

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS, CANBERRA
AUSTRALIA

MANUFACTURING INDUSTRIES,
1952-1953

NO. 32. GAS WORKS.

Prepared Under Instructions from
THE RIGHT HONORABLE THE TREASURER,

by

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MANUFACTURING INDUSTRIES: 1952-53

PREFACE

1. **GENERAL:** The Bulletins in the series for 1952-53 are listed on the back of the cover of this Bulletin and incorporate the same range of industries as the 1951-52 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 as far as possible to the operations of factories classified to the industry specified. Sometimes articles normally produced in the industry covered by a particular Bulletin are also produced, as subsidiary production, in other industries, and, wherever possible, quantity tables have been extended to show details of production separately for the industry under review and the total in all industries.

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

Briefly, a "factory" is taken to be a manufacturing establishment in which four or more persons are employed or in which power other than hand is used.

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 do include, however, proprietors who work in their own factories as well as "out-workers".

The value of output is the selling value at the factory of goods made or processed during the year, including by-products. 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

CANBERRA, A.C.T.

GAS 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 1950-51 to 1952-53, and (B) a dissection by Ownership for 1952-53.

TABLE 1 : GAS WORKS : AUSTRALIA

Year	Number of Factories (1)	Persons Employed (a) (2)	Salaries & Wages Paid (b) (3)	Power, Fuel & Light etc. Used (c) (4)	Value of Materials, etc. Used (d) (5)	Value of Production (e) (6)	Value of Output (c) (7)
<u>(A) COMPARATIVE SUMMARY</u>							
1938-39	No. 107	No. 2,931	£'000 785	£'000 251	£'000 1,872	£'000 2,694	£'000 4,817
1945-46	104	3,502	1,194	448	3,965	3,313	7,726
1950-51	100	3,871	2,401	1,179	9,450	4,426	15,055
1951-52	100	4,042	3,207	1,777	13,401	7,165	22,343
1952-53	99	4,199	3,553	2,080	15,576	8,473	26,129
Type of Owner- ship	<u>(B) DISSECTION BY OWNERSHIP : 1952-53</u>						
Government	No. 9	No. 1,242	£'000 1,115	£'000 110	£'000 4,957	£'000 1,532	£'000 6,599
Local Author- ity	30	245	198	81	445	208	734
Companies	60	2,712	2,240	1,889	10,174	6,733	18,796

(a) Average over whole year; includes Working Proprietors. (b) Excludes amounts drawn by Working Proprietors. (c) Excludes the value of coke produced and used in own works in some States. (d) Excludes 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).

In the following table particulars of the Industry are given for each State during the year 1952-53.

TABLE 2 : GAS WORKS : STATES, 1952-53

	N.S.W.	VIC	Q'LD.	S.A.	W.A.	TAS.	AUST.
No. of Factories	39	35	16	3	4	2	99
No. Employed (a)							
Males	1,512	1,494	434	(b)	212	(b)	4,171
Females	17	2	7	(b)		(b)	28
Total	1,529	1,496	441	(b)	212	(b)	4,199
Value of -	£	£	£	£	£	£	£
Salaries and Wages Paid (c)	1,316,915	1,324,743	334,437	(b)	156,597	(b)	3,553,389
Power, Fuel and Light, etc. Used (d)	1,872,477	109,940	25,886	(b)	60,860	(b)	2,080,455
Materials, etc. used	6,227,311	6,191,800	978,359	(b)	712,022	(b)	15,575,621
Production (e)	5,200,967	1,966,336	620,855	(b)	188,058	(b)	8,472,804
Output (d) (f)	13,300,755	8,268,076	1,625,100	(b)	960,940	(b)	26,128,880
Land and Buildings	1,260,726	571,061	277,545	(b)	144,338	(b)	2,342,179
Plant and Machinery	5,124,625	6,098,103	1,463,237	(b)	1,212,277	(b)	15,961,959
H.P. of Engines	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
ordinarily in use	14,795	9,801	2,010	(b)	1,237	(b)	29,514

(a) Average over whole year; includes Working Proprietors. (b) Not available for publication. These figures are included in the total for Australia. (c) Excludes amounts drawn by Working Proprietors. (d) Excludes the value of Coke produced and used in own works in some States. (e) See note (e) to Table 1. (f) 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.

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 1950-51 to 1952-53.

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
1950-51	620	3,889	1,254	54.24
1951-52	793	5,528	1,773	44.76
1952-53	846	6,223	2,018	41.94

(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 Gas Works in Australia for the year 1952-53.

TABLE 4 : MATERIALS USED AND GAS PRODUCED IN GAS WORKS : AUSTRALIA.

Particulars	Unit of Quantity	Quantity	Value (£)
<u>Materials Used -</u>			
Coal carbonized	ton	2,081,363	12,477,535
Purifying material	"	10,422	109,959
Oil (a)	gal	19,121,789	1,490,387
<u>Gas Produced -</u>			
Gas Sold	'000 cu.ft.	35,113,079	21,677,663
Gas used in own works	"	170,478	(b)
Gas lost	"	5,438,571	(b)
Total Gas Sold, Used or Lost:	"	40,722,128	(b)

(a) Used as Material, not as Fuel. (b) 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, 1952-53

Particulars	Unit of Quantity	Produced in Gas Works		Produced in All Factories	
		Quantity	Value (£)	Quantity	Value (£)
Coke	ton	1,071,106	(a)	(b) 2,929,534	(a)
Coke Breeze	"	62,965	110,843	164,100	181,998
Tar - Used in own works	gal.	3,610,798	(c)	3,610,798	(a)
Crude, for sale	"	(d) 40,797,541	1,386,680	40,797,541	1,386,680
Refined, for sale	"	(d) 15,698,510	551,314	15,698,510	551,314
Tar Oils, Crude	"	(d) 3,674,340	253,323	3,674,340	253,323
Ammoniacal Liquor	"	(d) 21,949,963	117,772	21,949,963	117,772
Sulphate of Ammonia	ton	(e)	(e)	70,174	2,419,772

(a) Not available. (b) Includes 1,856,428 tons of Metallurgical Coke.
(c) Quantity only collected. (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 (1) coal used and gas and coke produced in Gas Works and (2) coal used and coke produced in Coke Works in Australia during the years 1938-39, 1945-46 and 1950-51 to 1952-53, together with preliminary figures for 1953-54.

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

Year	Gas Works			Coke Works	
	Coal Used Ton	Gas Produced '000 cub.ft.	Coke Produced Ton	Coal Used Ton	Metallurgical Coke Produced Ton
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
1950-51	1,963,865	37,875,418	1,111,854	2,617,708	1,515,782
1951-52	2,096,783	40,390,949	1,203,602	2,834,656	1,636,982
1952-53	2,081,363	40,722,128	1,071,106	3,071,147	1,858,428
1953-54 (a)	(b)	42,604,700	(b)	(b)	2,022,614

(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 1950-51 to 1952-53 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		1950-51		1951-52		1952-53	
	No. of Fac- tories	No. Em- ployed	No. of Fac- tories	No. Em- ployed	No. of Fac- tories	No. Em- ployed	No. of Fac- tories	No. Em- ployed	No. of Fac- tories	No. Em- ployed
Under 4	45	106	17	41	12	31	10	26	11	31
4	10	40	13	52	9	36	9	36	10	40
5 to 10	17	117	33	220	35	250	35	259	31	225
11 to 20	17	233	13	192	15	229	16	233	16	241
21 to 50	10	329	17	584	16	526	16	506	17	528
51 to 100	2	162	3	196	5	295	6	356	5	299
101 to 200	6	1,944	4	592	4	604	4	645	5	801
201 & over			4	1,625	4	1,900	4	1,983	4	2,064
Total:	107	2,931	104	3,502	100	3,871	100	4,044	99	4,229
Average No. employed per Factory	27		34		39		40		43	

Further details of employment in the industrial group "Gas Works" are furnished in the next three tables. In Table 8, the numbers of persons employed in Gas Works are shown according to the nature of their employment for the year 1952-53.

TABLE 8 : GAS WORKS : PERSONS EMPLOYED ACCORDING TO OCCUPATIONAL STATUS : AUSTRALIA
1952-53

Occupational Status	Gas Works			
	Government	Local Authority	Other	Total
Working Proprietors	-	-	-	-
Managerial and Clerical Staff, incl. Salaried Managers and Working Directors ..	44	28	184	256
Chemists, Draftsmen and Other Laboratory and Research Staff	44	-	77	121
Foremen and Overseers	66	12	134	212
Workers in Factory (Skilled and Unskilled) Carters (excl. Delivery only), Messengers and Persons working regularly at Home	1,084	203	2,209	3,496
	4	2	108	114
Total:	1,242	245	2,712	4,199

In Table 9, the numbers of males employed are shown for the years 1938-39, 1945-46 and 1950-51 to 1952-53 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	1950-51	1951-52	1952-53
Males					
Working Proprietors	-	1	-	-	-
Managerial & Clerical Staff, incl.					0
Salaried Managers & Working Directors		223	254	258	233
Chemists, Draftsmen & Other Laboratory					
and Research Staff	2,522	103	109	129	118
Foreman and Overseers		167	204	204	212
Workers in Factory (Skilled & Unskilled)		2,924	3,147	3,293	3,494
Other (Carters, Messengers, etc.)	354	52	119	125	114
Total Males	2,876	3,470	3,833	4,009	4,171
Total Females (a)	55	36	38	33	28
Total Persons	2,931	3,502	3,871	4,042	4,199

(a) Mainly Clerical Staff.

The numbers of persons employed in Gas Works, on or about the 15th June, for the years 1939, 1946 and 1951 to 1953 are distributed according to age and sex in Table 10.

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
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MALES

1939	8	(a)	(a)	(a)	(a)	(a)	118	2,785	2,911
1946	11	9	15	34	25	14	97	3,538	3,646
1951(b)	4	3	11	14	13	19	50	3,866	3,930
1952(b)	4	10	9	13	11	24	67	4,089	4,166
1953(b)	7	4	10	5	11	8	38	4,139	4,184

FEMALES

1939	-	(a)	(a)	(a)	(a)	(a)	12	44	56
1946	-	1	1	1	1	2	6	26	32
1951(b)	-	3	2	1	2	3	11	23	34
1952(b)	-	1	2	2	4	2	11	22	33
1953(b)	-	-	1	2	4	3	10	18	23

(a) Details not collected.

(b) At last pay-day in June.

in this group are given in the next table. The details given include 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	1951-52	1952-53	1938-39	1951-52	1952-53
Steam - Reciprocating ..	5,365	7,817	7,616	1,147	1,469	1,645
Turbine ..	6,390	6,779	6,984	1,394	1,365	1,631
Internal Combustion ..						
Gas ..	3,787	1,910	1,850	1,023	880	719
Petrol or other Light Oils ..	30	546	569	3	184	163
Heavy Oils ..	-	70	80	4	143	135
Water ..	-	-	-	-	-	-
Total, Prime Movers:	15,572	17,122	17,099	3,571	4,041	4,293
Motors driven by electricity -						
Purchased ..	2,333	11,305	12,415	931	2,623	3,083
Own Generation ..	(a) 6,248	(a) 8,479	(a) 8,331	962	386	383
Total, Electricity:	9,281	19,784	20,746	1,893	3,009	3,466
Total Power Used:	17,905	28,427	29,514	5,464	7,050	7,759

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

6. **POWER, FUEL AND LIGHT, ETC. USED:** Details of the quantities and values of the various items of power, fuel and light, etc., used in Gas Works, are shown in the following table for the year 1938-39, 1951-52 and 1952-53.

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

Particulars	Unit or Qty	Quantity			Value (£)		
		1938-39	1951-52	1952-53	1938-39	1951-52	1952-53
Power, Fuel & Light-							
Coal - Black ..	ton	1,590	1,760	2,201	1,503	7,807	11,055
Coke ..	"	136,797	334,657	344,894	145,352	1,352,146	1,582,075
Wood ..	"	4,289	6,307	6,065	2,379	15,191	15,690
Fuel Oil ..	gal	3,115,191	3,795	3,684	45,455	392	416
Tar (Fuel) ..	"		8,154,581	7,420,788		164,181	197,677
Electricity ..	(a)		(a)	(a)	17,587	116,868	144,904
Gas ..	-	-	-	(a)	-	-	503
Other (Charcoal, etc.) ..	-	(a)	(a)	(a)	3,575	3,285	3,839
Water & Lubricating Oil Used ..	-	(a)	(a)	(a)	34,235	117,014	124,296
Total:		(a)	(a)	(a)	250,736	1,776,884	2,080,455

(a) Value only available.

In Table 9, the numbers of males employed are shown for the years 1938-39, 1945-46 and 1950-51 to 1952-53 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	1950-51	1951-52	1952-53
Males						
Working Proprietors		-	1	-	-	-
Managerial & Clerical Staff, incl.						
Salaried Managers & Working Directors			223	254	258	233
Chemists, Draftsmen & Other Laboratory						
and Research Staff		2,522	103	109	129	118
Foreman and Overseers			167	204	204	212
Workers in Factory (Skilled & Unskilled)			2,924	3,147	3,293	3,494
Other (Carters, Messengers, etc.)		354	52	119	125	114
Total Males		2,876	3,470	3,833	4,009	4,171
Total Females (a)		55	32	38	33	28
Total Persons		2,931	3,502	3,871	4,042	4,199

(a) Mainly Clerical Staff.

The numbers of persons employed in Gas Works, on or about the 15th June, for the years 1939, 1946 and 1951 to 1953 are distributed according to age and sex in Table 10.

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
MALES									
1939	8	(a)	(a)	(a)	(a)	(a)	118	2,785	2,911
1946	11	9	15	34	25	14	97	3,538	3,646
1951(b)	4	3	11	14	13	19	50	3,866	3,930
1952(b)	4	10	9	13	11	24	67	4,089	4,160
1953(b)	7	4	10	5	11	9	38	4,139	4,184
FEMALES									
1939	-	(a)	(a)	(a)	(a)	(a)	12	44	56
1946	-	1	1	1	1	2	6	26	32
1951(b)	-	3	2	1	2	3	11	23	34
1952(b)	-	1	2	2	4	2	11	22	33
1953(b)	-	-	1	2	4	3	10	18	28

(a) Details not collected.

(b) At last pay-day in June.

5. **POWER EQUIPMENT** : Statistics of the power equipment of the factories included in this group are given in the next table. The details given include 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	1951-52	1952-53	1938-39	1951-52	1952-53
Steam - Reciprocating ..	5,365	7,817	7,616	1,147	1,469	1,645
Turbine ..	6,390	6,779	6,984	1,394	1,365	1,631
Internal Combustion ..						
Gas ..	3,787	1,910	1,850	1,023	880	719
Petrol or other Light Oils ..	30	546	569	3	184	163
Heavy Oils ..	-	70	80	4	143	135
Water ..	-	-	-	-	-	-
Total, Prime Movers:	15,572	17,122	17,099	3,571	4,041	4,291
Motors driven by electricity -						
Purchased ..	2,333	11,305	12,415	931	2,623	3,083
Own Generation ..	(a) 6,248	(a) 8,479	(a) 8,331	962	386	381
Total, Electricity:	9,281	19,784	20,746	1,893	3,009	3,466
Total Power Used:	17,905	28,427	29,514	5,464	7,050	7,759

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

6. **POWER, FUEL AND LIGHT, ETC. USED**: Details of the quantities and values of the various items of power, fuel and light, etc., used in Gas Works, are shown in the following table for the year 1938-39, 1951-52 and 1952-53.

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

Particulars	Unit or Qty	Quantity			Value (£)		
		1938-39	1951-52	1952-53	1938-39	1951-52	1952-53
Power, Fuel & Light-							
Coal - Black ..	ton	1,590	1,760	2,201	1,503	7,807	11,055
Coke ..	"	136,797	334,657	344,894	145,352	1,352,146	1,582,075
Wood ..	"	4,289	6,307	6,065	2,379	15,191	15,690
Fuel Oil ..	gall	3,115,191	3,795	3,684	45,455	392	416
Tar (Fuel) ..	"		8,154,581	7,420,788		164,181	197,677
Electricity ..	-	(a)	(a)	(a)	17,587	116,868	144,904
Gas ..	-	-	-	(a)	-	-	503
Other (Charcoal, etc.) ..	-	(a)	(a)	(a)	3,575	3,285	3,839
Water & Lubricating Oil Used ..	-	(a)	(a)	(a)	34,235	117,014	124,296
Total:		(a)	(a)	(a)	250,786	1,776,884	2,080,455

(a) Value only available.

7. VALUE OF LAND AND BUILDINGS, PLANT AND MACHINERY: Particulars of the book values of premises occupied and plant used in Gas Works at the 30th June for the years 1938-39, 1945-46 and 1950-51 to 1952-53 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 and Replace- ments 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	208,511
1945-46	1,571,427	9,475,328	39,207	781,384	22,214	239,595
1950-51	2,070,523	12,385,710	139,770	1,126,202	14,772	279,987
1951-52	2,185,900	13,846,223	169,816	2,330,411	25,411	324,390
1952-53	2,342,179	15,961,259	167,167	2,552,652	31,791	336,690

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

S. R. CARVER
ACTING COMMONWEALTH STATISTICIAN.

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS.

CANBERRA. A.C.T. 27TH AUGUST, 1954.