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OFFICIAL STATISTICS, COMMONWEALTH OF AUSTRALIA.

MANUFACTURING INDUSTRIES, 1938-39.

NO. 9 ELECTRICAL MACHINERY AND EQUIPMENT

PREPARED UNDER INSTRUCTIONS FROM
THE HONORABLE THE TREASURER.

BY

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By Authority

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PREFACE.

1. Industries included in the Series: A complete list of the industries for which summaries in this series are being issued is given on the back of the cover page. They will be published as the material becomes available, and not necessarily in the order shown in the list. The following summaries have already been published: Nos. 1, 2, 3, 4, 5, 6 and 8.
2. Classification of Factories: The classification of factories in Australia is based on the nature of the product. Where two or more distinct types of industrial activity are carried on in one establishment, factory proprietors are requested to furnish separate returns for each activity. In some instances, however, this is not practicable, and in such cases there is no alternative but to classify the factory according to its predominant activity. This difficulty is most acute in the Metal Trades industries (e.g. Engineering firms also producing Agricultural Implements, Stoves and Ovens, and/or Brass and Copper products), but it is also to be found in factories concerned with the treatment or manufacture of Skins, Leather, Clothing, Wood products and some other articles. In consequence, and to an extent which will vary with individual industries, the figures may include the subsidiary but extraneous activities of those establishments included in the industry, while they will exclude relevant activities which are subsidiary to the predominant activity of establishments classified to some other industry. This qualification is not important in the case of Electrical Machinery and Equipment, the industry with which this summary is concerned.
3. Basis of the Statistics: The scope of the factory statistics is fully explained in Part I of the annual Production Bulletin.

Briefly, a "factory" is taken to be an industrial establishment in which four or more hands 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, and retailing storemen. The figures do include, however, proprietors who work in their own business and "out-workers".

The value of output is the wholesale 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 of output minus the cost of raw materials, containers, power, fuel, light, lubricants, water, tools replaced and repairs to plant.

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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 1938-39.

Year	Number of Factories	Persons Employed (a)	Salaries and Wages Paid (b)	Power, Fuel and Light used	Value of Other Materials	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	86	2,385	2,615	5,086
1937-38	354	11,054	1,915	102	3,101	3,291	6,494
1938-39	360	10,666	2,031	104	3,195	3,655	6,954

(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 1938-39.

2. ELECTRICAL MACHINERY AND EQUIPMENT : STATES, 1938-39.

Particulars	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	AUSTRALIA
	No.	No.	No.	No.	No.	No.	No.
Number of Factories	148	132	16	32	28	4	360
Number Employed(a)							
Males ..	5,540	2,753	156	538	151	22	9,160
Females ..	899	513	12	68	13	1	1,506
Total ..	6,439	3,266	168	606	164	23	10,666
	£.	£.	£.	£.	£.	£.	£.
Value of -							
Salaries and Wages							
Paid (b) ..	1,254,190	615,522	32,498	97,086	28,577	3,225	2,031,098
Fuel used ..	64,719	30,441	808	6,718	1,803	105	104,594
Materials used	2,033,931	870,467	34,813	220,867	32,683	2,271	3,195,032
Production ..	2,246,563	1,104,658	46,933	202,351	49,385	4,982	3,654,872
Output ..	4,345,213	2,005,566	82,554	429,936	83,871	7,358	6,954,496
Land and Buildings	953,440	490,162	31,447	82,629	62,075	7,410	1,627,183
Plant and Machinery ..	559,935	275,390	8,460	40,190	11,417	1,161	896,553
	H. P.	H. P.	H. P.	H. P.	H. P.	H. P.	H. P.
H.P. of Engines Ordinarily in use	7,557	3,371	199	694	215	7	12,043

(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

**3. AVERAGE SALARIES AND WAGES PAID, OUTPUT ETC. PER
EMPLOYEE : AUSTRALIA, 1930-31 TO 1938-39.**

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
1937-38 ..	177	588	298	58.20
1938-39 ..	195	652	343	55.57

(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 1938-39 are shown in the following table. The quantities and values shown here are those furnished by the establishments included in this Summary only. The figures do not include similar articles produced in establishments not classified under Electrical Machinery and Equipment.

4. ARTICLES PRODUCED : AUSTRALIA, 1938-39.

Particulars	Unit of Quantity	Quantity	Value
			£
Dynamos - Alternators	No.	72	4,517
" Generators	"	455	13,092
Motors - Alternating Current ..	"	31,332	319,104
Direct Current	"	304	33,685
Transformers and Converters - Above 20 K.V.A. -			
For use in supplying industrial power and light	"	1,712	341,773
For industrial use other than power and light	"	165	9,345
Below 20 K.V.A. -			
For use in Neon Signs	"	13,228	28,428
For use in Radio and Electrical toys ..	"	23,264	9,330
For industrial use other than the supply of power and light	"	9,779	42,862
Electric Batteries - Dry	"	(b)	(b)
Wet	"	12,164	41,539
Accumulators (Automobile, Radio) ..	"	475,033	615,011
Bulbs and Small Tubes for Electric Light ..	-	(a)	(b)
Apparatus for Telegraph and Telephone ..	-	(a)	60,841
Apparatus for Regulating, Starting and Controlling	-	(a)	536,548
Household Fittings	-	(a)	242,081
Portable Tools and Appliances	-	(a)	1,950
Small Household Electro Mechanical Appliances (not exceeding 33 lb.)	-	(a)	48,119
Other Appliances and Apparatus -			
Electric Appliances for motor vehicles, cycles and explosion motors	-	(a)	37,388
Electric Stoves, Ranges and Cookers	-	(a)	(b)
Other Domestic Cooking Apparatus	-	(a)	119,412
Electric Heating Apparatus	-	(a)	192,518
Other (Neon Signs etc.)	-	(a)	466,818
Other Articles produced	-	(a)	3,270,128
Total Value of Output:		Value only	6,954,498

(a) Value only collected. (b) Not available for publication.

The number of employees in Table 2 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.

5. FACTORIES : CLASSIFIED ACCORDING TO HANDS EMPLOYED :
AUSTRALIA, 1930-31 TO 1937-38.

Number of Persons Employed in each Factory	1930-31		1933-34		1935-36		1936-37		1937-38 (a)	
	Number of Factories	Number Employed	Number of Factories	Number Employed	Number of Factories	Number Employed	Number of Factories	Number Employed	Number of Factories	Number Employed
Under 4	81	168	81	155	76	156	83	176	88	187
4 ..	13	52	17	68	18	72	18	72	19	76
5 to 10	63	438	80	560	76	523	80	561	88	624
11 to 20	28	404	40	577	48	681	53	773	60	872
21 to 50	26	726	32	1,035	42	1,338	49	1,540	56	1,757
51 to 100	14	942	13	925	16	1,140	12	885	19	1,396
Over 100	6	1,491	12	2,489	18	4,261	23	5,236	24	6,170
Total:	231	4,221	275	5,809	294	8,171	318	9,243	354	11,082
Average Number Employed per Factory	18		21		28		29		31	

(a) 1938-39 not yet available.

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.

6. PERSONS EMPLOYED CLASSIFIED ACCORDING TO GRADE OF OCCUPATION : AUSTRALIA, 1930-31 TO 1938-39.

Grade of Occupation	1930-31	1935-36	1936-37	1937-38	1938-39
Working Proprietors ..	149	194	211	239	235
Managers and Overseers ..	239	279	312	383	395
Clerical Staff ..	325	596	744	893	933
Engine Drivers and Firemen ..	3	5	10	14	13
Workers, Skilled and Unskilled..	3,360	7,000	7,853	9,441	8,998
Other (Carters and Messengers) ..	22	63	85	84	92
Total:	4,098	8,137	9,215	11,054	10,666

The next table shows the actual number of persons employed (excluding Working Proprietors) on the pay-day nearest to the 15th of each month for the years 1937-38 and 1938-39.

7. PERSONS EMPLOYED ON PAY-DAY NEAREST TO THE 15th OF EACH MONTH :
AUSTRALIA, 1937-38 AND 1938-39 (WORKING PROPRIETORS EXCLUDED).

Month	1937-38			1938-39		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
July ..	8,398	1,551	9,949	9,228	1,597	10,825
August ..	8,581	1,546	10,127	9,140	1,548	10,688
September	8,616	1,538	10,154	9,122	1,516	10,638
October..	8,830	1,570	10,400	9,024	1,489	10,513
November	9,014	1,580	10,602	8,877	1,451	10,328
December	9,128	1,607	10,735	8,882	1,467	10,349
January..	9,121	1,645	10,766	8,596	1,478	10,074
February	9,246	1,619	10,905	8,719	1,493	10,212
March ..	9,363	1,649	11,012	8,754	1,520	10,274
April ..	9,443	1,647	11,090	8,745	1,510	10,255
May ..	9,628	1,702	11,330	8,815	1,510	10,325
June ..	9,722	1,681	11,403	8,803	1,454	10,257
Average:	9,091	1,615	10,706	8,892	1,503	10,395

/A classification

A classification of the number of employees, according to age, on or about the 15th June, 1939, is shown in the next table:-

8. PERSONS EMPLOYED CLASSIFIED ACCORDING TO AGE, JUNE, 1939.

Sex	Under 16 years	16 and under 21 years	Adults	Total
	No.	No.	No.	No.
Males ..	461	2,935	5,407	8,803
Per cent of Total	5%	33%	62%	100%
Females ..	111	717	626	1,454
Per cent of Total	8%	49%	43%	100%
Persons ..	572	3,652	6,033	10,257
Per cent of Total	5%	36%	59%	100%

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 engines ordinarily in use together with those in reserve or idle for the years 1937-38 and 1938-39.

9. POWER EMPLOYED TO DRIVE MACHINERY : AUSTRALIA.

Class of Engine	Rated H.P. of Engines			
	Ordinarily in Use		In Reserve or Idle	
	1937-38	1938-39	1937-38	1938-39
Internal Combustion -				
Petrol or Other Light Oils ..	-	2	-	10
Heavy Oils ..	15	15	-	-
Water ..	-	-	-	-
Total Prime Movers:	15	17	-	10
Motors driven by electricity -				
Purchased ..	11,112	12,026	481	538
Own Generation..	423	344	49	68
Total Electricity:	11,535	12,370	530	606
Total Power Used (a):	11,127	12,643	530	616

(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.

10. POWER, FUEL AND LIGHT, ETC. USED : AUSTRALIA, 1938-39.

Particulars	Unit of Quantity	Quantity	Value
Coal - Black ..	ton	2,183	2,900
" Brown ..	"	44	77
Coke ..	"	861	1,638
Wood ..	"	32	52
Fuel Oil ..	gallon	123,790	3,393
Electricity ..	-	(a)	66,836
Gas ..	-	(a)	15,303
Other (Charcoal, etc.) ..	-	(a)	354
Water used ..	-	(a)	8,755
Lubricating Oil ..	-	(a)	4,666
Total:		Value only	104,594

(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 1939 are shown in the next table. In addition, details of the values of additions and replacements made and depreciation allowed during the year 1938-39 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 and other factors affect comparison from year to year.

11. VALUE OF LAND AND BUILDINGS, PLANT AND MACHINERY : AUSTRALIA, 1938-39.

Particulars	Land and Buildings	Plant and Machinery
	£.	£.
Additions and Replacements made during year (a)	68,910	191,711
Depreciation allowed during year (a) ..	42,981	88,640
Book Value (a) as at 30th June -		
1939	1,627,183	896,553
1938	1,570,455	799,283
1937	1,349,212	687,740
1936	1,245,877	660,504
1935	1,168,474	659,005

(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:-

12. VALUE OF IMPORTS : ELECTRICAL MACHINERY AND EQUIPMENT, AUSTRALIA.

Particulars	1928-29	1930-31	1936-37	1937-38	1938-39
	£A.	£A.	£A.	£A.	£A.
Cable and Wire, Covered ..	1,317,115	573,031	1,344,018	1,800,118	1,546,102
Carbon Manufactures ..	30,455	36,194	85,539	122,203	106,107
Circuit Breakers ..	(a)	(a)	216,131	223,466	289,365
Dynamo Electric Machines ..	746,292	331,184	622,407	810,937	831,636
Fittings, Electric, viz.:- Switches, Fuses, etc. ..	435,624	173,282	125,578	189,914	181,919
Lamps, Filament for Lighting and Heating ..	664,422	591,254	278,123	288,101	212,926
Measuring and Recording Instruments ..	154,570	70,508	161,185	161,585	193,932
Motors under 1 H.P. ..	(a)	75,890	124,331	237,234	215,344
Regulating, Starting and Controlling Apparatus ..	296,889	205,059	158,567	232,016	223,180
Static Transformers and In- duction Coils, etc. ..	155,984	56,599	76,389	75,282	99,948
Telephones ..	64,008	33,274	60,402	64,745	124,337
Telephone Switchboards, Tele- phone Distributing Boards, etc. ..	297,155	162,923	614,594	1,041,922	1,181,021
Other Electrical Machinery and Appliances ..	1,859,310	1,979,385	559,933	520,635	468,449

(a) Included in Other Electrical Machinery and Appliances.

13. VALUE OF EXPORTS : ELECTRICAL MACHINERY AND EQUIPMENT, AUSTRALIA.

Particulars	1928-29	1930-31	1936-37	1937-38	1938-39
	£A.	£A.	£A.	£A.	£A.
Machinery and Appliances, Electrical ..	107,328	190,551	238,703	372,142	312,560
Materials other than Machinery and Appliances, Electrical	106,734	55,720	218,539	146,295	80,070

The following table shows the weekly minimum rates of wage and hours of labour operating as at 30th June, 1939 as prescribed by Commonwealth and State Industrial Tribunals. Where no rate is shown it indicates that the particular occupation is not specifically provided for.

14. ELECTRICAL MACHINERY AND EQUIPMENT.

Minimum Weekly Rates of Wage and Hours of Labour as at 30th June, 1939.

Occupation	New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania	
	Hrs	Week-ly Wage	Hrs	Week-ly Wage	Hrs	Week-ly Wage	Hrs	Week-ly Wage	Hrs	Week-ly Wage	Hrs	Week-ly Wage
Dry Batteries - Males												
Mixers .. S	..	..	44	91/-	..	..	..	..	..	..	..	..
Solderers .. S	..	..	44	87/-	..	..	..	..	..	..	..	..
Finishers and Sealers .. S	..	..	44	87/-	..	..	..	..	..	..	..	..
Machine operators S	..	..	44	85/-	..	..	..	..	..	..	..	..
Hand stamper.. S	..	..	44	84/-	..	..	..	..	..	..	..	..
Dry Batteries - Females												
Solderers .. S	..	..	44	47/3	..	..	..	..	..	..	..	..
Finishers and Sealers .. S	..	..	44	47/3	..	..	..	..	..	..	..	..
Machine operators S	..	..	44	46/-	..	..	..	..	..	..	..	..
Hand wrappers S	..	..	44	46/-	..	..	..	..	..	..	..	..
Juniors .. S	..	..	44	(a)	..	..	..	..	..	..	..	..
Wet Battery -												
Mixing and posting by hand, charging, moulding grids C	44	95/-	44	94/-	44	90/-	44	91/-	44	90/-	44	90/-
Group burning C	44	94/-	44	93/-	44	89/-	44	90/-	44	89/-	44	89/-
Formation process C	44	92/-	44	91/-	44	87/-	44	88/-	44	87/-	44	87/-
All others .. C	44	90/-	44	89/-	44	85/-	44	86/-	44	85/-	44	85/-
Other Electrical -												
Tradesman Electrical Fitter C	44	112/-	44	111/-	44	107/-	44	108/-	44	107/-	44	107/-
Process worker C	44	90/-	44	89/-	44	85/-	44	86/-	44	85/-	44	85/-
Armature winders C	44	112/-	44	111/-	44	107/-	44	108/-	44	107/-	44	107/-
Instrument makers C	44	112/-	44	111/-	44	107/-	44	108/-	44	107/-	44	107/-
Electrical mechanics .. C	44	109/-	44	108/-	44	104/-	44	105/-	44	104/-	44	104/-
Juniors .. C		(b)		(b)		(b)		(b)		(b)		(b)

S. Denotes State Award. C. Denotes Commonwealth Court Award.

(a) Juniors according to age and experience.

(b) The Commonwealth Court Award provides rates for juniors according to age and experience with a 44 hour working week.