

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS, CANBERRA
AUSTRALIA

MANUFACTURING INDUSTRIES,

1954-55

NO. 32 GAS WORKS

Prepared Under Instructions from
THE RIGHT HONORABLE THE TREASURER,

by

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P R E F A C E.

1. GENERAL: The Bulletins in the series for 1954-55 are listed on the back of the cover of this Bulletin and incorporate the same range of industries as the 1953-54 series.

Where a number of industries are combined in one Bulletin the introductory paragraph on Page 3 specifies the industries so included.

2. CLASSIFICATION OF FACTORIES: For purposes of industry classification, factories in Australia are classified according to the nature of their product. 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 and 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, generally, to the operations of factories classified to the industry specified. Figures shown in the quantity tables herein represent total recorded production of the articles listed and include quantities produced, as subsidiary production in industries otherwise classified.

3. BASIS OF THE STATISTICS: The scope of the factory statistics is fully explained in the annual Secondary Industries Bulletin.

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. It should be noted that details relating to small establishments not classified for statistical purposes as factories are not included in the figures shown herein.

All persons employed in the manufacturing activities of the factory are counted as factory employees. The figures relating to employment, therefore, 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 figures, however, do include, proprietors who work in their own businesses as well as "out-workers".

The value of materials 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 output is the selling value, 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) of all goods made during the year. In addition it includes the value of other work done, such as repair work, assembling and making-up for customers.

The value of production is the value added to raw 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 such items as wages, interest, depreciation, profits, taxation, advertising and other sundry charges are met. As full details of costs of production are not collected, the amount of profit resulting from factory operations cannot be ascertained from the figures contained herein.

S. R. CARVER

ACTING COMMONWEALTH STATISTICIAN

MANUFACTURING INDUSTRIES, AUSTRALIA, 1954-55GAS WORKS

1. SUMMARY OF STATISTICS. The following table furnishes a summary of the principal statistics of the factories classified as Gas Works in Australia in the form of (A) a comparative summary for the years 1938-39, 1945-46 and 1952-53 to 1954-55 and (B) a dissection by Ownership for 1954-55.

TABLE 1 : GAS WORKS : AUSTRALIA

Year	Factories (1) Number	Persons Employed (a)(2) Number	Salaries & Wages Paid (b)(3) £'000	Power, Fuel and Light etc. Used (c)(4) £'000	Value of Materials, etc. Used (d)(5) £'000	Value of Production (e)(6) £'000	Value of Output (f)(7) £'000
<u>(A) COMPARATIVE SUMMARY</u>							
1938-39	107	2,931	785	251	1,872	2,694	4,817
1945-46	104	3,502	1,194	448	3,965	3,313	7,726
1952-53	99	4,199	3,553	2,080	15,576	8,473	26,129
1953-54	98	4,141	3,767	2,244	15,249	8,121	25,614
1954-55	97	4,103	3,883	2,291	15,186	9,104	26,581

(B) DISSECTION BY OWNERSHIP : 1954-55

Type of Ownership							
Government	10	1,254	1,245	167	4,412	2,187	6,766
Local Authority	27	196	170	91	390	266	747
Companies	60	2,653	2,468	2,033	10,384	6,651	19,068

(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 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.

In the following table particulars are given for each State during the year 1954-55.

TABLE 2 : GAS WORKS : STATES, 1954-55

Particulars	N.S.W. No.	VIC. No.	Q'LD. No.	S.A. No.	W.A. No.	TAS. No.	AUST. No.
Factories	39	33	16	3	4	2	97
Persons Employed:-							
Males	1,542	1,462	376	(a)	200	(a)	4,071
Females	16	4	9	(a)	-	(a)	32
Total	1,558	1,466	385	(a)	200	(a)	4,103
	£'000	£'000	£'000	£'000	£'000	£'000	£'000
Salaries and Wages Paid	1,560	1,404	305	(a)	188	(a)	3,883
Value of -							
Power, Fuel and Light, etc. Used	2,012	134	27	(a)	105	(a)	2,291
Materials, etc. used	6,193	5,833	948	(a)	633	(a)	15,186
Production	4,757	2,752	798	(a)	258	(a)	9,104
Output	12,962	8,719	1,773	(a)	996	(a)	26,581
Land & Buildings (b)	1,354	625	284	(a)	140	(a)	2,488
Plant & Machinery (b)	5,860	7,218	1,732	(a)	1,553	(a)	19,134
	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
H.P. of Engines ordinarily in use	18,786	8,838	2,275	(a)	1,245	(a)	33,389

(a) Not available for publication. These figures are included in the total for Australia. (b) Depreciated or book values at end of year.

See also notes to Table 1 above.

2. AVERAGE SALARIES, OUTPUT AND PRODUCTION. Particulars of the average salary and wage paid, together with the average values of output and production per person engaged and the ratio of salaries and wages to the value of production, are shown in the following table for the years 1938-39, 1945-46 and 1952-53 to 1954-55.

TABLE 3 : GAS WORKS : AVERAGE SALARIES AND WAGES PAID, OUTPUT, 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
	£	£	£	%
1938-39	268	1,644	919	29.15
1945-46	341	2,206	946	36.03
1952-53	846	6,223	2,018	41.94
1953-54	909	6,185	1,961	46.39
1954-55	946	6,478	2,219	42.65

(a) Excludes Working Proprietors and amounts drawn by them.

(b) Includes Working Proprietors.

3. MATERIALS USED AND ARTICLES PRODUCED. In the following table details are given of the quantities and values of materials used and gas produced in Australia for the year 1954-55.

TABLE 4 : *MATERIALS USED AND GAS PRODUCED IN GAS WORKS : AUSTRALIA, 1954-55

Particulars	Unit of Quantity	Quantity	Value (£)
<u>Materials Used -</u>			
Coal carbonized	ton	2,063,087	12,479,418
Oil (a)	gallon	21,567,745	1,364,005
<u>Gas Produced -</u>			
Gas Sold	'000 cu. ft.	37,555,464	(b) 19,385,470
Gas used in own works	"	142,605	(c)
Gas lost	"	5,766,824	(c)
<u>Total Gas Sold, Used or Lost:</u>	"	43,464,893	(c)

(a) Used as Material, not as Fuel. (b) Amount received less costs of distribution. (c) Quantity only available.

The following table shows details of the principal by-products of Gas Works. Some of the items are also produced in other works, and the table has accordingly been extended to show separately (i) production in Gas Works and (ii) production in all Australian factories.

TABLE 5 : PRINCIPAL BY-PRODUCTS OF GAS WORKS : AUSTRALIA, 1954-55

Particulars	Unit of Quantity	Produced in Gas Works		Produced in All Factories	
		Quantity	Value (£)	Quantity	Value (£)
Coke	ton	1,099,859	(a)	(b) 3,146,649	(a)
Coke Breeze	"	202,918	(a)	331,602	(a)
Tar - Crude (c)	gallon	(d) 46,608,614	(a)	46,608,614	(a)
Refined, for sale	"	(d) 17,120,213	(d) 497,866	17,120,213	497,866
Tar Oils, Crude	"	(d) 4,630,532	(d) 324,648	4,630,532	324,648
Ammoniacal Liquor	"	(d) 26,543,415	(d) 115,569	26,543,415	115,569
Sulphate of Ammonia	ton	(e)	(e)	78,434	2,247,744

(a) Not available. (b) Includes 2,046,790 tons of Metallurgical Coke.

(c) Includes quantities produced and used in works producing them. (d) Includes

production in other works, details of which are not available for separate publication.

(e) Sections of Gasworks producing Sulphate of Ammonia are separately classified and total production is shown in the last two columns.

For comparative purposes the next table gives particulars of the quantities of (i) coal used and gas and coke produced in Gas Works and (ii) coal used and coke produced in Coke Works in Australia during the years 1938-39, 1945-46 and 1952-53 to 1954-55, together with preliminary figures for 1955-56.

TABLE 6 : COAL CARBONIZED, GAS AND COKE PRODUCED : AUSTRALIA

Year	Gas Works			Coke Works	
	Coal Used	Gas Produced	Coke Produced	Coal Used	Metallurgical Coke Produced
	Tons	'000 cub.ft.	Tons	Tons	Tons
1938-39	1,176,629	21,472,303	757,046	1,707,434	1,164,873
1945-46	1,759,429	31,954,138	1,027,157	1,482,576	986,005
1952-53	2,081,363	40,722,128	1,071,106	3,071,147	1,858,428
1953-54	2,046,694	42,100,068	943,344	3,251,720	2,010,404
1954-55	2,063,087	43,464,893	1,099,859	3,314,413	2,046,790
1955-56(a)	(b)	44,699,300	(b)	(b)	2,075,946

(a) Preliminary; subject to revision.

(b) Not yet available.

4. **EMPLOYMENT.** The numbers of persons employed shown in Tables 1, 2, 8 and 9 represent the average numbers employed over the whole year. In the following table, the factories have been classified for the year 1938-39, 1945-46 and 1952-53 to 1954-55 according to the average number employed during the actual period worked.

TABLE 7 : GAS WORKS : CLASSIFIED ACCORDING TO PERSONS EMPLOYED : AUSTRALIA

No. of persons employed in each Factory	1938-39		1945-46		1952-53		1953-54		1954-55	
	No. of Factories	No. Employed	No. of Factories	No. Employed	No. of Factories	No. Employed	No. of Factories	No. Employed	No. of Factories	No. Employed
Under 4	45	106	17	41	11	31	11	30	10	27
4	10	40	13	52	10	40	6	24	7	28
5 to 10	17	117	33	220	31	225	35	245	35	238
11 to 20	17	233	13	192	16	241	17	251	19	288
21 to 50	10	329	17	584	17	528	16	475	13	382
51 to 100	2	162	3	196	5	299	4	252	4	262
101 to 200	6	1,944	4	592	5	801	5	819	5	833
201 & over			4	1,625	4	2,064	4	2,058	4	2,057
Total:	107	2,931	104	3,502	99	4,229	98	4,154	97	4,115
Average No. employed per Factory	27		34		43		42		42	

Further details of employment are furnished in the next three tables. In Table 8, the numbers of persons employed are shown according to the nature of their employment for the year 1954-55.

TABLE 8 : GAS WORKS : PERSONS EMPLOYED ACCORDING TO OCCUPATIONAL STATUS : AUSTRALIA, 1954-55

Occupational Status	Type of Ownership			
	Government	Local Authority	Other	Total
Working Proprietors	-	-	-	-
Managerial and Clerical Staff, including Salaried Managers and Working Directors	57	27	192	276
Chemists, Draftsmen and Other Laboratory and Research Staff	38	-	81	119
Foremen and Overseers	56	9	135	200
Workers in Factory (Skilled and Unskilled)	1,098	160	2,128	3,386
Carters (excl. Delivery only), Messengers and Persons Working regularly at Home	5	-	117	122
Total:	1,254	196	2,653	4,103

In Table 9, the numbers of males employed are shown for the years 1938-39, 1945-46 and 1952-53 to 1954-55 according to the nature of their employment, but because of the change in classification of occupational status adopted in 1945-46, group comparison between 1938-39 and later years shown is not possible.

TABLE 9 : GAS WORKS : PERSONS EMPLOYED : MALES CLASSIFIED ACCORDING TO
OCCUPATIONAL STATUS : AUSTRALIA

Occupational Status	1938-39	1945-46	1952-53	1953-54	1954-55
<u>MALES</u>					
Working Proprietors ..	-	1	-	-	-
Managerial and Clerical Staff including Salaried Managers and Working Directors	}	}	}	}	}
Chemists, Draftsmen and Other					
Laboratory and Research Staff ..					
Foremen and Overseers ..					
Workers in Factory (Skilled and Unskilled)	2,522	103	118	109	116
Other (Carters, Messengers, etc.)	167	212	212	212	200
	354	2,924	3,494	3,428	3,385
	52	114	120	121	
(Males	2,876	3,470	4,171	4,112	4,071
Total (Females (a)	55	32	28	29	32
(Persons	2,931	3,502	4,199	4,141	4,103

(a) Mainly Clerical Staff.

In the following table the numbers of persons employed in June, in the years 1939, 1946 and 1953 to 1955 are shown according to age and sex distribution.

TABLE 10 : GAS WORKS : DISTRIBUTION OF EMPLOYEES ACCORDING TO AGE AND SEX :
AUSTRALIA

(Excluding Working Proprietors)

June	Under 16 Years	16 years	17 years	18 years	19 years	20 years	Total 16 to 20 Years	21 years and over	Total All Ages
<u>MALES</u>									
1939(a)	8	(b)	(b)	(b)	(b)	(b)	118	2,785	2,911
1946(a)	11	9	15	34	25	14	97	3,538	3,646
1953(c)	7	4	10	5	11	8	38	4,139	4,184
1954(c)	3	6	5	13	10	11	45	4,073	4,121
1955(c)	9	7	20	13	21	20	81	4,060	4,150
<u>FEMALES</u>									
1939(a)	-	(b)	(b)	(b)	(b)	(b)	12	44	56
1946(a)	-	1	1	1	1	2	6	26	32
1953(c)	-	-	1	2	4	3	10	18	28
1954(c)	1	1	2	3	1	6	13	15	29
1955(c)	-	4	3	2	2	1	12	19	31

- (a) Pay day nearest 15th June.
(b) Details not collected.
(c) Last pay day in June.

5. POWER EQUIPMENT. Statistics of the power equipment installed are given in the next table. The details given show the rated horse-power of the engines ordinarily in use together with those in reserve or idle.

TABLE 11 : GAS WORKS : TYPES AND RATED HORSE-POWER OF ENGINES :
AUSTRALIA

Class of Engine	Rated Horse-power of Engines					
	Ordinarily in Use			In Reserve or Idle		
	1938-39	1953-54	1954-55	1938-39	1953-54	1954-55
Steam - Reciprocating	5,365	7,712	8,340	1,147	1,836	1,817
Turbine	6,390	7,167	10,139	1,394	1,362	1,285
Internal Combustion -						
Gas	3,787	1,951	520	1,023	505	562
Petrol or other Light Oils	30	452	505	3	202	204
Heavy Oils	-	70	20	4	141	46
Water	-	-	-	-	-	-
<u>Total, Prime Movers:</u>	15,572	17,388	19,524	3,571	4,046	3,914
Motors driven by electricity -						
Purchased	2,333	12,667	13,865	931	5,050	4,935
Own Generation	(a)6,948	(a)7,928	(a)8,564	962	1,271	1,408
<u>Total, Electricity:</u>	9,281	20,595	22,429	1,893	6,321	6,343
<u>TOTAL POWER EMPLOYED:</u>	17,905	30,055	33,389	5,464	10,367	10,257

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

6. POWER, FUEL AND LIGHT, ETC. USED. Details of the quantities and values of the various items of power, fuel and light, etc., used are shown in the following table for the years 1938-39, 1953-54 and 1954-55.

TABLE 12 : GAS WORKS : POWER, FUEL AND LIGHT, ETC. USED : AUSTRALIA

Particulars	Unit of Quantity	Quantity			Value (£)		
		1938-39	1953-54	1954-55	1938-39	1953-54	1954-55
Power, Fuel and Light -							
Coal - Black ..	ton	1,590	8,837	11,359	1,503	45,808	68,576
Coke ..	"	136,797	267,062	271,634	145,352	1,448,206	1,473,117
Wood ..	"	4,289	3,426	4,743	2,379	6,406	10,417
Fuel Oil ..	'000 gal.	3,115	6	2,000	45,452	448	221
Tar (Fuel) ..	"		7,449	8,903		185,707	220,812
Electricity ..	-	(a)	(a)	(a)	17,587	175,310	152,297
Other (Charcoal, etc.) ..	-	(a)	(a)	(a)	3,575	220,690	192,117
Water & Lubricating Oil Used ..	-	(a)	(a)	(a)	34,935	161,498	166,263
<u>Total:</u>		(a)	(a)	(a)	250,786	2,244,073	2,290,820

(a) Value only available.

7. VALUE OF LAND AND BUILDINGS, PLANT AND MACHINERY. Particulars of the book values of premises occupied and plant installed at the 30th June for the years 1938-39, 1945-46 and 1952-53 to 1954-55 are shown in the next table. Details of the values of additions and replacements made and depreciation allowed during the same periods are also shown. It should be noted that the amounts shown are those recorded by factories which were operating during each year and that changes in their numbers, as well as other factors, affect comparison from year to year.

TABLE 13 : GAS WORKS : VALUE OF LAND AND BUILDINGS, PLANT AND MACHINERY :

AUSTRALIA

(£)

Year	Book values as at 30th June (a)		Additions & 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
1938-39	1,462,772	7,498,428	30,182	394,321	31,380	228,511
1945-46	1,571,427	9,475,328	39,207	781,384	22,214	239,595
1952-53	2,342,179	15,961,959	167,167	2,552,652	31,791	336,690
1953-54	2,416,176	17,234,856	136,725	1,664,445	32,940	402,392
1954-55	2,488,304	19,134,481	111,602	2,529,981	26,732	441,081

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

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COMMONWEALTH BUREAU OF CENSUS AND STATISTICS

CANBERRA, A.C.T. 14TH SEPTEMBER, 1956