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OFFICIAL STATISTICS, COMMONWEALTH OF AUSTRALIA.

MANUFACTURING INDUSTRIES,
1936-37.

No. 9. ELECTRICAL MACHINERY AND EQUIPMENT.

PREPARED UNDER INSTRUCTIONS FROM
THE HONORABLE THE TREASURER.

BY

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P R E F A C E

As a result of the deliberations of the Conference of Commonwealth and State Statisticians held in March, 1937, the statistics of factory production in Australia have been considerably extended, and a much greater degree of uniformity has been attained than in previous years. In consequence a more comprehensive analysis of the manufacturing industries is now possible.

While continuing to publish these statistics in the Official Year Book and the Production Bulletin, it is proposed to publish the details for the more important industries as soon as they become available in a series of special reports.

This is the ninth of the series, and it refers to the operations of establishments engaged in the manufacture of Electrical Machinery and Equipment. Similar reports for other industries will follow as the tabulations are completed. A list of those already issued is given in the footnote hereunder while the complete list of the industries it is proposed to include in these Reports is given on the back cover.

The improvements in the scope and uniformity of the factory statistics have only been made possible by the ready co-operation and assistance of the manufacturers of Australia and the Statisticians of the several States.

ROLAND WILSON

Commonwealth Statistician

Canberra, A.C.T.
1st September, 1938.

NOTE:- Previously issued: Nos. 1, 2, 18, 3, 4, 5, 6, 8.

ELECTRICAL MACHINERY AND EQUIPMENT.

The following table furnishes a summary of the principal statistics of the factories engaged in the manufacture of Electrical Machinery and Equipment.

1. ELECTRICAL MACHINERY AND EQUIPMENT - AUSTRALIA, 1930-31 TO 1936-37.

Year	Number of Factories	Persons Employed (a)	Salaries and Wages Paid (b)	Power, Fuel and Light Used	Value of Other Materials Used	Value of Production	Value of Output
	No.	No.	£'000	£'000	£'000	£'000	£'000
1930-31	231	4,098	793	43	961	1,165	2,169
1931-32	248	4,356	701	49	1,057	1,226	2,332
1932-33	246	5,055	848	55	1,145	1,362	2,562
1933-34	275	5,774	932	64	1,383	1,684	3,131
1934-35	280	7,098	1,131	67	1,717	2,038	3,822
1935-36	294	8,137	1,326	74	2,059	2,196	4,329
1936-37	318	9,215	1,534	66	2,385	2,615	5,086

(a) Including Working Proprietors. (b) Exclusive of amounts drawn by Working Proprietors.

In the following table particulars of the Industry are given for each State during the year 1936-37.

2. ELECTRICAL MACHINERY AND EQUIPMENT - STATES, 1936-37.

Particulars	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	AUSTRALIA
	No.	No.	No.	No.	No.	No.	No.
Number of Factories	125	125	13	27	23	5	318
Number Employed (a)-							
Males	4,565	2,593	109	438	115	27	7,847
Females	809	486	11	51	11	-	1,368
Total	5,374	3,079	120	489	126	27	9,215
	£.	£.	£.	£.	£.	£.	£.
Value of -							
Salaries and Wages Paid (b) ..	923,072	493,081	22,028	71,768	20,991	3,475	1,534,415
Fuel used ..	55,911	22,685	574	5,247	1,273	92	85,782
Materials used ..	1,406,308	773,197	29,481	150,460	22,087	3,621	2,385,154
Production ..	1,631,476	792,897	31,455	113,469	39,081	6,462	2,614,640
Output	3,093,695	1,588,779	61,510	269,176	62,441	10,175	5,085,776
Land and Buildings	769,409	412,959	30,999	76,860	49,235	9,750	1,349,212
Plant and Machinery	448,128	190,856	6,406	32,886	8,536	928	687,740
	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
H.P. of Engines Ordinarily in use ..	6,312	3,216	110	573	160	9	10,380

(a) Includes Working Proprietors. (b) Exclusive of amounts drawn by Working Proprietors.

Particulars of the average salary and wage paid together with the average values per employee of output and production are shown in the following table for each of the years indicated:-

**3. AVERAGE SALARIES AND WAGES PAID, OUTPUT ETC. PER EMPLOYEE -
AUSTRALIA, 1930-31 TO 1936-37.**

Year	Salaries and Wages per Employee (a)	Value of Output per Person Engaged (b)	Value of Production per Person Engaged (b)	Ratio per cent of Salaries and Wages to Value of Production
	£.	£.	£.	%
1930-31	201	529	284	68.03
1931-32	167	535	281	57.20
1932-33	173	507	269	62.27
1933-34	167	542	292	55.33
1934-35	164	539	287	55.49
1935-36	167	532	270	60.37
1936-37	170	552	284	58.68

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

Particulars of the articles produced in factories engaged in the manufacture of Electrical Machinery and Equipment during 1936-37 are shown in the following table.

4. ARTICLES PRODUCED - AUSTRALIA, 1936-37.

Particulars	Unit of Quantity	Quantity	Value £.
Dynamos - Alternators and Generators..	No.	615	14,857
Motors - Alternating Current ..	"	14,871	196,758
Direct Current ..	"	367	41,128
Transformers and Converters -			
Above 20 K.V.A. ..	"	1,057	145,939
Below 20 K.V.A. -			
For use in Neon Signs ..	"	4,707	13,319
For use in Radio and Electrical toys ..	"	72,857	27,255
For industrial use other than the supply of power and light ..	"	892	11,230
Electric Batteries - Dry ..	"	14,074,629	473,618
Accumulators (Automobile, Radio) ..	"	467,313	554,195
Apparatus for Telegraph and Telephone	"	(a)	83,345
Apparatus for Regulating, Starting and Controlling ..	-	(a)	251,944
Household Fittings..	-	(a)	156,976
Portable Tools and Appliances ..	-	(a)	7,283
Small Household Electro Mechanical Appliances (not exceeding 33 lb.) ..	-	(a)	37,428
Other Appliances and Apparatus -			
Electric Appliances for motor vehicles, cycles and explosion motors ..	-	(a)	17,717
Electric Stoves Ranges and Cookers..	-	(a)	30,698
Other Domestic Cooking Apparatus ..	-	(a)	82,774
Electric Heating Apparatus ..	-	(a)	136,597
Other (Neon Signs etc.) ..	-	(a)	218,942

(a) Value only collected.

The following table furnishes details of the number of factories and the number employed in each State in the Industrial group - Electrical Machinery and Equipment. For statistical purposes a factory is defined as an industrial establishment in which four or more hands are employed, or in which power other than hand is used.

/ 5. FACTORIES

5. FACTORIES AND EMPLOYMENT - STATES, 1936-37.

State	Number of Factories	Number employed (Average over over whole year		
		Males	Females	Total
New South Wales ..	125	4,565	809	5,374
Victoria ..	125	2,593	486	3,079
Queensland ..	13	109	11	120
South Australia ..	27	438	51	489
Western Australia ..	23	115	11	126
Tasmania ..	5	27	-	27
TOTAL:	318	7,847	1,368	9,215

The number of employees in the previous table has been adjusted to represent the average employment over the whole year in those cases where short time was worked. In the following table, the factories have been classified according to the average number employed during the actual period worked.

6. FACTORIES: CLASSIFIED ACCORDING TO HANDS EMPLOYED - AUSTRALIA, 1930-31 TO 1936-37.

Number of Persons Employed in each Factory	1930-31		1933-34		1934-35		1935-36		1936-37	
	Number of Fac- tories	Number Em- ployed	Number of Fac- tories	Number Em- ployed	Number of Fac- tories	Number Em- ployed	Number of Fac- tories	Number Em- ployed	Number of Fac- tories	Number Em- ployed
Under 4	81	168	81	155	75	163	76	156	83	176
4	13	52	17	68	29	116	18	72	18	72
5 to 10	63	438	80	560	60	431	76	523	80	561
11 to 20	28	404	40	577	47	667	48	681	53	773
21 to 50	26	726	32	1,035	39	1,264	42	1,338	49	1,540
51 to 100	14	942	13	925	13	868	16	1,140	12	885
Over 100	6	1,491	12	2,489	17	3,604	18	4,261	23	5,236
TOTAL:	231	4,221	275	5,809	280	7,113	294	8,171	318	9,243
Average Number Employed per Factory:	18		21		25		28		29	

Further details of employment in the industrial group - Electrical Machinery and Equipment are furnished in the next three tables. In the first the employees have been classified according to the nature of their employment.

7. PERSONS EMPLOYED CLASSIFIED ACCORDING TO GRADE OF OCCUPATION - AUSTRALIA, 1930-31 TO 1936-37.

Grade of Occupation	1930-31	1933-34	1934-35	1935-36	1936-37
Working Proprietors ..	149	190	189	194	211
Managers and Overseers ..	239	244	264	279	312
Clerical Staff ..	325	437	534	596	744
Engine Drivers and Firemen ..	3	5	12	5	10
Workers, Skilled and Unskilled ..	3,360	4,843	6,034	7,000	7,853
Other (Carters and Messengers) ..	22	55	65	63	85
TOTAL:	4,098	5,774	7,093	8,137	9,215

The information collected from factories was extended in 1936-37 to include details of the numbers employed (excluding Working Proprietors) on the pay-day nearest to the 15th of each month.

8. PERSONS EMPLOYED ON PAY-DAY NEAREST TO THE 15TH OF EACH MONTH -

AUSTRALIA, 1936-37.

(Working Proprietors Excluded)

Month	Males	Females	Total	Month	Males	Females	Total
1936 -	No.	No.	No.	1937 -	No.	No.	No.
July ..	7,156	1,280	8,436	January	7,476	1,303	8,779
August ..	7,189	1,259	8,448	February	7,457	1,351	8,808
September	7,244	1,248	8,492	March ..	7,435	1,345	8,780
October ..	7,345	1,253	8,598	April ..	7,495	1,366	8,861
November	7,404	1,271	8,675	May ..	7,601	1,409	9,010
December	7,651	1,286	8,937	June ..	7,744	1,437	9,181

A classification of the number of employees, according to age, on or about the 15th June, 1937, is shown in the next table:-

9. PERSONS EMPLOYED CLASSIFIED ACCORDING TO AGE, JUNE, 1937.

Sex	Under 16 years	16 and under 21 years	Adults	Total
	No.	No.	No.	No.
Males	570	2,700	4,474	7,744
Per Cent of Total	7%	35%	58%	100%
Females	154	803	480	1,437
Per Cent of Total	11%	56%	33%	100%
Persons	724	3,503	4,954	9,181
Per Cent of Total	8%	38%	54%	100%

Statistics of the power equipment of the factories included in this group are now obtained in more extensive detail than hitherto. On account of the change from average horsepower used to rated horsepower of engines installed, however, comparison with previous years cannot be made.

10. POWER EMPLOYED TO DRIVE MACHINERY - AUSTRALIA, 1936-37.

Class of Engine	Rated H.P. Ordinarily in Use
Internal Combustion -	H.P.
Petrol or Other Light Oils ..	6
Heavy Oils	15
Water	-
Total Prime Movers ..	21
Motors driven by electricity -	
Purchased	10,359
Own Generation	50
Total Electricity	10,409
Total Power used (a):	10,380

(a) Without duplication.

Details of the quantities and values of the various items of power, fuel and light used in Electrical Machinery and Equipment factories are shown in the following table.

11. POWER, FUEL AND LIGHT, ETC. USED - AUSTRALIA, 1936-37.

Particulars	Unit of Quantity	Quantity	Value £.
Coal - Black	Ton	1,692	2,098
Brown	"	50	74
Coke	"	1,782	2,949
Wood	"	41	44
Fuel Oil	Gallon	119,446	2,868
Electricity	-	(a)	56,329
Gas	-	(a)	13,434
Other (Charcoal, etc.) ..	-	(a)	242
Water used	-	(a)	5,034
Lubricating Oil	-	(a)	2,710
TOTAL:		..	85,782

(a) Value only available.

/ Particulars

Particulars of the book values of premises occupied and plant used in Electrical Machinery and Equipment factories at the 30th June for each of the five years ended 1937 are shown in the next table. In addition, details of the values of additions and replacements made and depreciation allowed during the year 1936-37 are also shown. It should be noted that the amounts expended in Additions and Replacements refer to expenditure incurred by existing factories and do not include the cost of erecting and equipping new factories; these latter items, however, are included with the book values shown at 30th June. The amounts shown for Depreciation are those returned by factories. Changes in the number of factories operating affect comparison from year to year.

12. VALUE OF LAND AND BUILDINGS, PLANT AND MACHINERY - AUSTRALIA, 1936-37.

Particulars	Land and Buildings	Plant and Machinery
	£.	£.
Additions and Replacements made during year (a)	76,777	155,739
Depreciation allowed during year (a) ..	16,510	76,001
Book Value (a) as at 30th June -		
1937	1,349,212	687,740
1936	1,245,877	660,504
1935	1,168,474	659,005
1934	1,122,331	666,988
1933	1,063,843	677,566

(a) See Note above.

The values of imports and exports of a number of items included in the group - Electrical Machinery and Equipment - are given in the following tables:-

13. VALUE OF IMPORTS - ELECTRICAL MACHINERY AND EQUIPMENT - AUSTRALIA.

Particulars	1928-29	1930-31	1934-35	1935-36	1936-37
	£A.	£A.	£A.	£A.	£A.
Cable and Wire, Covered ..	1,317,115	573,031	809,059	1,131,736	1,344,018
Carbon Manufactures ..	30,455	36,194	68,678	73,576	85,539
Circuit Breakers ..	(a)	(a)	59,813	88,150	216,131
Dynamo Electric Machines ..	746,292	331,184	278,408	566,795	622,407
Fittings, Electric, viz:- Switches, Fuses, Etc. ..	435,624	173,282	76,240	110,362	125,578
Lamps, Filament for Lighting and Heating ..	664,422	591,254	261,131	258,632	278,123
Measuring and Recording Instru- ments ..	154,570	70,508	111,937	152,308	161,185
Motors under 1 H.P. ..	(a)	75,890	60,810	117,761	124,331
Regulating, Starting and Con- trolling Apparatus ..	296,889	205,059	83,406	122,348	158,567
Static Transformers and Induc- tion Coils, Etc. ..	155,984	56,599	27,520	53,849	76,389
Telephones ..	64,008	33,274	64,569	144,706	60,409
Telephone Switchboards, Tele- phone Distributing Boards, Etc.	297,155	162,923	191,198	411,049	614,594
Other Electrical Machinery and Appliances ..	1,859,310	1,979,385	452,394	460,452	559,933

(a) Included in Other Electrical Machinery and Appliances.

14. VALUE OF EXPORTS - ELECTRICAL MACHINERY AND EQUIPMENT - AUSTRALIA.

Particulars	1928-29	1930-31	1934-35	1935-36	1936-37
	£A.	£A.	£A.	£A.	£A.
Machinery and Appliances, Electrical ..	107,328	190,551	203,633	165,972	238,703
Materials other than Machinery and Appliances, Electrical..	106,734	55,720	61,390	189,286	218,539