OF LAND AND BUILDINGS, PLANT AND MACHINERY ETC.

AUSTRALIA

Year	Book values as at 30 June (a)		Additions and replacements made during year		Depreciation allowed during year	
	Land and buildings	Plant and machinery	Land and buildings	Plant and machinery	Land and buildings	Plant and machinery
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1961-62	15,036	59,691	804	4,110	180	2,700
1962-63	15,072	59,382	486	4,072	403	2,816
1963-64	15,327	60,559	347	4,546	360	3,233
1964-65	16,134	63,697	664	6,904	340	3,706
1965-66	16,393	65,864	355	4,900	386	4,126

(a) Includes estimated value of rented premises and machinery.

TABLE 11. - SELECTED MATERIALS USED IN GAS WORKS : AUSTRALIA (a)

Materials used	Commodity code no.	Unit of quantity	1961-62	1962-63	1963-64	1964-65	1965-66
Coal, carbonised, (b) black	261.18	'000 ton \$'000	1,615 18,386	1,455 15,947	1,419 15,268	1,330 14,051	1,195 12,492
Petroleum gas (incl. refinery gas and L.P.G.) purchased	434.32	'000therms (c) \$'000	(d)	67,829	70,396	89,100	97,956
Oil (for gasmaking) (e)	432.30	'000 gal \$'000	13,609 1,223	18,791 1,388	26,040 1,715	29,038 1,657	34,188 1,956

(a) Excludes Northern Territory and Australian Capital Territory. (b) Excludes brown coal briquettes used as a material in Victorian gas works. (c) therm = 100,000 British Thermal Units (B.T.U.). (d) Not available. (e) Used as a material, not as a fuel.

TABLE 12. - GAS PRODUCED : AUSTRALIA (a), 1965-66

(NOTE. These details relate to production in all factories irrespective of classification).

Item	Commodity code no.	Unit of quantity	Quantity
Gas, excluding natural gas			
Gas, output and sales -			
Sold	434.02	million cu ft	49,036
Used in own works	434.04	"	161
Lost etc.	434.08	"	6,545
Total available for issue	434.09	"	55,742
Sold	434.12	'000 therms (b)	263,811
Used in own works	434.14	"	938
Lost etc.	434.18	"	36,146
Total available for issue	434.19	"	300,895

(a) Excludes Northern Territory and Australian Capital Territory. (b) 1 Therm = 100,000 British Thermal Units (B.T.U.)

TABLE 13. - GAS PRODUCED IN AUSTRALIA (a)

(NOTE. These details related to production in all factories irrespective of classification).

Year	Gas produced	
	cubic feet	therms (b)
	'000	'000
1961-62	50,246,626	264,100
1962-63	51,351,000	272,721
1963-64	53,208,660	282,574
1964-65	55,259,596	292,185
1965-66	55,741,606	300,895
1966-67(p)	58,055,962	298,963

(a) Excludes Northern Territory and Australian Capital Territory. (b) 1 Therm = 100,000 British Thermal Units (B.T.U.) (p) Preliminary, subject to revision.

TABLE 14. - PRINCIPAL ARTICLES PRODUCED IN ALL WORKS OR FACTORIES IN AUSTRALIA (a)

(NOTE. These details relate to production in all factories, irrespective of classification).

Item	Commodity code no.	Unit of quantity	1964-65		1965-66	
			Quantity	Value (\$'000)	Quantity	Value (\$'000)
Coke	435.12	ton	632,501	(b)	599,301	(b)
Metallurgical coke	435.22	'000 ton	3,118	45,766	3,179	47,302
Coke breeze	435.32	ton	471,787	6,194	492,801	6,619
Ammoniacal liquor	436.02	-	(c)	93	(c)	70
Tar - Crude - For purposes other than refining	436.72	'000 gal	} 56,439	(b) {	17,971	(b)
For refining in own works	436.74	"			36,333	(b)
Refined, incl. road surfacing materials incorporating bitumen	436.78	-	44,029	3,643	44,516	3,500

(a) Excludes Northern Territory and Australian Capital Territory. (b) Quantity only available. (c) Value only available.

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12 JANUARY 1968

NOTE. Inquiries concerning these statistics may be made in Canberra by telephoning 63 9111 Extension 2267 or, in each State capital, by telephoning the office of the Bureau of Census and Statistics.